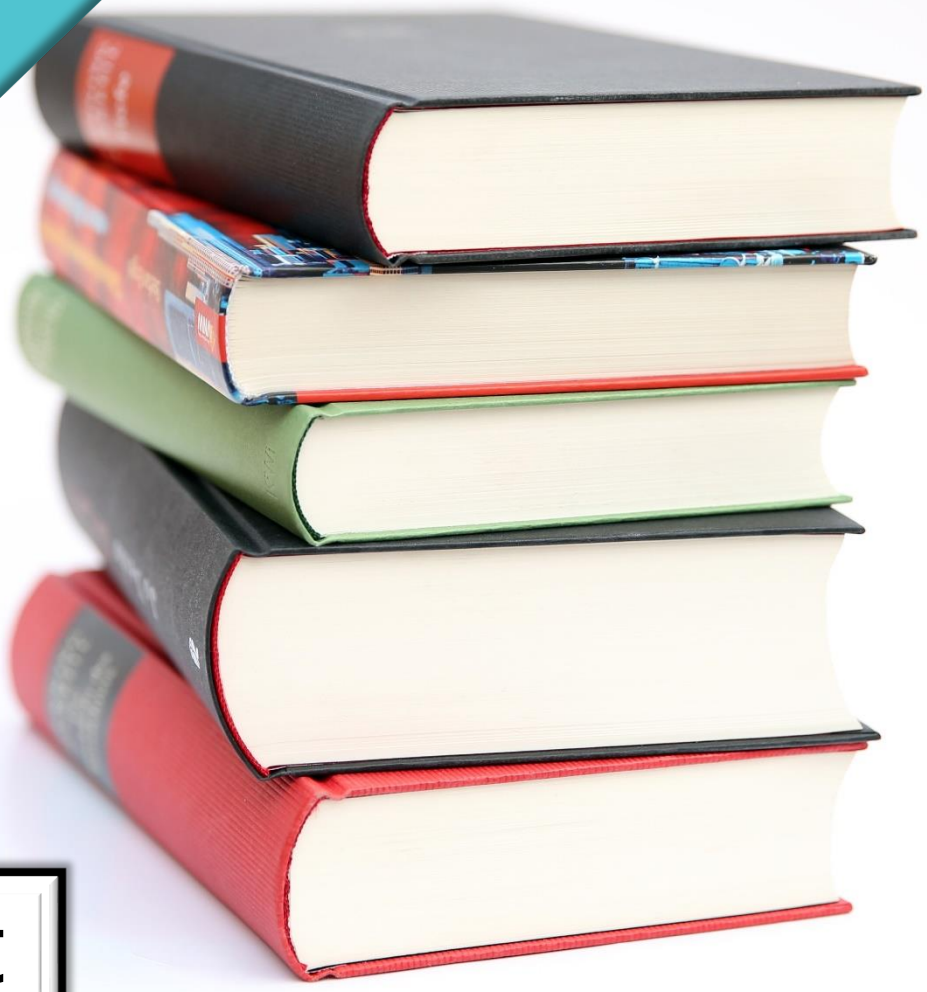
DAWLISH COLLEGE



9-1 booklet October - December 2020

Revision is the key: Ambition Unlocked

Name: _____

Study Group: _____

9 weeks until PPE **5th October – 11th October 2020**

English

Stave One

Jacob Marley, the business partner of Ebenezer Scrooge, died seven years ago. On a dingy Christmas Eve, Scrooge, a cold, unfriendly miser, works in his counting-house while keeping an eye on his clerk, a small man named Bob Cratchit. Scrooge's nephew wishes Scrooge a merry Christmas, but Scrooge answers him with a disdainful "Bah! Humbug!" He believes Christmas is the same as any day of the year, a day in which one must still pay bills. His nephew, Fred, thinks of Christmas as a "kind, forgiving, charitable, pleasant time." He invites Scrooge to dine with him tomorrow, but his uncle rejects the offer.

Consider the decluttered description of Scrooge. Think about how Dickens uses language to present Scrooge. Annotate around the description with your ideas.

a tight-fisted

squeezing, wrenching

old sinner

secret and self contained

solitary as an oyster

old features

pointed nose

eyes red

thin lips blue

grating voice

a wiry chin

Answer the following questions in complete sentences.

What is the first line of the novella? How does this line create a sense of tension?

Why do you think Scrooge never paints out Marley's name from the door of the warehouse?

Scrooge's clerk, Bob Cratchit, is described as sitting in a 'dismal, little cell.' What are the connotations of cell and how is this symbolic of Bob's situation?

What does light represent in the novella? With this in mind, what is the significance of the following quotation: 'Scrooge had a very small fire, but the clerk's fire was so very much smaller that it looked like one coal.'

Fred's eyes 'sparkled' and he is all in a 'glow' when he enters. How is Fred positioned to be the opposite of Scrooge?

Two portly gentlemen enter and ask Scrooge for charity for the poor. Scrooge believes that prisons and workhouses are sufficient, and he dismisses them. Outside, it gets colder. A Christmas caroller tries to sing at Scrooge's door, but the old man scares him away. Scrooge closes up the counting-house and tells Cratchit he expects him to work on Christmas day. Cratchit goes home.

For each of the following quotations, consider the following:

- What does the quotation mean?
- What does the quotation suggest?
- What is the significance of the language used?

"If they would rather die," said Scrooge, "they had better do it, and decrease the surplus population."

'Piercing, searching, biting cold.'

'Scrooge took his melancholy dinner in his usual melancholy tavern.'

Scrooge goes through his dreary routine of dinner in a tavern, then goes to his gloomy home. Scrooge sees the dead Marley's face in the knocker of his door until it turns back into a knocker. It gives Scrooge pause, but he resolves not to be frightened. He thinks he sees a locomotive hearse going up the stairs before him. He walks through his rooms to make sure no one is there. After, he warms himself by a small fire. A bell in the room starts to ring, and soon all the other bells in the house do. After some time, the bells stop, and Scrooge hears the cellar-door open. Marley's ghost, transparent and bound in a long chain made of cash-boxes, keys, padlocks, ledgers, deeds, and heavy purses, enters the room. Scrooge claims he does not believe the ghost exists, but soon he admits he does. Marley says his spirit has been wandering since he died as punishment for being consumed with business and not with people while alive. He has come to warn Scrooge and perhaps save him from the same fate. He tells him Three Spirits will come to him over the next three nights. Marley makes incoherent, sorrowful sounds, then leaves. Scrooge looks out the window and sees the sky filled with other chained spirits, some familiar to him, who cry about their inability to connect with others. He goes to sleep.

1. Consider the following images and make notes around them on how they link to Marley's ghost and the message he brings with him for Scrooge.

Written task

Explain how the characters of Scrooge and Marley help Dickens attack the politics of the time which did not recognise the plight of the poor. Use quotations and discuss them.

Stave Two

Scrooge wakes up, and the bell of a neighbourhood church rings from six until twelve, then stops. He wonders if he slept through the day and into another night. He looks out the window to an empty scene. He worries over Marley's ghost and wonders if it was a dream. He remembers the ghost's warning of a visit at one at night, and waits. The hour arrives, a flash of light comes in the room, his bed-curtains are drawn aside, and a small figure appears. The figure introduces itself as the Ghost of Christmas Past. It says it is there for Scrooge's "welfare" and "reclamation."

2. Consider the decluttered description of the Ghost of Christmas Past. Think about how Dickens uses language to present the ghost. Annotate around the description with your ideas.

strange figure

like a child

like an old man

hair white

arms long and muscular

uncommon strength

tunic of purest white

lustrous belt

dress trimmed with summer flowers

from the crown of its head

sprung a bright clear jet of light

belt sparkled and glittered

figure fluctuated in its distinctness

The old man introduces himself as the Ghost of Christmas Past. He says he is there for Scrooge's "welfare" and "reclamation," then puts Scrooge's hand on his heart. They instantly reappear on a wintry country road around Scrooge's childhood home. Scrooge is deeply affected by the memory, and he walks with the Ghost to the town. They see schoolboys, and the Ghost explains that the people they see are shadows of their former selves, and are unaware of him and Scrooge. The boys run out of school and wish merry Christmas to each other. The Ghost reminds Scrooge that one boy, ignored by the others, remains in school alone, and Scrooge weeps. They walk into the dilapidated schoolhouse, where they see the young Scrooge reading alone by a small fire. The older Scrooge cries again, and says he wishes he had given something to the boy carolling at his door last night. The Ghost says they will see another Christmas, and the young Scrooge grows larger as the room becomes dirtier. Scrooge's younger sister, Fan, enters the room and joyfully announces she is bringing him home for Christmas, as their father is much kinder than he used to be. After they eat and drink with the intimidating schoolmaster, they go off. The Ghost reminds Scrooge that his sister died after having had Scrooge's nephew.

3. Answer the following questions in complete sentences.

Scrooge looks upon himself as a schoolboy and describes his past self as a 'forgotten self'. Why do you think Dickens has Scrooge look upon himself in this way?

What does light represent in the novel? With this in mind, what is significant about the follow quotation: 'a lonely boy was reading near a feeble fire.'

Scrooge sees characters like Ali Baba, the Sultan and the Genii as well as Robison Crusoe? What is Scrooge actually remembering and what is the significance of this?

Fan enters and says 'Father is so much kinder than he used to be.' What does this suggest about the relationship between Scrooge and his father?

The Ghost and Scrooge travel to the warehouse of Scrooge's apprenticeship. Fezziwig, an old, jolly man, gives Scrooge and another worker the night off for Christmas Eve. Scrooge and his friend quickly clean up and build a cosy fire. Several more people come in and a party ensues. Scrooge enjoys himself immensely until the party ends, when he remembers he is merely revisiting the scene with the Ghost. Scrooge tells the Ghost that Fezziwig's gift of happiness to his friends far outweighs the money he spent on the party. He mentions he would like to say something to his clerk.

4. For each of the following quotations, consider the following:
   - What does the quotation mean?
   - What does the quotation suggest?
   - What is the significance of the language used?

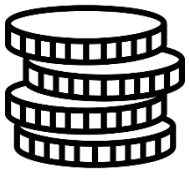
'Fezziwig… called out in a comfortable, oily, rich, fat, jovial voice'

"The happiness he gives, is quite as great as if it cost a fortune."

"I should like to be able to say a word or two to my clerk just now! That's all."

Scrooge now sees an older version of himself in the prime of life. His face shows the first signs of greed as he sits by a crying girl, Belle. She breaks off their romance, reproaching him for replacing his love for her with the pursuit of money. The scene changes and Belle is now the mother of a raucous, affectionate brood of children. Her husband comes home and tells her he saw Scrooge sitting alone in his office. Scrooge begs the Ghost to take him back to his own time, and takes it upon himself to pull the Ghost's cap over its brightly-lit head. The light cannot be obscured, however, and Scrooge eventually falls into his own bed out of exhaustion.

5. Consider the following images and make notes around them on how they link to Belle and the Ghost of Christmas Past.



Explain how the characters of Belle, Fan and Fezziwig help Dickens' purpose of promoting love and family over money and greed. Use quotations and discuss them in your answer.

9 weeks until PPE **5th October – 11th October 2020**

Maths

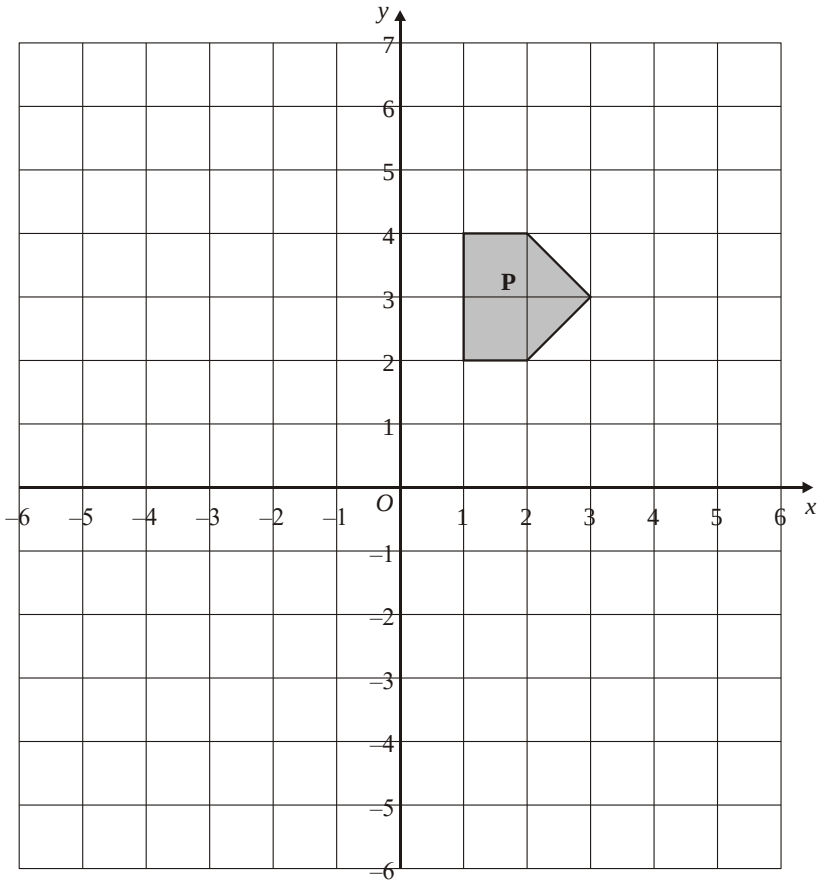
Transformations

Things to remember:

- Reflection – the shape is flipped in a mirror line
- Rotation – the shape is turned a number of degrees, around a centre, clockwise or anti-clockwise
- Translation – the shape is moved by a vector $\begin{pmatrix} x \\ y \end{pmatrix}$
- Enlargement – the shape is made bigger or smaller by a scale factor from a centre.

Questions:

1.



(a) On the grid, rotate the shaded shape **P** one quarter turn anticlockwise about *O.* Label the new shape **Q**.

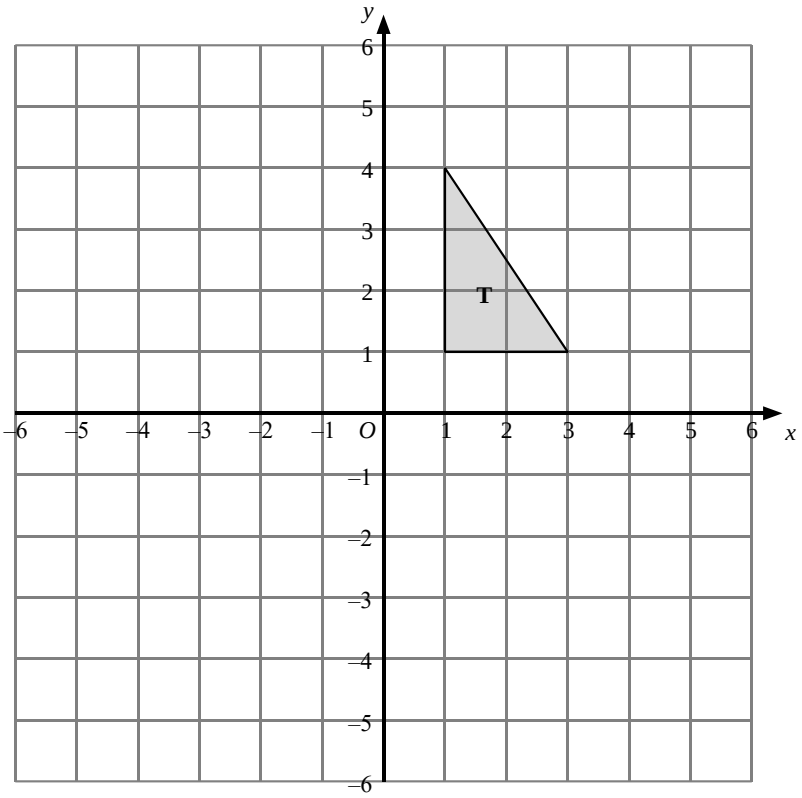
(3)

(b) On the grid, translate the shaded shape **P** by 2 units to the right and 3 units up. Label the new shape **R.**

(1)

(Total 4 marks)

2.



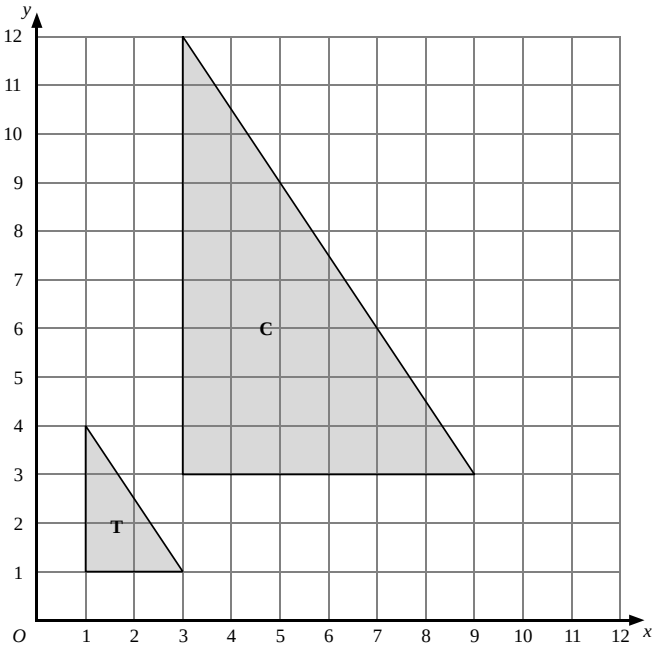
Triangle **T** has been drawn on the grid.

(a) Reflect triangle **T** in the *y*-axis.
Label the new triangle **A**.

(1)

(b) Rotate triangle **T** by a half turn, centre *O*.
Label the new triangle B.

(2)

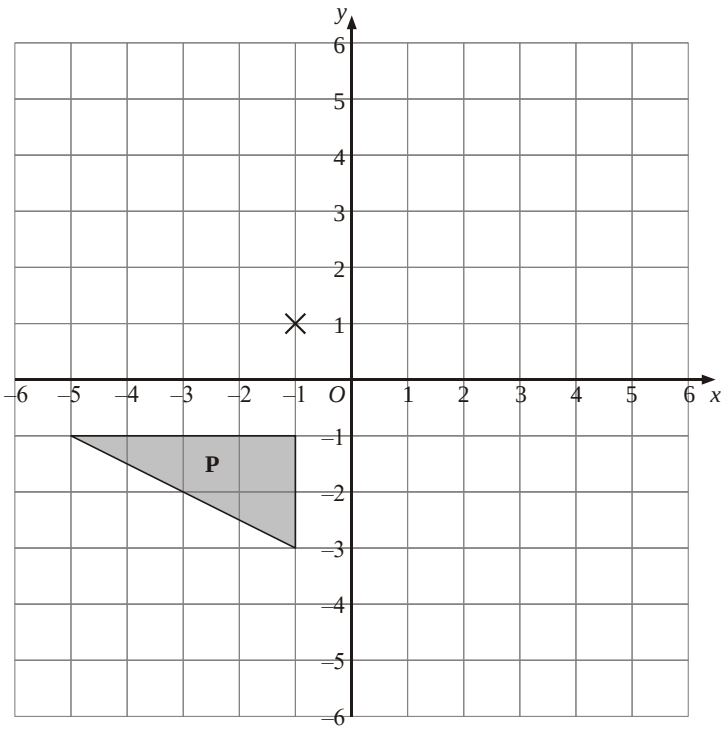


(a) Describe fully the single transformation which maps triangle **T** onto triangle **C**.

.....

(3)
(Total 6 marks)

3.

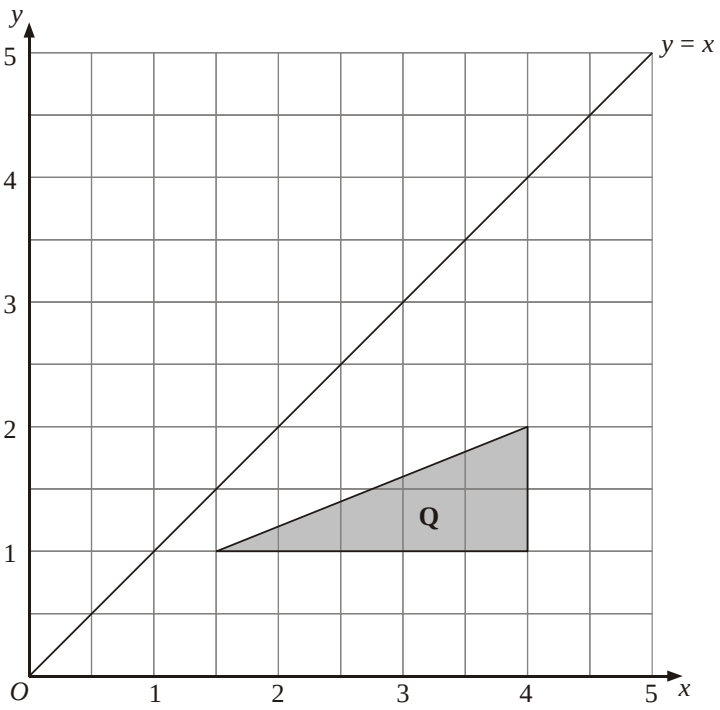


(a) Rotate triangle **P** 180° about the point (–1, 1).
Label the new triangle **A**.

(2)

(b) Translate triangle **P** by the vector $\begin{pmatrix} 6 \\ -1 \end{pmatrix}$.
Label the new triangle **B**.

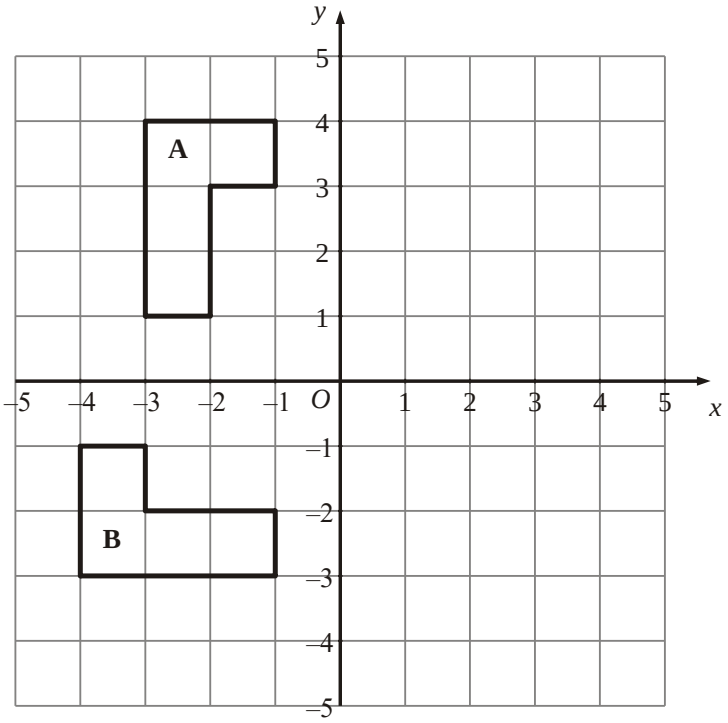
(1)



(c) Reflect triangle **Q** in the line $y = x$.
Label the new triangle **C**.

(2)
(Total 5 marks)

4.



(a) Reflect shape **A** in the *y* axis.

(2)

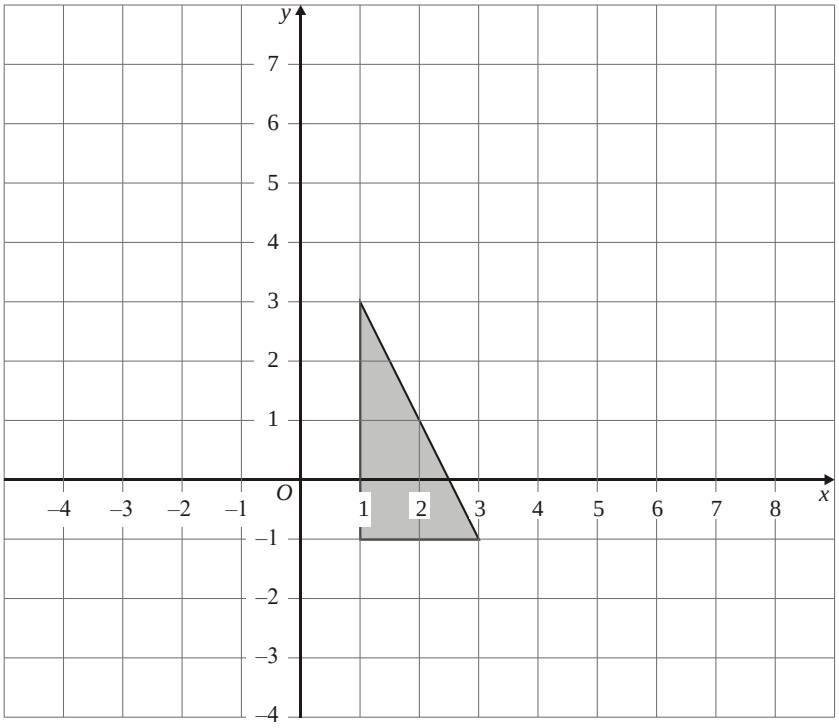
(b) Describe fully the **single** transformation which takes shape **A** to shape **B**.

.....

(3)

(Total 5 marks)

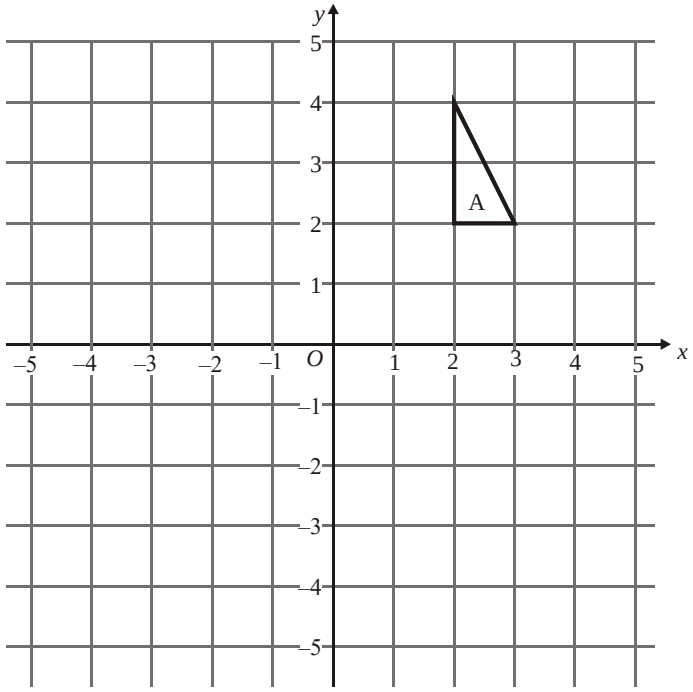
5.



Enlarge the shaded triangle by a scale factor 2, centre 0.

(Total 3 marks)

6.



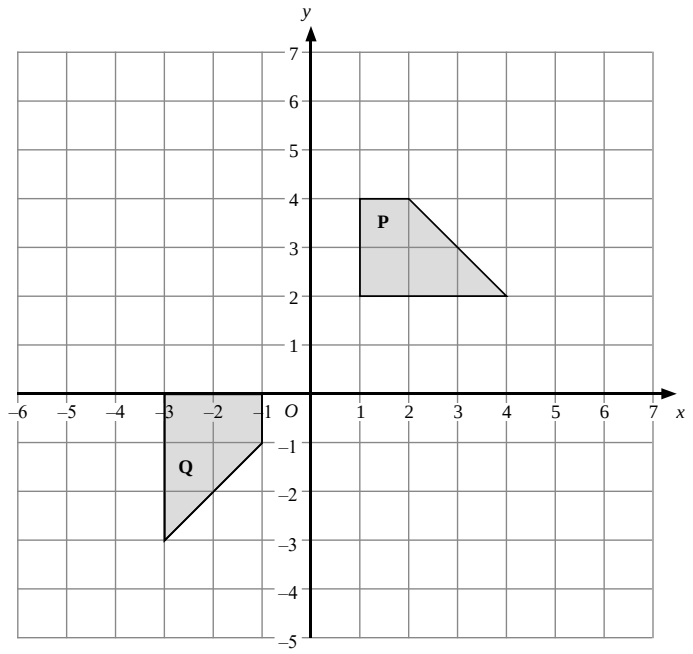
(a) On the grid, rotate triangle **A** 180° about *O*.
Label your new triangle **B**.

(2)

(b) On the grid, enlarge triangle **A** by scale factor ½, centre *O*.
Label your new triangle **C**.

(3)
(Total 5 marks)

7.



Describe fully the single transformation that will map shape **P** onto shape **Q**.

.....

.....

(Total 3 marks)

9 weeks until PPE **5th October – 11th October 2020**

Science

- ***Complete the following table comparing the structure of eukaryotic and prokaryotic cells.***

		Eukaryotic		Prokaryotic
Cell Structure	**Function**	**Animal Cells**	**Plant Cells**	**Bacterial Cells**
Nucleus				
Cell membrane				
Cytoplasm				
Mitochondria				
Ribosome				
Chloroplast				
Permanent vacuole				
Cell wall				
DNA loop				
Plasmid				

- ***Draw and label the following cells:***
    a) ***Plant cell***
    b) ***Animal cell***
    c) ***Prokaryotic (Bacterial) cell***
    d) ***Root hair cell***
    e) ***Nerve cell***
    f) ***Sperm cell***

- ***Complete the table to compare the processes of mitosis and meiosis including when and where they are carried out.***

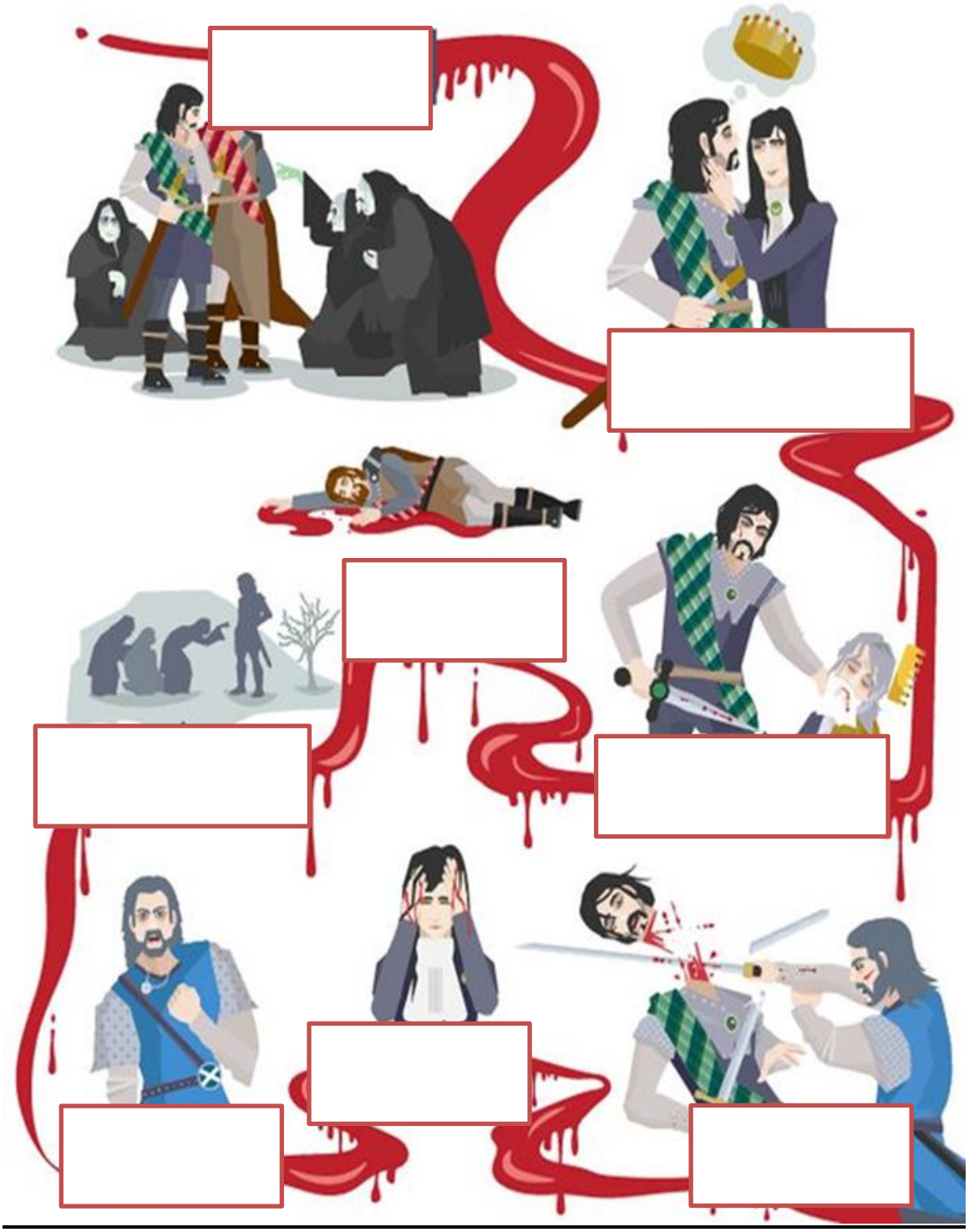
Mitosis	Meiosis

8 weeks until PPE **12th October – 18th October 2020**

English

Macbeth: 'a chain of events'

Task: Write the corresponding key events in each box. Can you also add a quote to go with each event?



Read the following extract from Act 1 Scene 5 of Macbeth and then answer the question that follows.

At this point in the play Lady Macbeth is speaking. She has just received the news that King Duncan will be spending the night at her castle.

The raven himself is hoarse	
That croaks the fatal entrance of Duncan	
Under my battlements. Come, you spirits	
That tend on mortal thoughts, unsex me here,	
And fill me from the crown to the toe top-full	
Of direst cruelty! make thick my blood;	**5**
Stop up the access and passage to remorse,	
That no compunctious visitings of nature	
Shake my fell purpose, nor keep peace between	
The effect and it! Come to my woman's breasts,	
And take my milk for gall, you murdering ministers,	**10**
Wherever in your sightless substances	
You wait on nature's mischief! Come, thick night,	
And pall thee in the dunnest smoke of hell,	
That my keen knife see not the wound it makes,	
Nor heaven peep through the blanket of the dark,	
To cry 'Hold, hold!'	**15**

Q1: Starting with this speech, explain how far you think Shakespeare presents Lady Macbeth as a powerful woman.

Write about:
- how Shakespeare presents Lady Macbeth in this speech
- how Shakespeare presents Lady Macbeth in the play as a whole. [30 marks]

SPAG [4 marks]

Things you might write about:

The connotations of the "raven" and her use of the adjective "fatal" to describe Duncan's entrance to Dunsinane castle. What does it convey about her immediate thoughts and reactions to Macbeth's letter?

Summoning evil spirits. Explain clearly what Lady Macbeth invites the "murdering ministers" to do to her body and why she requests their assistance.

The fact she imagines committing the regicide herself in this soliloquy: she refers to the weapon as "my keen knife". However, she does not later commit the crime herself. What reason does she give for not doing so, in an aside to the audience in Act 2 scene 2, lines 15 – 16? Explain what impressions this private admission conveys about Lady Macbeth's character to the audience.

Think now about Act 3 scene 2, where we first see Lady Macbeth as Queen. In an aside to the audience at the opening of this scene, explain what feelings she privately admits to, now that her ambition to be queen has been fulfilled.

Now think about our final impressions of Lady Macbeth, in Act 5 scene 1. Write about the significance of having "light by her continually" and how this links to her desire to be wrapped in "the dunnest smoke of Hell" when first contemplating Duncan's murder. Explain also the irony of her constantly rubbing her hands, given her comment to Macbeth on the night of Duncan's murder: "A little water clears us of this deed."

KEY WORD VOCABULARY: try to use these words in your response. Check spelling of key terms.

soliloquy ***audience*** **impression** ***initial*** **admission** ***ambitious***

fiendish ***determined*** **callous** ***ironic*** **significant** ***aside***

8 weeks until PPE **12th October – 18th October 2020**

Maths

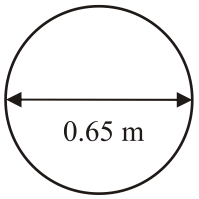
Circles

Things to remember:

- πr² sounds like area to me, when I need the circumference I'll just use πD.
- Read the question carefully and check if you are being asked to find circumference or area and whether they have given you the radius or the diameter.
- Remember the diameter is twice the radius.

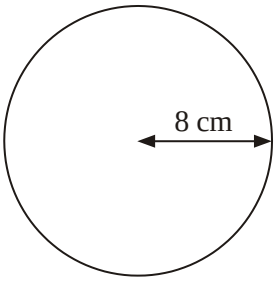
Questions:

1. The diameter of a wheel on Harry's bicycle is 0.65 m.
Calculate the circumference of the wheel.
Give your answer correct to 2 decimal places.
Diagram NOT accurately drawn



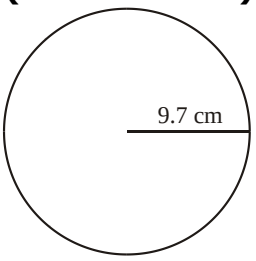
..... m
(Total 2 marks)

2. Diagram NOT accurately drawn
The radius of this circle is 8 cm.
Work out the circumference of the circle.
Give your answer correct to 2 decimal places.



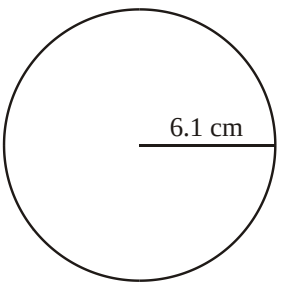
..... cm
(Total 2 marks)

3. Diagram NOT accurately drawn
The radius of the circle is 9.7 cm.
Work out the area of the circle.
Give your answer to 3 significant figures.



..... cm²
(Total 2 marks)

4. A circle has a radius of 6.1 cm.
Work out the area of the circle.



.....
(Total 3 marks)

5. The top of a table is a circle.
The radius of the top of the table is 50 cm.

(a) Work out the area of the top of the table.

.....cm²

(2)

The base of the table is a circle.
The diameter of the base of the table is 40 cm.

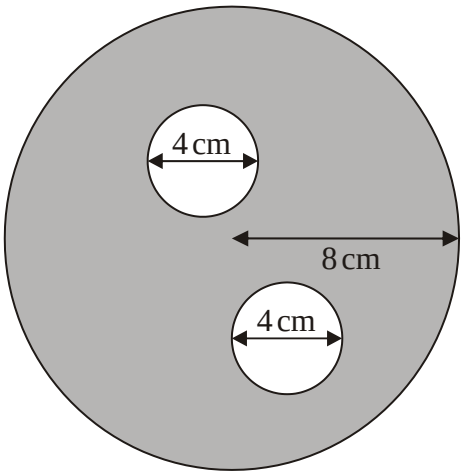
(b) Work out the circumference of the base of the table.

.....cm

(2)

(Total 4 marks)

6. The diagram shows two small circles inside a large circle.
The large circle has a radius of 8 cm.
Each of the two small circles has a diameter of 4 cm.



(a) Write down the radius of each of the small circles.

..... cm

(1)

(b) Work out the area of the region shown shaded in the diagram.
Give your answer correct to one decimal place.

..... cm²

(4)

(Total 5 marks)

8 weeks until PPE **12th October – 18th October 2020**

Science

Key Term	Definition	Diagram
Atom		
Element		
Compound		
Mixture		

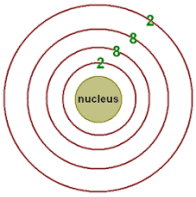
- ***Complete the following table.***

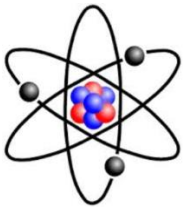
- ***Complete the following table about separating mixtures.***

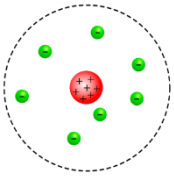
Separation technique	Used to separate (example)	Method / Diagram
Filtering		
Evaporation and crystallisation		
Distillation		

- ***Use the following words and diagrams to produce a timeline to show how the model of the atom was developed (they are not in any order). You could produce a set of flash cards that you then use to quiz yourself and practice putting in the correct order.***

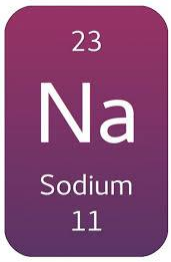
James Chadwick	Nuclear Model	Neutrons	Mass	Alpha particle
John Dalton	Positive	Protons	Space	Scattering
Neils Bohr	Plum pudding	Electrons	Energy Levels	Gold Foil
Ernest Rutherford	JJ Thompson	Negative	Nucleus	Energy Levels







- ***Label the following symbol from the periodic table with as much information as you can.***



- ***Complete the following table***

Element	Symbol	Number of Electrons	Electron Structure	Group	Period

What is the pattern between electron structure and group?

_____

_____

_____

_____

_____

_____

What is the pattern between electron structure and period?

_____

_____

_____

_____

_____

_____

7 weeks until PPE **19th October – 25th October 2020**

English

Stave Three

Scrooge awakes when the bell strikes one, and is immediately prepared for the second Ghost's arrival. After a while, he sees a light come from the adjacent room. A strange voice tells him to enter, and when he does, he sees his room has been decked out with Christmas decorations and a feast. A giant ghost introduces himself as the Ghost of Christmas Present and tells Scrooge to touch his robe. When he does, they are transported to the streets on Christmas morning where, despite the gloomy weather, people frolic joyously in the snow as shopkeepers pass out delicious food. The people carry their dinners off with them and occasionally bump each other accidentally and argue. When the Ghost sprinkles a few drops of water from his torch on them, however, peace is restored.

1. Consider the decluttered description of the Ghost of Christmas Present. Think about how Dickens uses language to present the ghost. Annotate around the description with your ideas.

a throne

a jolly giant

glorious to see

a glowing torch

one simple green robe

on its head a holly wreath

genial face

sparkling eye

its open hand, its cheery voice

an antique scabbard

no sword

the ancient sheath eaten with rust

The Ghost transports Scrooge to the modest house of Bob Cratchit. His family, dressed in its best clothing, waits for Bob to return from church before they eat dinner. He comes in with his small, crippled son, Tiny Tim. They discuss Tiny Tim's good heart and his growing strength, then have a wonderful dinner. When Scrooge asks, the Ghost informs him that, unless the future is altered, Tiny Tim will die. At the dinner, Mrs. Cratchit curses Scrooge, but her husband reminds her that it is Christmas.

2. Answer the following questions in complete sentences.

Mrs Cratchit is described as being 'brave in ribbons'. What does this suggest about her way of life and character?

The younger Cratchits are described as 'ubiquitous' and even the potatoes are personified when they 'knocked loudly at the saucepan-lid to be let out and peeled.' Why are the Cratchits and their household described with so much energy?

How are Peter and Martha part of a generation of lost youth? How does Dickens use their characters to criticise society?

Why is Tiny Tim a part of the novel? What is the purpose of his character?

There was nothing of high mark in this. They were not a handsome family; they were not well dressed; their shoes were far from being water-proof; their clothes were scanty; and Peter might have known, and very likely did, the inside of a pawnbroker's. But, they were happy, grateful, pleased with one another, and contented with the time; and when they faded, and looked happier yet in the bright sprinklings of the Spirit's torch at parting, Scrooge had his eye upon them, and especially on Tiny Tim, until the last.

What do we learn about the Cratchits, their purpose and their effect on Scrooge from this?

The Ghost brings Scrooge to a number of other happy Christmas dinners in the city, as well as to celebrations in a miner's house, a lighthouse, and on a ship. Scrooge is then taken to his nephew Fred's house, where Fred tells his pretty wife and his sisters he feels sorry for Scrooge, since his miserly, hateful nature deprives him of pleasure in life. Scrooge's niece plays a tune on the harp, which softens Scrooge's heart. Scrooge even joins in for some of their games, though they are not aware of his ghostly presence.

3. Consider the following images and make notes around them that explain why Scrooge is taken to see these places by the ghost. What is Scrooge learning from seeing these places?

The Ghost pulls Scrooge away from the games to a number of other Christmas scenes, all joyful despite the often meagre environments. As they travel, the Ghost ages and says his life is short; he will die at midnight. A boy and girl, looking ragged, unhealthy, and impoverished, crawl out from his robes. The Ghost tells Scrooge they are named Ignorance and Want. He tells him to beware of them, especially the boy, on whose brow is written doom. He encourages Scrooge to deny Ignorance in himself and others. When Scrooge asks if the children have no refuge, the Ghost answers with Scrooge's previous words, "'Are there no prisons? Are there no workhouses?'" The bell strikes twelve, the Ghost disappears, and Scrooge sees a new phantom, solemn and robed, approach.

4. For each of the following quotations, consider the following:
   - What does the quotation mean?
   - What does the quotation suggest?
   - What is the significance of the language used?

'It brought two children; wretched, abject, frightful, hideous, miserable.'

'They were a boy and a girl. Yellow, meagre, ragged, scowling, wolfish'

Explain why Dickens decides to personify the qualities of Ignorance and Want. What can Scrooge learn from seeing them? Use quotations in your answer and discuss them.

7 weeks until PPE **19th October – 25th October 2020**

Maths

Area Problems

Things to remember:

- Area of a rectangle = base x height
- Area of a triangle = ½ x base x height
- Area of a parallelogram = base x height
- Area of a trapezium = ½ (a + b) h, where a and b are the parallel sides and h is the height
- The perimeter is the distance around the edge of the shape

Questions:

***1.** The diagram shows the floor plan of Mary's conservatory.

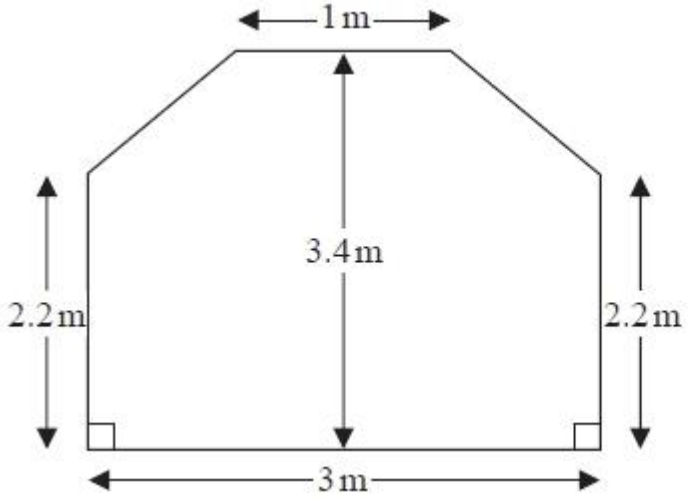


Diagram **NOT** accurately drawn

Mary is going to cover the floor with tiles.
The tiles are sold in packs.
One pack of tiles will cover $2m^2$
A pack of tiles normally costs £24.80
Mary gets a discount of 25% off the cost of the tiles.
Mary has £100
Does Mary have enough money to buy all the tiles she needs?
You must show all your working.

(Total for question = 5 marks)

***2.** Mr Weaver's garden is in the shape of a rectangle.
In the garden there is a patio in the shape of a rectangle and two ponds in the shape of circles with diameter 3.8 m.
The rest of the garden is grass.

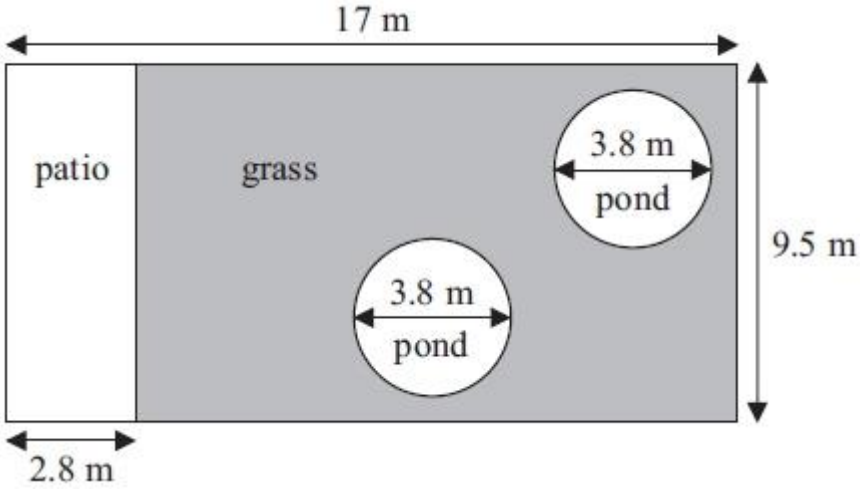


Diagram **NOT** accurately drawn

Mr Weaver is going to spread fertiliser over all the grass.
One box of fertiliser will cover 25 m^2 of grass.
How many boxes of fertiliser does Mr Weaver need?
You must show your working.

(Total for Question is 5 marks)

*3. The diagram shows the plan of Mrs Phillips' living room.

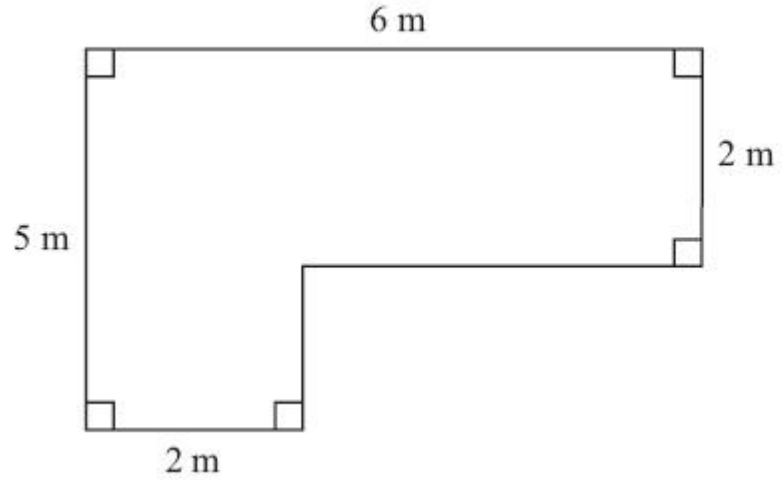


Diagram **NOT** accurately drawn

Mrs Phillips is going to cover the floor with floor boards.
One pack of floor boards will cover 2.5 m^2.
How many packs of floor boards does she need?
You must show your working.

(Total for Question is 4 marks)

4. A piece of card is in the shape of a trapezium.

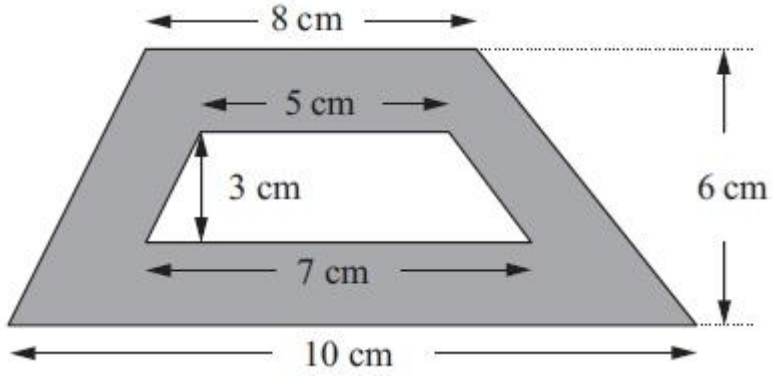


Diagram **NOT** accurately drawn

A hole is cut in the card.
The hole is in the shape of a trapezium.
Work out the area of the shaded region.

. . . . . cm^2

(Total for Question is 3 marks)

5. Mrs Kunal's garden is in the shape of a rectangle.
Part of the garden is a patio in the shape of a triangle.
The rest of the garden is grass.

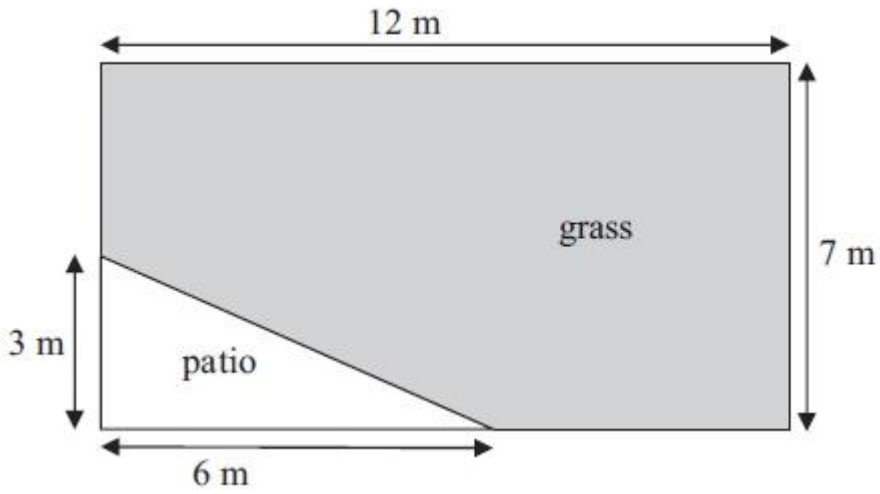


Diagram **NOT** accurately drawn

Mrs Kunal wants to spread fertiliser over all her grass.
One box of fertiliser is enough for 32 m^2 of grass.
How many boxes of fertiliser will she need?
You must show your working.

.....

(Total for Question is 4 marks)

***6.** The diagram shows a flower bed in the shape of a circle.

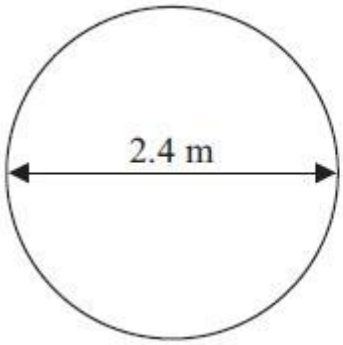


Diagram **NOT** accurately drawn

The flower bed has a diameter of 2.4 m.
Sue is going to put a plastic strip around the edge of the flower bed.
The plastic strip is sold in 2 metre rolls.
How many rolls of plastic strip does Sue need to buy?
You must show all your working.

(Total for Question is 4 marks)

7 weeks until PPE **19th October – 25th October 2020**

Science

- ***Copy the following equations into the blank column.***

Kinetic energy = 0.5 x mass x $(\text{speed})^2$	
Gravitational potential energy = mass x gravitational field strength (g) x height	
Power = $\frac{\text{Energy transferred}}{\text{time}}$	
Power = $\frac{\text{Work done}}{\text{time}}$	
Efficiency = $\frac{\text{Useful output energy transfer}}{\text{Total input energy transfer}}$	
Efficiency = $\frac{\text{Useful power output}}{\text{Total power input}}$	
Charge flow = current x time	
Potential difference = current x resistance	
Power = potential difference x current	
Power = $(\text{current})^2$ x resistance	
Energy transferred = power x time	
Energy transferred = charge flow x potential difference	
Density = $\frac{\text{mass}}{\text{volume}}$	

- ***Complete the blank spaces in the table below. Complete the first column then cover it while attempting the second column.***

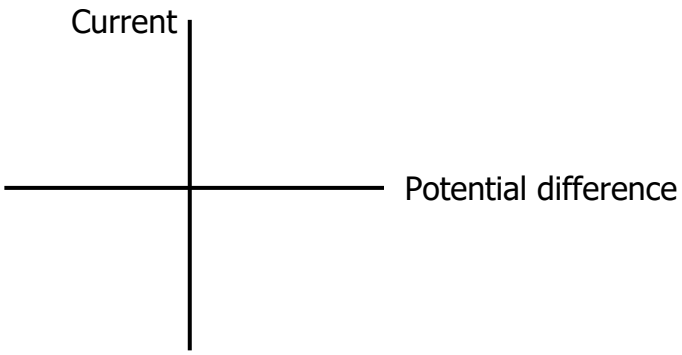
Kinetic energy = 0.5 x _____ x (_____)^2	Kinetic energy =
Gravitational potential energy = _____ x gravitational field strength (g) x _____	Gravitational potential energy =
Power = $\frac{\text{Energy transferred}}{\text{\_\_\_\_\_}}$	Power = _____
Power = _____ / time	_____ = $\frac{\text{Work done}}{\text{\_\_\_\_\_}}$
Efficiency = $\frac{\text{Useful output energy transfer}}{\text{\_\_\_\_\_}}$	Efficiency = _____
_____ : $\frac{\text{Useful power output}}{\text{Total power input}}$	_____ : $\frac{\text{Useful power output}}{\text{\_\_\_\_\_}}$
Charge flow = current x_____	Charge flow =
Potential difference = _____ x resistance	Potential difference =
Power = potential difference x _____	Power =
Power = (_____)^2 x resistance	= (current)^2 x
Energy transferred = _____ x time	Energy transferred =
Energy transferred = _____ x potential difference	_____ = charge flow x
Density = $\frac{\text{mass}}{\text{\_\_\_\_\_}}$	Density = _____

- ***State the units for each quantity in the following equations.***

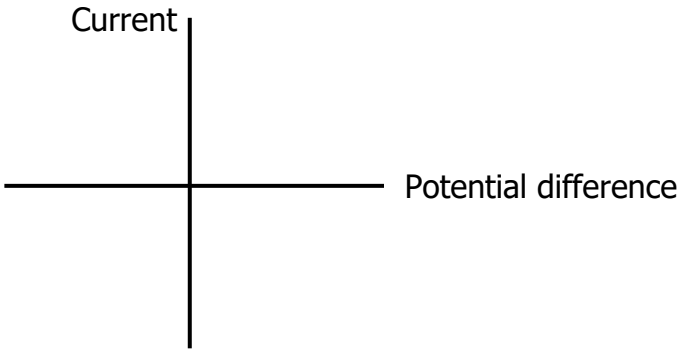
Equation	**Units**
$E_k = ½\ m\ v^2$	E_k = m = v =
$E_p = m\ g\ h$	E_p = m = g = h =
$P = \frac{E}{t}$	P = E = t =
$P = \frac{W}{t}$	P = W = t =
$Q = I\ t$	Q = I = t =
$V = I\ R$	V = I = R =
$P = V\ I$	P = V = I =
$P = I^2\ R$	P = I = R =
$E = P\ t$	E = P = t =
$E = Q\ V$	E = Q = V =
$p = \frac{m}{v}$	p = m = v =

- ***Draw the IV characteristics graphs for the following components.***

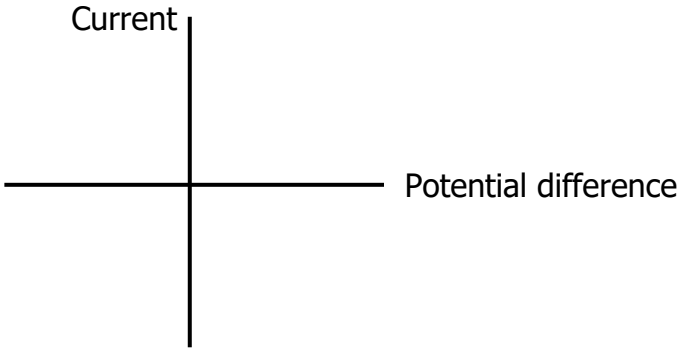
Diode



Filament Lamp



Fixed Resistor



6 weeks until PPE **26th October – 1st November 2020**

English The rise and fall of Macbeth

Time	Quotation			
Act 1 Scene 2	'For brave Macbeth--well he deserves that name'	'Disdaining fortune, with his brandished steel/ Which smoked with bloody execution,'	'unseam'd him from the nave til the chaps'	'No more that thane of Cawdor shall deceive…go pronounce his present death/And with his former title greet Macbeth.'
Act 1 scene 7	**'**He's here in double trust…as his host, Who should against his murderer shut the door/Not bear the knife myself.'	**'**tears shall drown the wind. I have no spur/To prick the sides of my intent, but only/Vaulting ambition.'	**'**We will proceed no further in this business: He hath honour'd me of late'	**'**If we should fail?'
Act 2, Scene 1	'Is this a dagger which I see before me/ the handle toward my hand? Come, let me clutch thee.'	'fatal vision…art thou but A dagger of the mind, a false creation/Proceeding from the heat-oppressed brain?'	'On thy blade and dudgeon gouts of blood/Which was not so before. There's no such thing/It is the bloody business which informs/Thus to mine eyes.'	'I go, and it is done; the bell invites me. /Hear it not, Duncan; for it is a knell/That summons thee to heaven or to hell.'
Act 2 , Scene 2	'I have done the deed. …This is a sorry sight.' *Looking on his hands*	**'** I'll go no more/I am afraid to think what I have done/ Look on't again I dare not.'	'Will all great Neptune's ocean wash this blood/Clean from my hand?'	'Wake Duncan with thy knocking! I would thou couldst!'
Act 3, Scene 1	'our bloody cousins are bestow'd In England and in Ireland, not confessing Their cruel parricide, filling their hearers With strange invention'	'To be thus is nothing; But to be safely thus.--Our fears in Banquo/Stick deep'	'Upon my head they placed a fruitless crown' 'Both of you/Know Banquo was your enemy.'	'It is concluded. Banquo, thy soul's flight, If it find heaven, must find it out to-night.'
Act 3, Scene 2	**'**How now, my lord! why do you keep alone,' (Lady Macbeth)	'O, full of scorpions is my mind, dear wife! Thou know'st that Banquo, and his Fleance, lives.'	**'**better be with the dead…Than on the torture of the mind to lie In restless ecstasy.'	'Be innocent of the knowledge, dearest chuck, Till thou applaud the deed.'
Act 3, Scene 4	'You know your own degrees; sit down: at first/And last the hearty welcome.'	'Sit, worthy friends: my lord is often thus,/And hath been from his youth: pray you, keep seat' (Lady Macbeth)	**'**Hence, horrible shadow! Unreal mockery, hence!'	'I pray you, speak not; he grows worse and worse… Stand not upon the order of your going/ But go at once.' (Lady Macbeth)
Act 4, Scene 1	'By the pricking of my thumbs, Something wicked this way comes.' (second witch)	'How now, you secret, black, and midnight hags! What is't you do?'	'Then live, Macduff: what need I fear of thee?'	The castle of Macduff I will surprise; Seize upon Fife; give to the edge o' the sword His wife, his babes, and all unfortunate souls

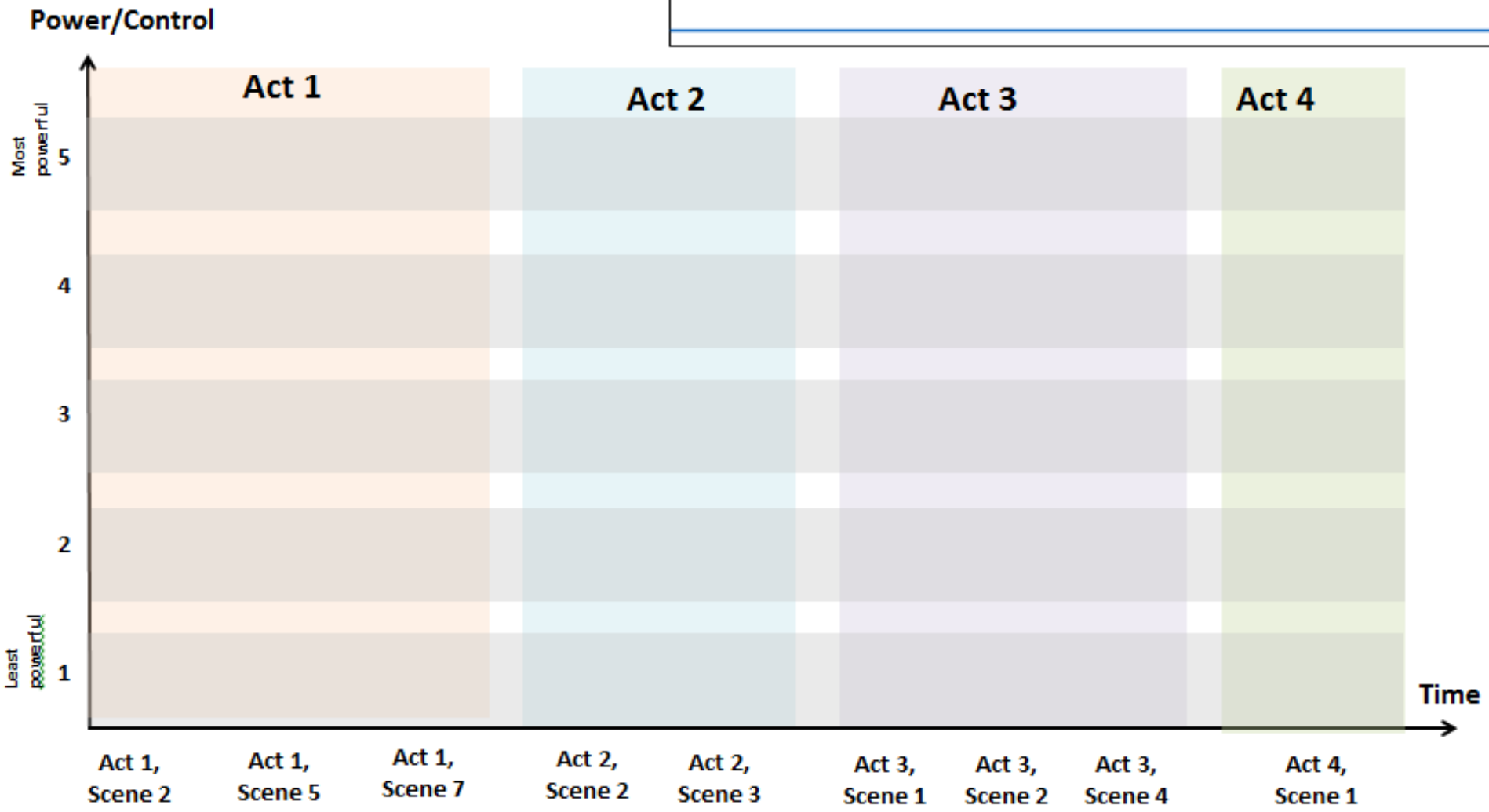
Time	Quotation	Adjective to describe Macbeth	Power rating and reason why
Act 1, Scene 2			
Act 1, Scene 5			
Act 1, Scene 7			
Act 2, Scene 1			
Act 2, Scene 2			
Act 3, Scene 1			
Act 3, Scene 2			
Act 3, Scene 4			
Act 4, Scene 1			

Remember: The play 'Macbeth' is all about the rise and fall of characters and whether fate can be controlled. Shakespeare uses the characters of Macbeth and Lady Macbeth as examples of what happens when ambition goes too far.

Task: Plot a graph for the rise and fall of Macbeth and answer the questions.

1) **What do you notice about Macbeth's power/control throughout the play?**

2) **In your opinion, is he a tragic victim or a villain? Explain why.**



6 weeks until PPE **26th October – 1st November 2020**

Maths

Volume and Surface Area of Prisms

Things to remember:

- Volume of a prism = area of cross section x length
- The surface area is the area of the surface (calculate the area of each face then add together)

Questions:

1. The diagram shows a prism.

All the corners are right angles.

Work out the volume of the prism.

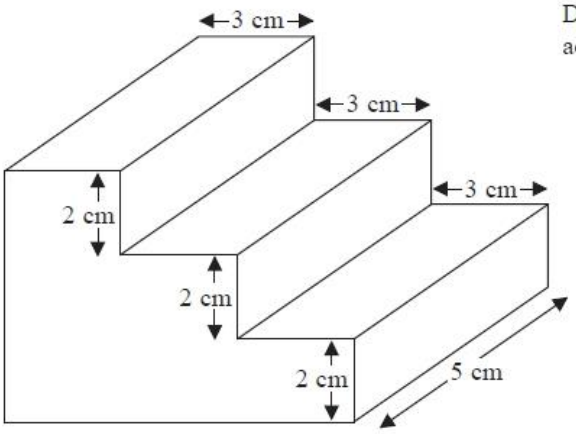
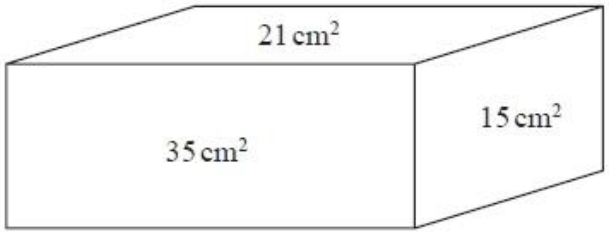


Diagram NOT accurately drawn

.....cm^3

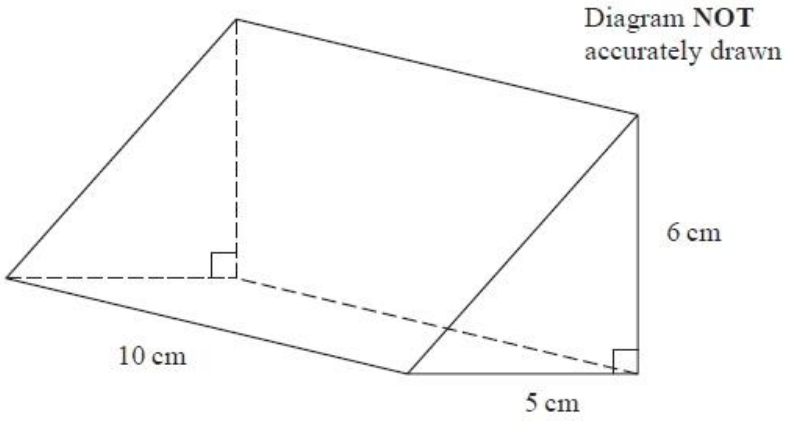
(Total for question = 3 marks)

2. The diagram shows the area of each of three faces of a cuboid.
Diagram **NOT** accurately drawn
The length of each edge of the cuboid is a whole number of centimetres.
Work out the volume of the cuboid.



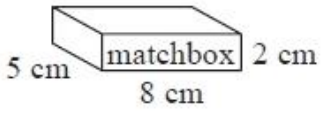
.....cm³
(Total for question = 4 marks)

3. The diagram shows a triangular prism.
Work out the volume of the prism.



.....
(Total for question = 3 marks)

4. A matchbox is 5 cm by 8 cm by 2 cm.
A carton is 20 cm by 40 cm by 20 cm.
The carton is completely filled with matchboxes.



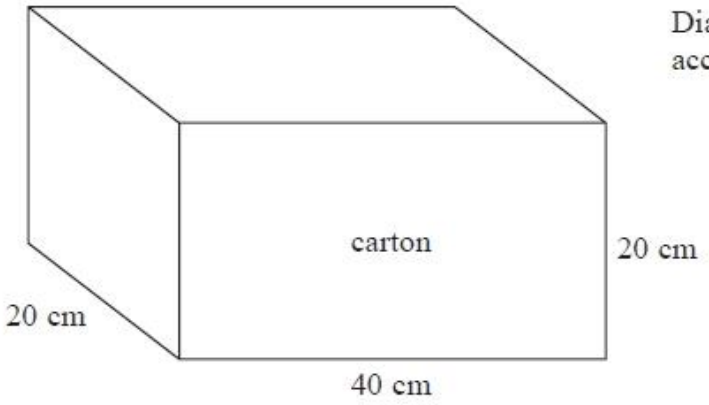
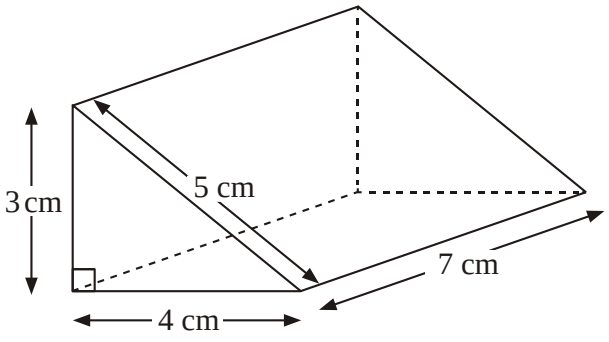


Diagram **NOT** accurately drawn

Work out the number of matchboxes in the carton.

.....
(Total for Question is 3 marks)

5. Diagram **NOT** accurately drawn
Work out the total surface area of the triangular prism.



..... cm^2
(Total 3 marks)

6. The diagram shows a prism.

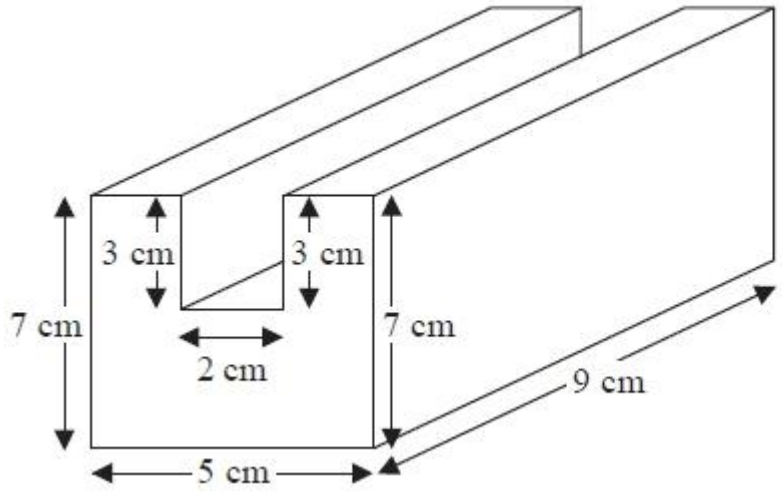


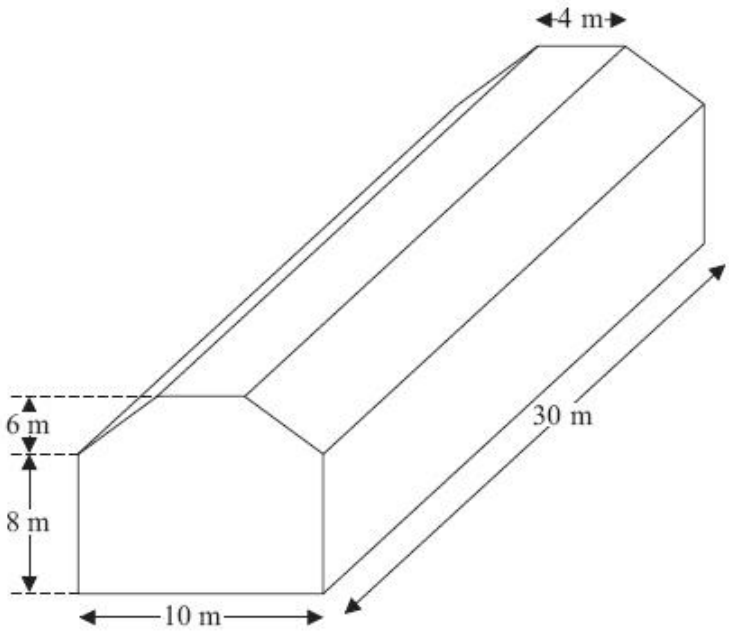
Diagram **NOT** accurately drawn

All the corners are right angles.
Work out the volume of the prism.

.....cm^3

(Total for question = 4 marks)

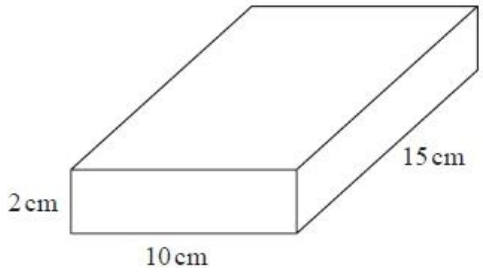
7. Diagram **NOT** accurately drawn
The diagram represents a shed.
The shed is in the shape of a prism.
The cross section of the prism is a hexagon.
The hexagon has one line of symmetry.
The walls of the shed are vertical.
Calculate the volume of the shed.



.....m³

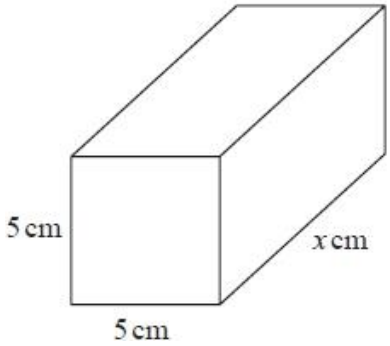
(Total for Question is 4 marks)

8. Jane makes cheese.
The cheese is in the shape of a cuboid.



Jane is going to make a new cheese.
The new cheese will also be in the shape of a cuboid.
The cross section of the cuboid will be a 5cm by 5cm square.

Jane wants the new cuboid to have the same volume as the 2cm by 10cm by 15cm cuboid.
Work out the value of x.



..... cm

(Total for question = 3 marks)

6 weeks until PPE **26th October – 1st November 2020**

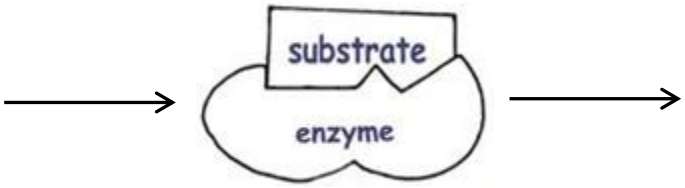
Science

The lock and key model can be used to explain how enzymes work.

- ***Draw a set of 3 labelled diagrams to explain the lock and key model. Use the key words below to help with the labelling.***

Enzyme Substrate Active Site

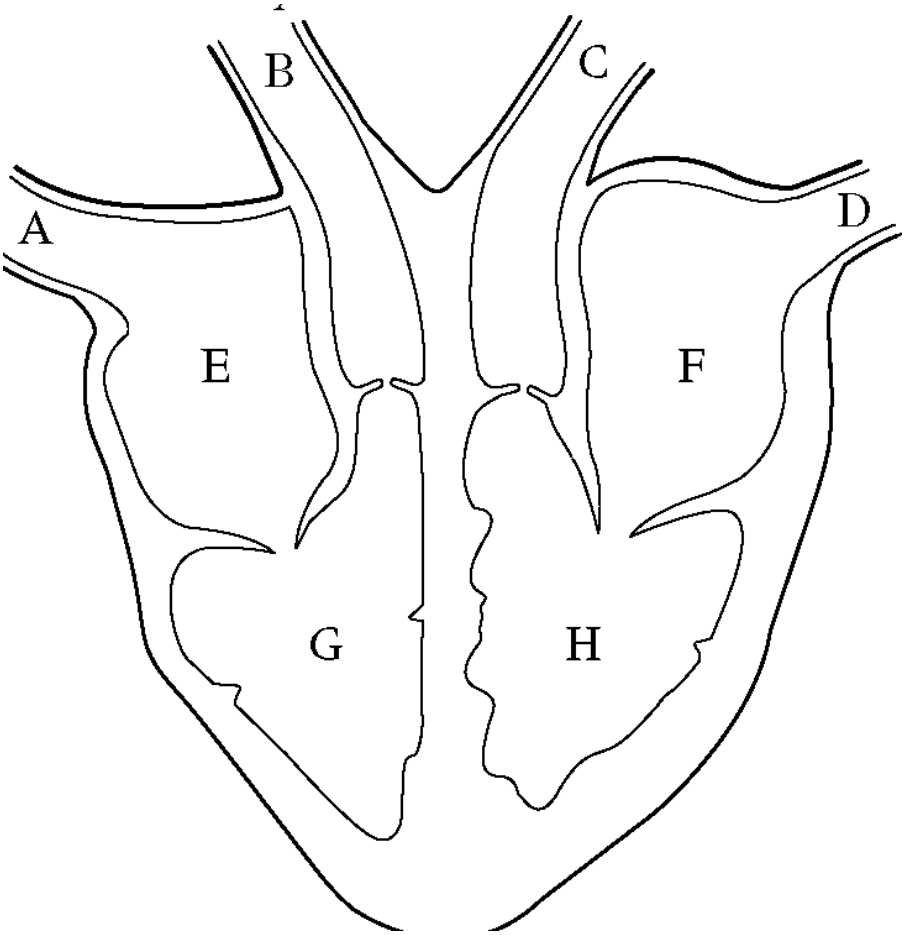
Complex Products



- ***Complete the table describing the function of human digestive enzymes.***

Enzyme	Function (breaks down…)	Sites of production	Sites of action
Protease			
Lipase			
Amylase			

- ***Label the diagram of the heart. Use the labels in the box to help you if you need them.***



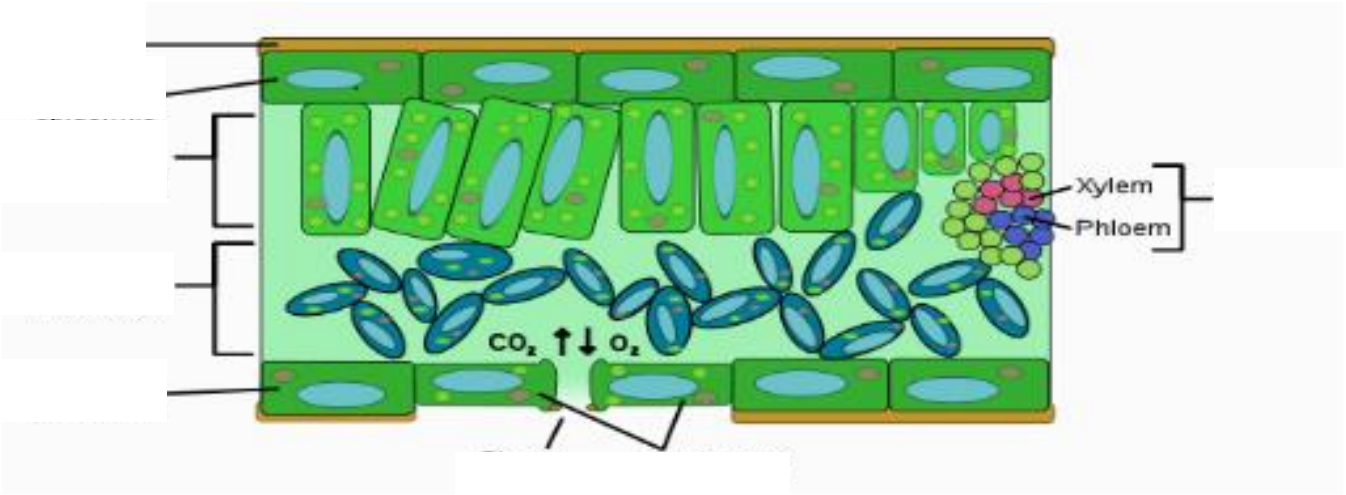
Left ventricle	Vena cava	Right ventricle
Aorta	Left atria	Pulmonary vein
Right atria	Pulmonary artery	

- ***Draw and label a diagram of each of the three blood vessels:***
  - ***Artery***
  - ***Vein***
  - ***Capillary***

- ***Complete the table to describe the function and adaptations of each of the blood vessels.***

Blood Vessel	Purpose	Adaptations
Artery		
Vein		
Capillary		

- ***Add labels to the diagram showing the structure of a leaf.***



- **Complete the table to describe the function of each part of the leaf.**

	Function
Epidermis	
Stoma	
Guard cell	
Palisade mesophyll	
Xylem	
Phloem	
Spongy mesophyll	

5 weeks until PPE **2nd November - 8th November 2020**

English

Stave Four

The Ghost of Christmas Yet To Come solemnly approaches Scrooge in its black garment. It responds to Scrooge's questions with silence and motions for him to follow. They instantly appear in the city and listen in on some businessmen who casually and jokingly discuss someone's death. Scrooge wonders why the Ghost is showing him these conversations and what bearing they have on his future self. However, he does not see himself among the crowds.

1. Consider the decluttered description of the Ghost of Christmas Yet to Come. Think about how Dickens uses language to present the ghost. Annotate around the description with your ideas.

Phantom

slowly, gravely, silently approached

scatter gloom and mystery

shrouded

deep black garment

concealed head, face, form

tall

stately

mysterious presence

silent shape

spectral hand

one great heap of black

Scrooge and the Ghost travel through a poor, run-down part of town. In a shop, several people divvy up some possessions they have plundered from a man who has recently died. Scrooge tells the Ghost that he sees his life might turn out like the dead man's. The scene changes and Scrooge is at the plundered bed of the corpse. Scrooge cannot bring himself to raise the veil of the dead man and see his face. Scrooge asks the Ghost to show him someone who has been emotionally affected by the man's death.

2. Answer the following questions in complete sentences.

Consider the following passage:

> They left the busy scene, and went into an obscure part of the town, where Scrooge had never penetrated before, although he recognised its situation, and its bad repute. The ways were foul and narrow; the shops and houses wretched; the people half-naked, drunken, slipshod, ugly. Alleys and archways, like so many cesspools, disgorged their offenses of smell, and dirt, and life, upon the straggling streets; and the whole quarter reeked with crime, with filth, and misery.

What do we learn about how some of the poor live from this passage? Consider the language Dickens uses in your answer.

Which of Scrooge's possessions are being sold to Old Joe? Why do you think Mrs Dilber and the others have stolen Scrooge's possessions?

Why does Scrooge need to see someone who has been emotionally affected by the unidentified man's death? How does this show he has changed?

They are transported to the house of a young couple, who rejoices since their merciless creditor has died and they are not ruined from debt. Scrooge asks the host to show him some tenderness connected with a death. In the Cratchit home, Bob mourns for Tiny Tim, who has recently died. He tells the family about the kindness of Scrooge's nephew, Fred, and soon feels better when he discusses Tiny Tim's lasting memory.

3. For each of the following quotations, consider the following:
   - What does the quotation mean?
   - What does the quotation suggest?
   - What is the significance of the language used?

'It was a happier house for this man's death. The only emotion that the Ghost could show him, caused by the event, was one of pleasure.'

'Quiet. Very quiet. The noisy little Cratchits were as still as statues in one corner.'

"My little, little child!" cried Bob. "My little child!"

Scrooge asks the Ghost who the dead man they saw was, but the Ghost only brings him to Scrooge's office. However, someone new has taken over the office. The Ghost points Scrooge toward a graveyard and to a specific grave. Before Scrooge looks at it, he asks the Ghost if these are the shadows of things that "Will" be or "May" be. Scrooge believes they are the shadows of what "May" be, but the Ghost says nothing. Scrooge sees his own name on the tombstone, and realizes he was the dead man from before. Scrooge vows to honour Christmas in his heart and live by the lessons of the past, present, and future, such that he may alter his life. The Ghost shrinks and collapses into a bedpost.

4. Consider the following images and make notes around them on how they link to Scrooge's actions at the end of Stave Four and why he acts in this way.

Explain how Dickens uses this chapter to explore what could possibly happen if society does not change its ways and the poor are not saved from their suffering.

5 weeks until PPE **2nd November – 8th November 2020**

Maths

Speed, Distance and Time

Things to remember:

- There are 60 seconds in a minute and 60 minutes in an hour.
- 5 miles = 8 km

Questions:

1. The distance from Fulbeck to Ganby is 10 miles.
The distance from Ganby to Horton is 18 miles.

Raksha is going to drive from Fulbeck to Ganby.
Then she will drive from Ganby to Horton.
Raksha leaves Fulbeck at 10 00
She drives from Fulbeck to Ganby at an average speed of 40mph.
Raksha wants to get to Horton at 10 35
Work out the average speed Raksha must drive at from Ganby to Horton.

..... mph
(Total for question = 3 marks)

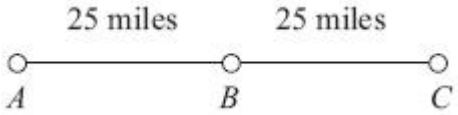
2. A London airport is 200 miles from Manchester airport.
A plane leaves Manchester airport at 10 am to fly to the London airport.
The plane flies at an average speed of 120 mph.
What time does the plane arrive at the London airport?

.....
(Total for question = 4 marks)

***3.** The world speed record for a train is 360 mph.
It takes Malcolm 6 seconds to drive a train 1 kilometre.
Has the train broken the world speed record?
Use 5 miles = 8 km.

(Total for question = 5 marks)

4. *A*, *B* and *C* are 3 service stations on a motorway.
AB = 25 miles and *BC* = 25 miles



Aysha drives along the motorway from *A* to *C.*
Aysha drives at an average speed of 50 mph from *A* to *B*.
She drives at an average speed of 60 mph from *B* to *C*.
Work out the difference in the time Aysha takes to drive from *A* to *B* and the time Aysha takes to drive from *B* to *C*.

Give your answer in minutes.

..... minutes
(Total for Question is 3 marks)

5. Peter goes for a walk.
He walks 15 miles in 6 hours.

(a) Work out Peter's average speed.
Give your answer in miles per hour.

..... mph
(2)

5 miles = 8 km.
Sunita says that Peter walked more than 20 km.

*(b) Is Sunita right?
You must show all your working.

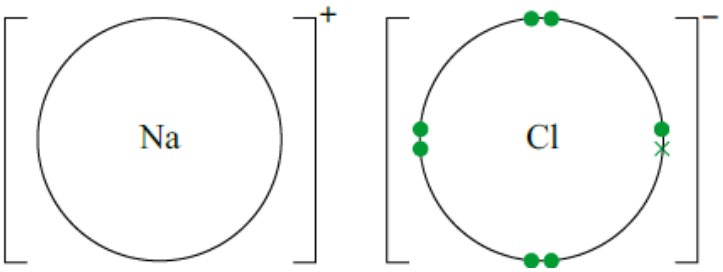
(2)
(Total for Question is 4 marks)

5 weeks until PPE **2nd November – 8th November 2020**

Science

Ionic compounds form when one atom donates electrons to another atom forming ions.

e.g sodium donates one electron to chlorine to form sodium chloride.



- ***Use dot-and-cross diagrams to show how the following ionic compounds form:***

a) lithium chloride

b) sodium fluoride

c) magnesium chloride

d) magnesium oxide

e) sodium oxide

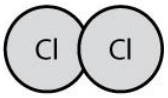
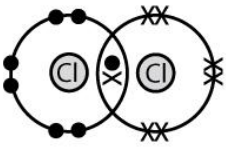
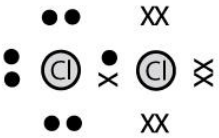
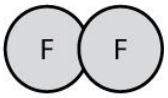
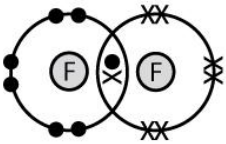
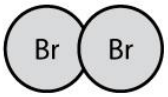
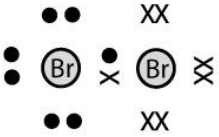
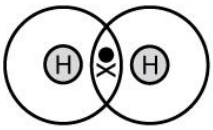
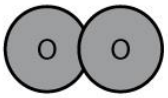
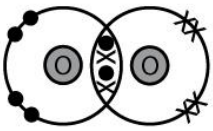
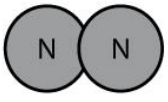
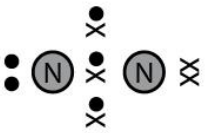
f) lithium oxide

g) potassium chloride

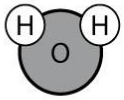
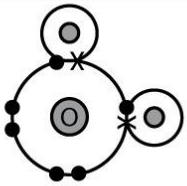
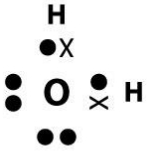
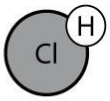
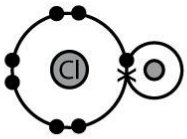
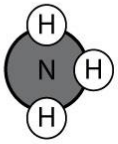
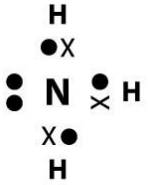
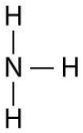
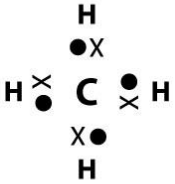
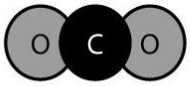
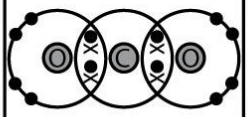
h) potassium oxide

Covalent bonds form when atoms share electrons to fill their outer electron shell.

- ***Complete the missing sections in the table to show covalent bonding in elements.***

bubble model	full outer shell 'dot and cross'	simplified 'dot and cross'	structural formula	chemical formula
			Cl-Cl	Cl_2
			F-F	
				Br_2
			H-H	
				
				N_2

- ***Complete the missing sections in the table to show covalent bonding in compounds.***

bubble model	full outer shell 'dot and cross'	simplified 'dot and cross'	structural formula	chemical formula
				H_2O
				HCl
				
				CH_4
			O=C=O	

- ***Complete the following table to describe and explain the properties of different materials.***

Material	Property	Reason
Ionic compounds	High melting point	
	Do not conduct electricity when solid	
	Conduct electricity when molten or dissolved in water	
Simple covalent molecules	Low melting / boiling point	
	Do not conduct electricity	
Graphite	Conducts electricity	
	Soft and slippery	
Diamond	High melting point	
	Doesn't conduct electricity	
	Very hard	
Polymers	Solid at room temperature	
Metals	Conduct electricity	
	Malleable	
	Conduct heat	
	High melting point	
Alloys	Harder than metals	

4 weeks until PPE **9th November – 15th November 2020**

English

Macbeth : Read the following extract from Act 1 Scene 7 of Macbeth and then answer the question that follows.

ACT I SCENE VII *The same. A room in Macbeth's castle*.

Hautboys and torches. Enter a Sewer, and divers Servants with dishes and service, and pass over the stage. Then enter MACBETH.

MACBETH If it were done when 'tis done, then 'twere well
It were done quickly: if the assassination
Could trammel up the consequence, and catch
With his surcease success; that but this blow
Might be the be-all and the end-all here,
But here, upon this bank and shoal of time,
We'ld jump the life to come. But in these cases
We still have judgment here; that we but teach
Bloody instructions, which, being taught, return
To plague the inventor: this even-handed justice
Commends the ingredience of our poison'd chalice
To our own lips. He's here in double trust;
First, as I am his kinsman and his subject,
Strong both against the deed; then, as his host,
Who should against his murderer shut the door,
Not bear the knife myself. Besides, this Duncan
Hath borne his faculties so meek, hath been
So clear in his great office, that his virtues
Will plead like angels, trumpet-tongued, against
The deep damnation of his taking-off;
And pity, like a naked new-born babe,
Striding the blast, or heaven's cherubim, horsed
Upon the sightless couriers of the air,
Shall blow the horrid deed in every eye,
That tears shall drown the wind. I have no spur
To prick the sides of my intent, but only
Vaulting ambition, which o'erleaps itself

And falls on th'other.

Starting with this extract, explain how far you think Shakespeare present Ambition in Macbeth. Write about:
• how Shakespeare presents ambition in this extract
• how Shakespeare presents ambition in the play as a whole. [30 marks] AO4 [4 marks]

4 weeks until PPE **9th November – 15th November 2020**

Maths

Averages

Things to remember:

- Mode is most – the number that occurs the most frequently.
- Median is middle – put the numbers in order then identify the middle number.
- Mean is mean to work out – add all the numbers together and divide by the quantity in the list.
- Range is the difference from the biggest to the smallest.

Questions:

1. Mrs Smith asked each student in her class to record the numbers of times they used their mobile phone last Saturday.
Here are the results for the boys.

Boys	8	10	8	9	7	9	8	13
14								

(a) Work out the median.

.....

(2)

Here are the results for the girls.

Girls	6	8	9	9	10	14	14

*(b) Compare the numbers of times the boys used their mobile phones with the numbers of times the girls used their mobile phones.

(4)
(Total for question = 6 marks)

2. There are 18 packets of sweets and 12 boxes of sweets in a carton.
The mean number of sweets in all the 30 packets and boxes is 14
The mean number of sweets in the 18 packets is 10
Work out the mean number of sweets in the boxes.

.....

(Total for question = 3 marks)

3. 25 students in class A did a science exam.
30 students in class B did the same science exam.
The mean mark for the 25 students in class A is 67.8
The mean mark for all the 55 students is 72.0
Work out the mean mark for the students in class B.

.....

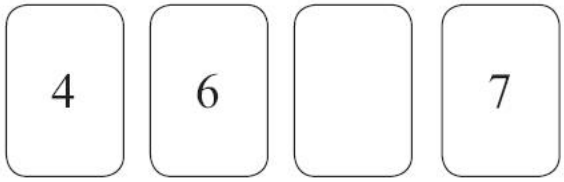
(Total for Question is 3 marks)

4. There are 10 boys and 20 girls in Mrs Brook's class.
Mrs Brook gave all the class a test.
The mean mark for all the class is 60
The mean mark for the girls is 56
Work out the mean mark for the boys.

.....

(Total for Question is 3 marks)

5. Here are four number cards.
One of the cards is turned over so you cannot see the number on it.



The mean of the four numbers is 6
Work out the number you **cannot** see.

.....

(Total for Question 10 is 3 marks)

***6.** There are two trays of plants in a greenhouse.
The first tray of plants was given fertiliser.
The second tray of plants was not given fertiliser.
On Monday the heights of the plants were measured in centimetres.
The boxes show some information about the heights of the plants.

Heights of the plants given fertiliser

22	29	30	35	37	40	44	47
48	48	54	56	59	66	72	

Information about the heights of plants not given fertiliser

Smallest	18	Lower quartile	26
Largest	64	Upper quartile	47
Median	44		

Compare the distribution of the heights of the plants given fertiliser to the distribution of the heights of the plants not given fertiliser.

(Total for Question is 4 marks)

7. 23 girls have a mean height of 153 cm.
17 boys have a mean height of 165 cm.
Work out the mean height of all 40 children.

..... cm

(Total for Question is 3 marks)

8. Hertford Juniors is a basketball team.
At the end of 10 games, their mean score is 35 points per game.
At the end of 11 games, their mean score has gone down to 33 points per game.
How many points did the team score in the 11th game?

.....

(Total for Question is 3 marks)

9. Mr Brown gives his class a test.
The 10 girls in the class get a mean mark of 70%
The 15 boys in the class get a mean mark of 80%

Nick says that because the mean of 70 and 80 is 75 then the mean mark for the whole class in the test is 75%
Nick is not correct.

Is the correct mean mark less than or greater than 75%?
You must justify your answer.

.....

.....

.....

(Total for question = 2 marks)

10. Walkden Reds is a basketball team.
At the end of 11 games, their mean score was 33 points per game.
At the end of 10 games, their mean score was 2 points higher.

Jordan says,
"Walkden Reds must have scored 13 points in their 11th game."

Is Jordan right?
You must show how you get your answer.

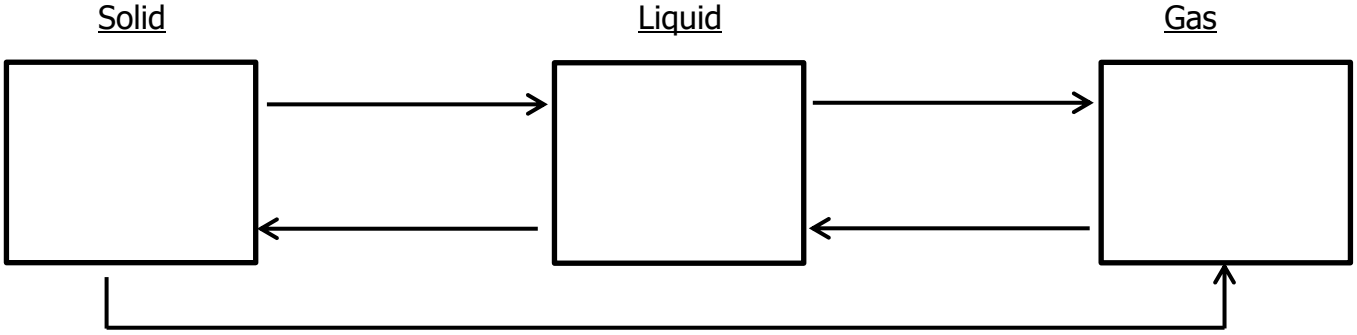
.....

(Total for question is 3 marks)

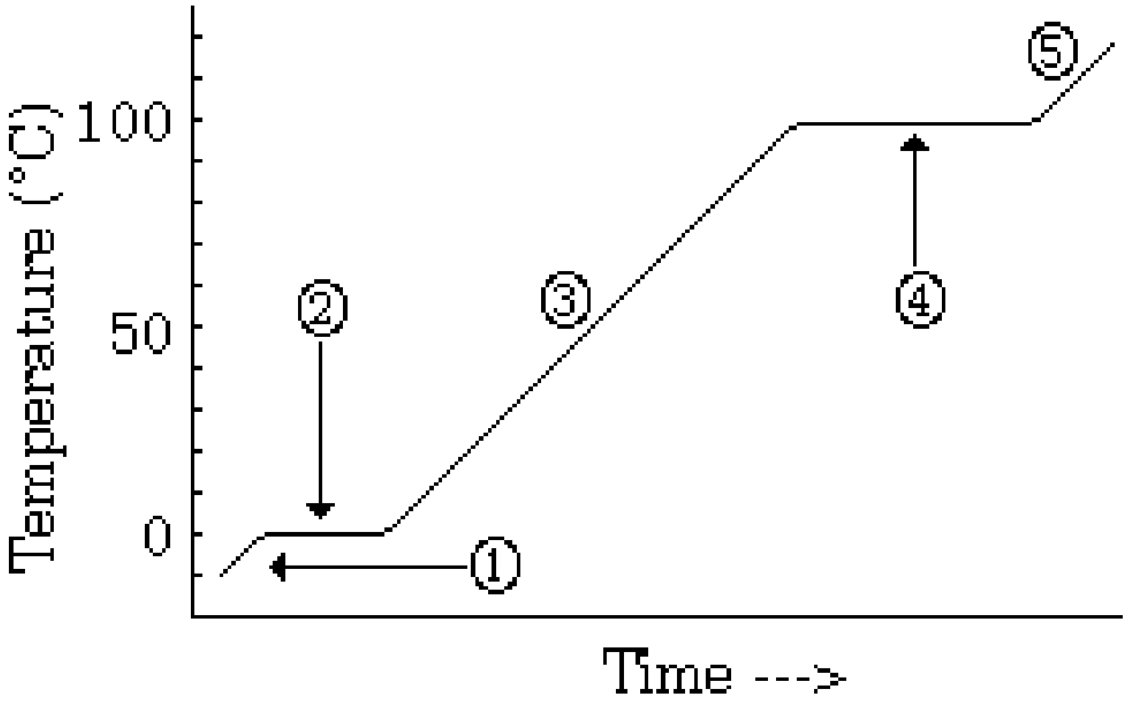
4 weeks until PPE **9th November – 15th November 2020**

Science

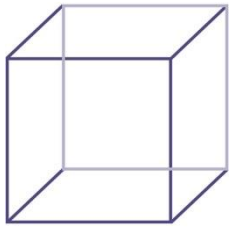
- ***Complete the following diagram to show the particle arrangement in the three states of matter. Add labels to the arrows to name the changes of state.***



- ***The graph below is a heating curve for water. Add labels to state what is happening at points 1-5.***



- ***Describe the method for calculating the density of a regular shaped object e.g. a cube.***



- ***Describe the method for calculating the density of an irregular shaped object e.g. a chess piece.***

(Remember to include the equation you would use in your calculations)

- ***Define internal energy.***

- ***Define specific heat capacity and write the equation stating what each symbol represents and the units it is measured in.***

- ***Define specific latent heat and write the equation stating what each symbol represents and the units it is measured in.***

- ***Describe the method for calculating the specific heat capacity of a given material e.g a block of aluminium.***

3 weeks until PPE **16th November – 22nd November 2020**

English

Stave Five

Scrooge wakes up in his bedroom and joyfully repeats his vow to live from the lessons of the three ghosts. He runs around his house and then outside, where church bells ring. A boy tells him it is Christmas Day, and Scrooge realizes that the ghosts visited him all in one night. Scrooge buys a prize turkey and sends it to Bob Cratchit's house.

6. Consider the decluttered description of Scrooge. Think about how Dickens uses language to present Scrooge and how Scrooge has now changed. Annotate around the description with your ideas.

I am

Light as a feather

Happy as an angel

Merry as a schoolboy

Frisking round the fireplace

A splendid laugh

A most illustrious laugh

I'm quite a baby

Glorious, glorious!

Irresistibly pleasant

Scrooge dresses in his best clothing and walks in the crowds with a smile. He gives a great deal of money to the portly gentleman who had asked him for a charitable donation yesterday. Scrooge continues to walk through the city and happily talks with everyone he meets. He visits Fred's house and has a wonderful time at the party. The next morning, Scrooge gets to work early. When Cratchit comes in late, Scrooge pretends to reprimand him, then gives him a raise.

7. Answer the following questions in complete sentences.

Consider the following passage:

> Running to the window, he opened it, and put out his head. No fog, no mist; clear, bright, jovial, stirring, cold; cold, piping for the blood to dance to; Golden sunlight; Heavenly sky; sweet fresh air; merry bells. Oh, glorious. Glorious!

How has the weather (and particularly the cold) changed from the beginning of Stave One? What is the significance of this?

How is 'A Christmas Carol' an example of a cyclical narrative? Which events occur in Stave Five which are similar to events in Stave One? How are they slightly different?

Why is it important readers see that Scrooge, the worst man in London, has changed?

How and why is Scrooge no longer ignorant?

Read the following passage:

"A merry Christmas, Bob," said Scrooge, with an earnestness that could not be mistaken, as he clapped him on the back. "A merrier Christmas, Bob, my good fellow, than I have given you for many a year. I'll raise your salary, and endeavour to assist your struggling family, and we will discuss your affairs this very afternoon, over a Christmas bowl of smoking bishop, Bob. Make up the fires, and buy another coal-scuttle before you dot another *i*, Bob Cratchit!"

How will Scrooge's actions change Bob's life? Why is it important Scrooge says this in the story?

Scrooge continues his kindly ways, befriending everyone and becoming a second father to Tiny Tim, who does not die. He never sees the ghosts again, but he keeps the spirit of Christmas alive in his heart as well as anyone.

8. For each of the following quotations, consider the following:
   - What does the quotation mean?
   - What does the quotation suggest?
   - What is the significance of the language used?

"Make up the fires, and buy another coal-scuttle before you dot another *i*, Bob Cratchit!"

'Some people laughed to see the alteration in him, but he let them laugh, and little heeded them.'

9. Complete each analytical verb with a different idea:

Dickens may have written 'A Christmas Carol':

to criticise

to teach

to warn

to reveal the importance of

to celebrate

Explain which episode of Scrooge's path to redemption has the most significant impact on him and why. Use quotations in your answer and discuss them.

3 weeks until PPE **6th November – 22nd November 2020**

Maths

Scatter Graphs

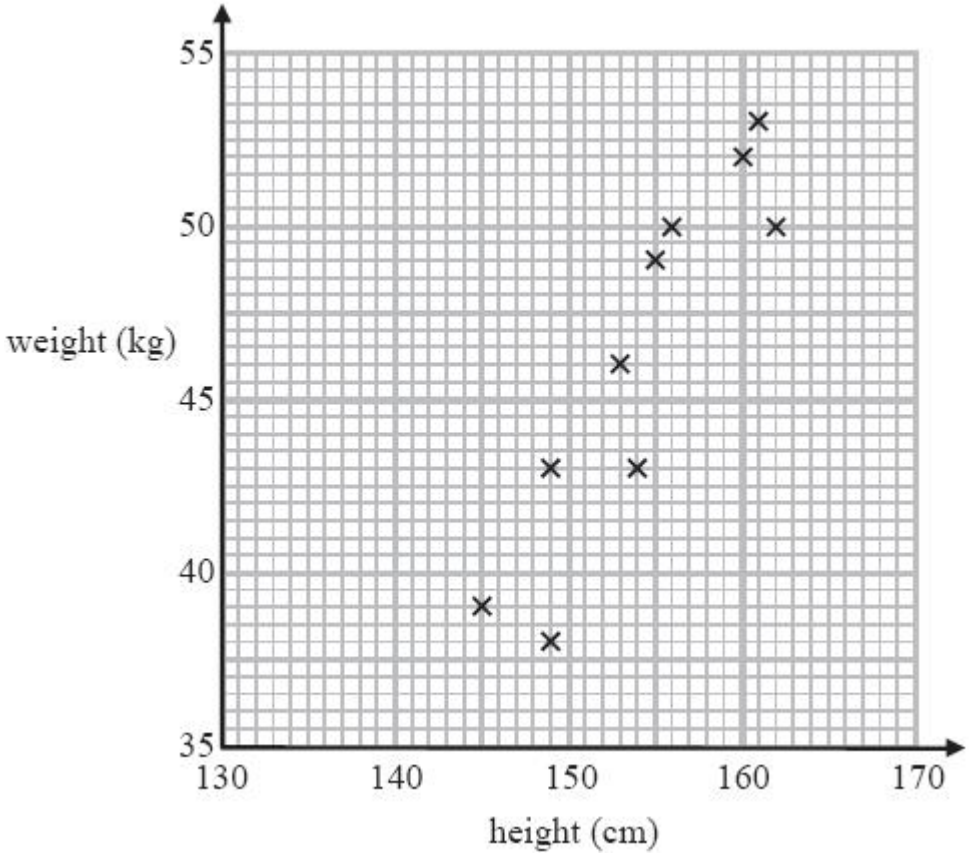
Things to remember:

- Check the scale carefully when plotting points. If it helps, write in more numbers on the scale.
- Always draw a line of best fit
- When estimating a value show lines on your graph.
- You can describe a relationship by using the words "positive correlation" or "negative correlation." Make sure you include the word correlation.

Questions:

1. Leon recorded the height, in cm, and the weight, in kg, of each of ten students.

The scatter graph shows information about his results.



A different student has a height of 146 cm and a weight of 41 kg.

(a) Plot this information on the scatter graph.

(1)

(b) Describe the relationship between the height and the weight of these students.

.....

(1)

A student has a weight of 47.5 kg.

(c) Use the scatter graph to estimate the height of this student.

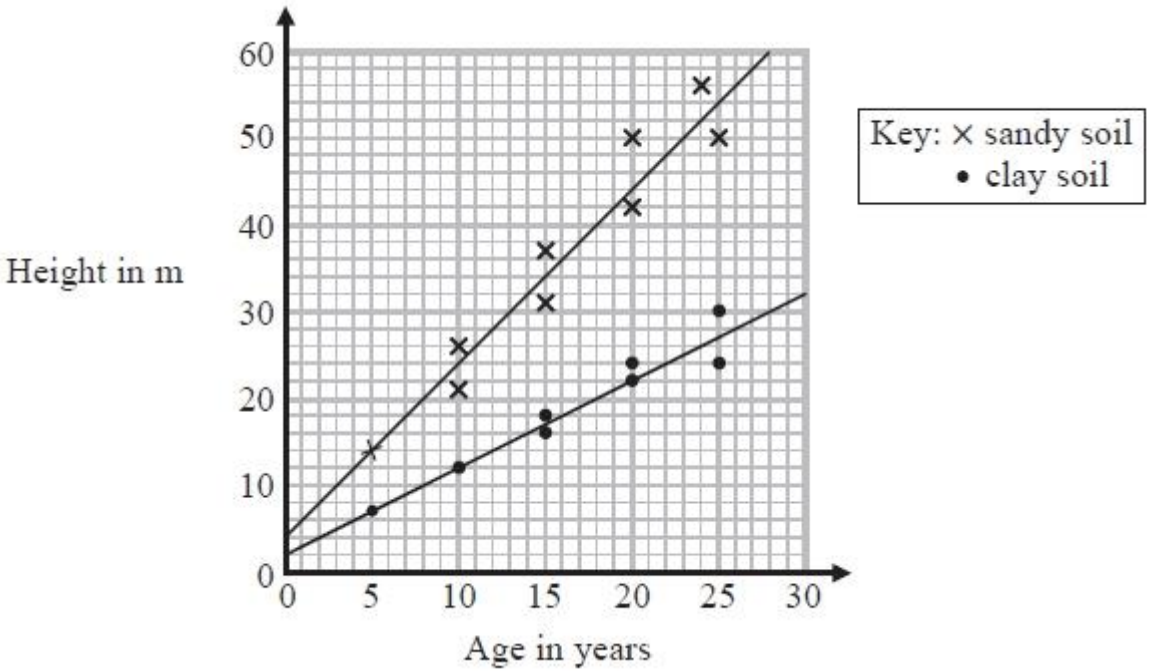
..... cm

(2)

(Total for question = 4 marks)

2. Bill wants to compare the heights of pine trees growing in sandy soil with the heights of pine trees growing in clay soil.

The scatter diagram gives some information about the heights and the ages of some pine trees.



(a) Describe the relationship between the height of pine trees and the age of pine trees growing in sandy soil.

.....

(1)

A pine tree growing in clay soil is 18 years old.

(b) Find an estimate for the height of this tree.

.....m

(1)

A pine tree is growing in sandy soil.

(c) Work out an estimate for how much the height of this tree increases in a year.

.....m

(2)

(d) Compare the rate of increase of the height of trees growing in clay soil with the rate of increase of the height of trees growing in sandy soil.

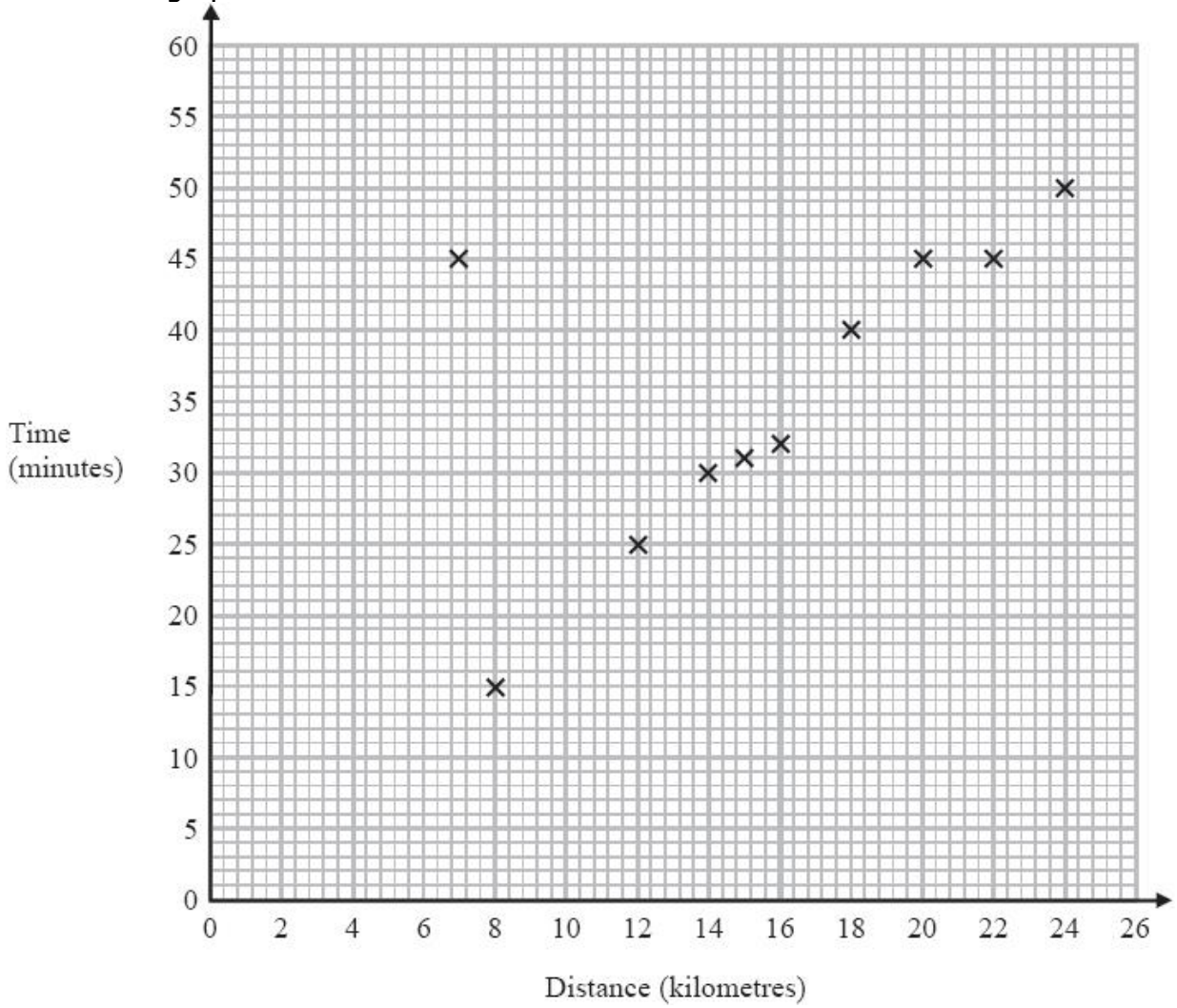
.....

.....

(2)
(Total for question = 6 marks)

3. A delivery driver records for each delivery the distance he drives and the time taken.

The scatter graph shows this information.



For another delivery he drives 22 kilometres and takes 50 minutes.

(a) Show this information on the scatter graph.

(1)

(b) What type of correlation does the scatter graph show?

.....

(1)

The driver has to drive a distance of 10km for his next delivery.

(c) Estimate the time taken for this delivery.

..... minutes

(2)

During one of the deliveries, the driver was delayed by road works.

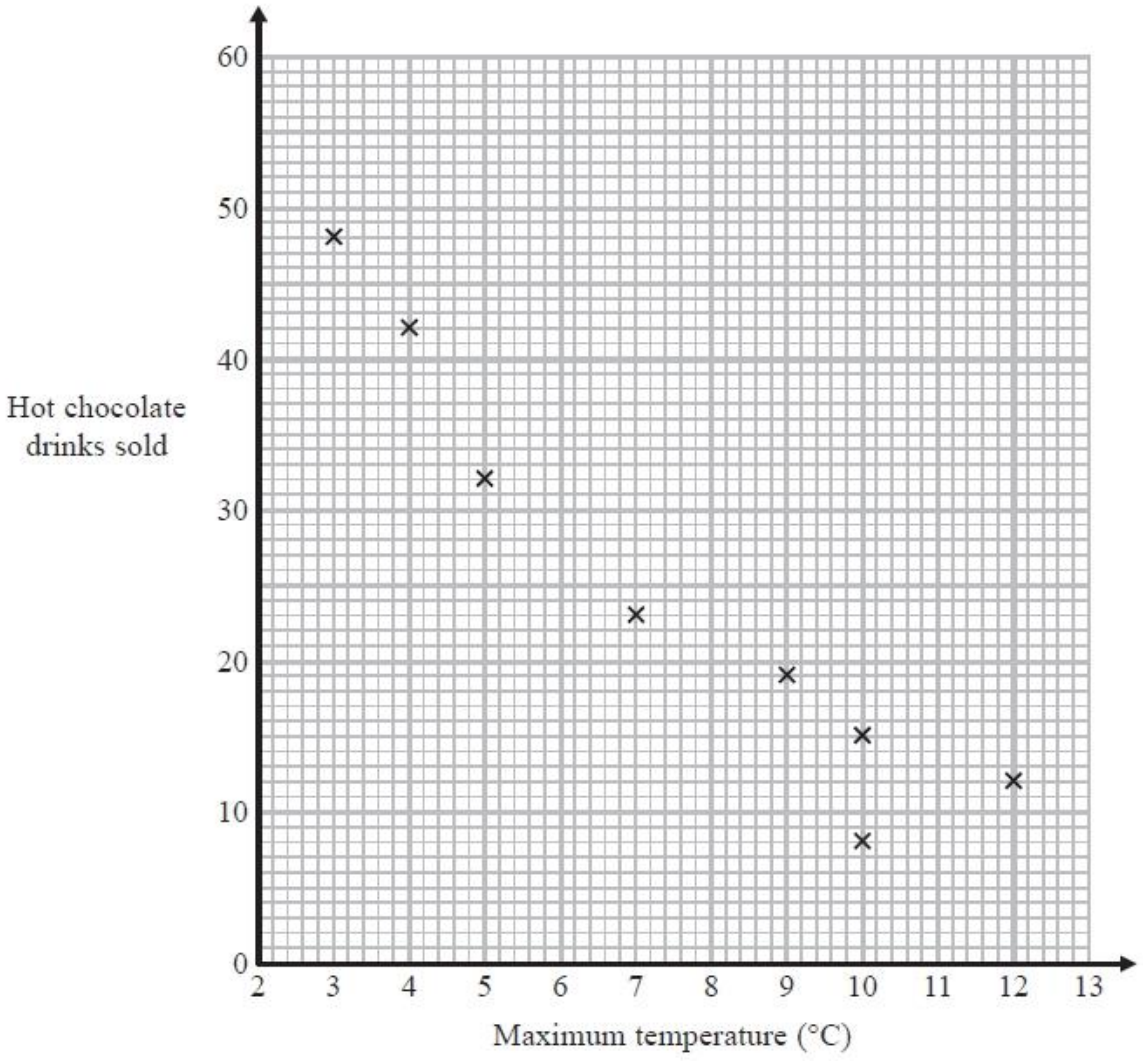
(d) Using the graph write down the time taken for this delivery.

..... minutes

(1)

(Total for question = 5 marks)

4. Carlos has a cafe in Clacton.
Each day, he records the maximum temperature in degrees Celsius (°C) in Clacton and the number of hot chocolate drinks sold.
The scatter graph shows this information.



On another day the maximum temperature was 6 °C and 35 hot chocolate drinks were sold.

(a) Show this information on the scatter graph.

(1)

(b) Describe the relationship between the maximum temperature and the number of hot chocolate drinks sold.

.....

.....

(1)

(c) Draw a line of best fit on the scatter diagram.

(1)

One day the maximum temperature was 8 °C.

(d) Use your line of best fit to estimate how many hot chocolate drinks were sold.

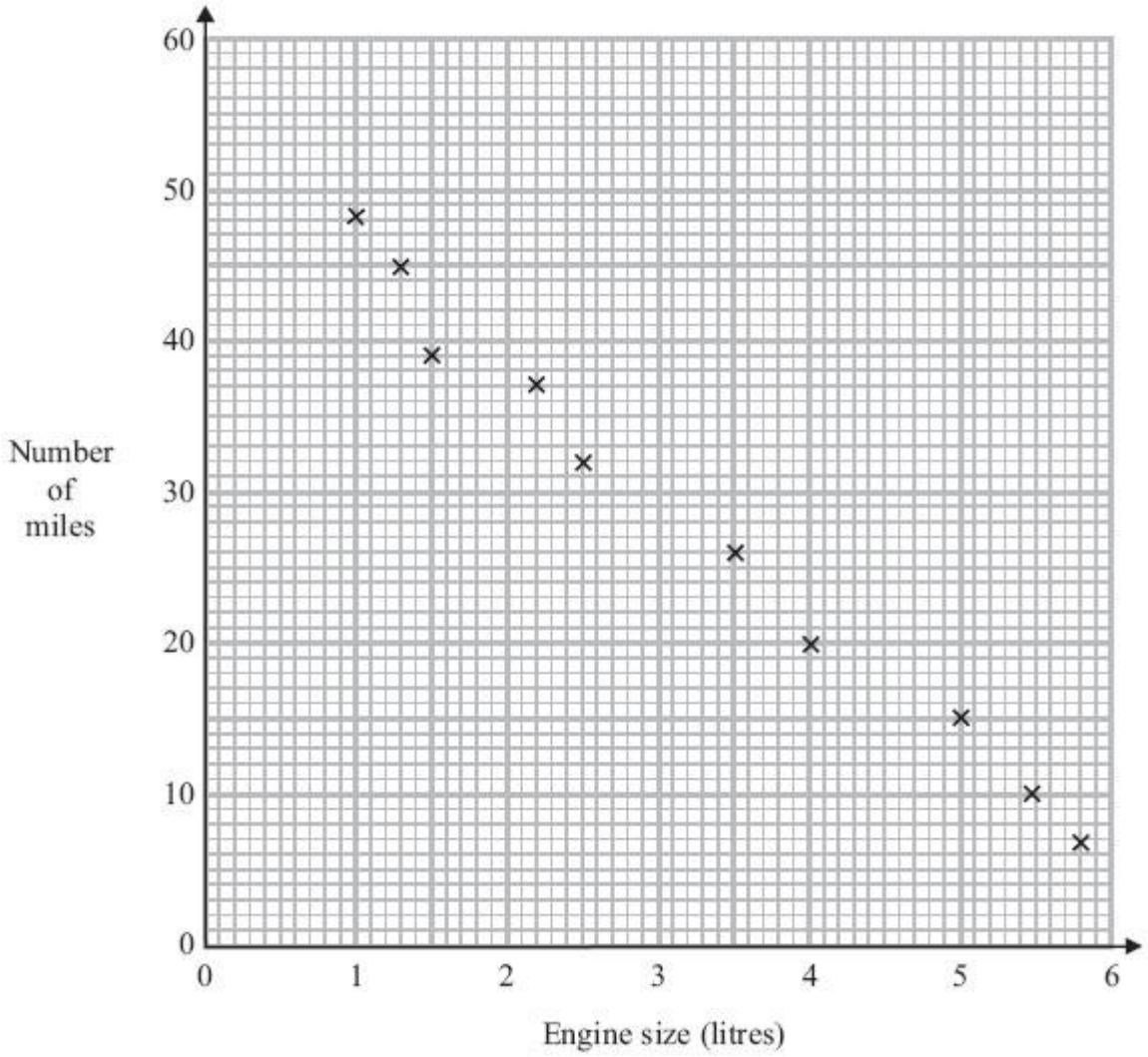
.....

(1)

(Total for Question is 4 marks)

5. A car company records the number of miles cars of different engine sizes, in litres, travel using one gallon of fuel.

The scatter graph shows this information.



Another car has an engine size of 1.8 litres and travels 42 miles using one gallon of fuel.

(a) Plot this information on the scatter graph.

(1)

(b) What type of correlation does this scatter graph show?

.....

(1)

(c) Draw a line of best fit.

(1)

A car has an engine size of 2.8 litres.

(d) Find an estimate for the number of miles this car travels using one gallon of fuel.

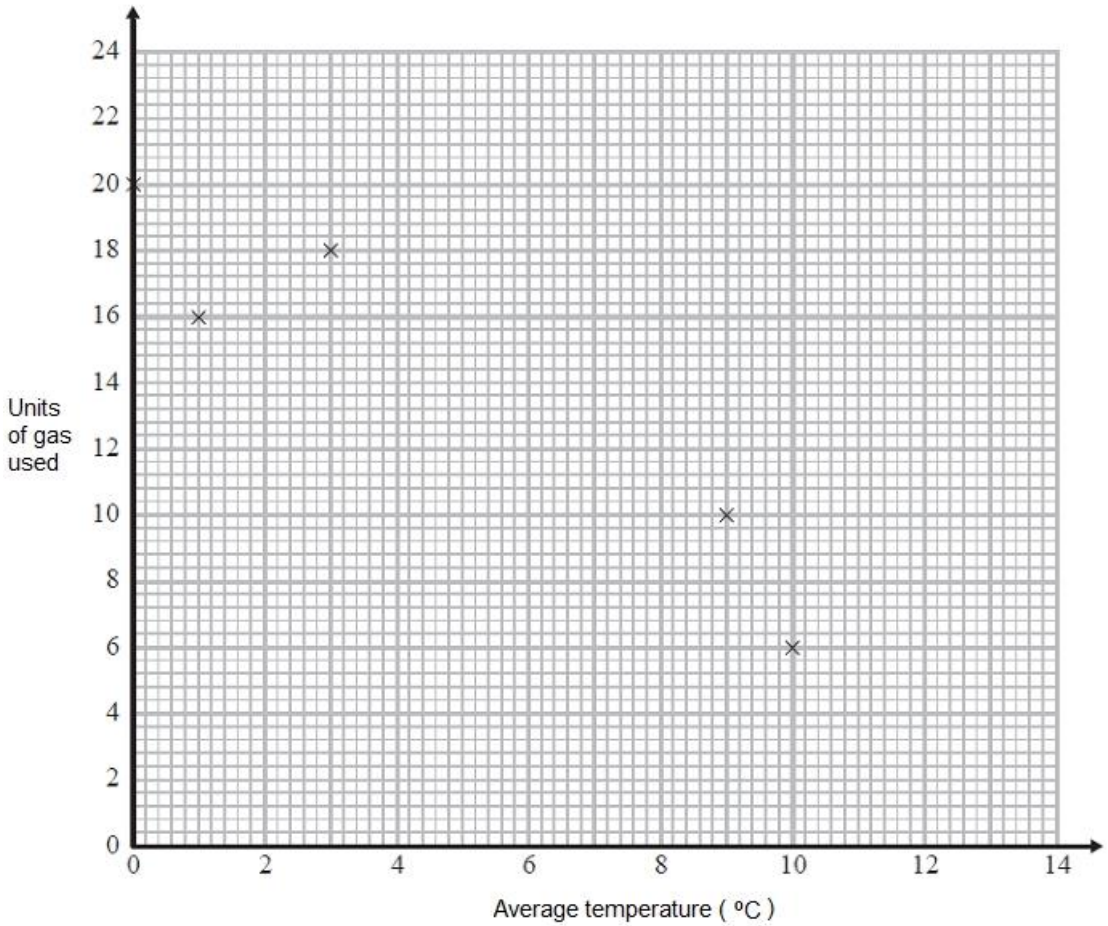
..... miles

(1)

(Total for Question is 4 marks)

6. The table shows the average temperature on each of seven days and the number of units of gas used to heat a house on these days.

Average temperature (°C)	0	1	3	9	10	12	13
Units of gas used	20	16	18	10	6	6	2



(a) Complete the scatter graph to show the information in the table.
The first 5 points have been plotted for you.

(1)

(b) Describe the relationship between the average temperature and the number of units of gas used.

.....

.....

(1)

(c) Estimate the average temperature on a day when 12 units of gas are used.

.....°C

(2)

(Total for Question is 4 marks)

3 weeks until PPE **16th November – 22nd November 2020**

Science

Waves can be longitudinal or transverse.

- ***Draw and label a transverse wave.***

- ***Draw and label a longitudinal wave.***

- ***Use the words below to complete the sentences describing the direction of energy transfer in each type of wave:***

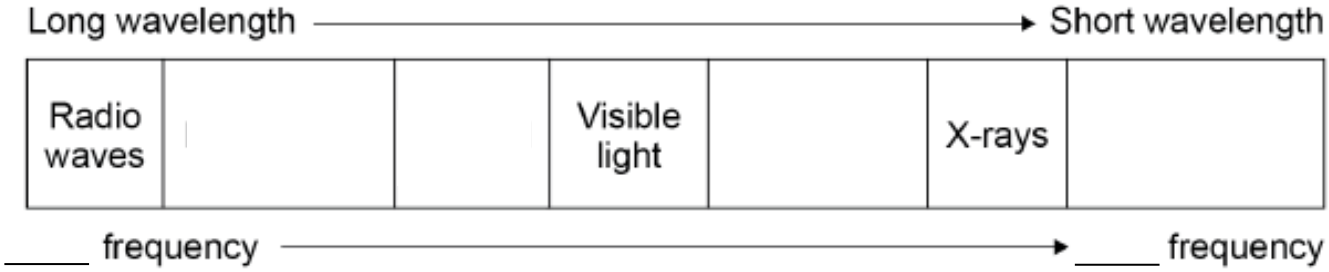
In _____ waves the oscillations are _____ to the direction of _____ _____.

In _____ waves the _____ are parallel to the direction of _____ _____.

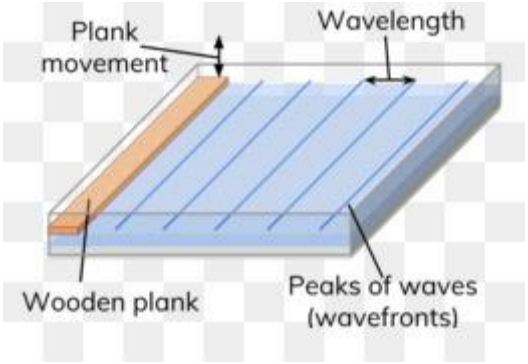
oscillations energy transfer perpendicular

longitudinal transverse

- ***Complete the diagram of the electromagnetic spectrum.***



The diagram below shows a ripple tank:



- ***Write a method to explain how you would calculate the speed of the waves produced by the ripple tank.***

  You should include:
  - The measurements you would record.
  - How you would make the measurements.
  - The equation you would use to calculate wave speed.

- ***Complete the table to describe the uses, properties and dangers of electromagnetic waves.***

_____ wavelength ⟶

_____ wavelength

	Radio waves			**Visible light**			**Gamma rays**
Uses							
Properties / explanation of use							
Dangers							

2 weeks until PPE **23rd November – 29th November 2020**

English

Text Types - learn the conventions

Text type	Features you must include
Newspaper Article	Headline, kicker (strapline), clear sequence of paragraphs. Formal tone
Magazine Article	Headline, kicker (strapline), subheadings. Less formal/more chatty tone.
Letter	Clearly addressing reader (Dear Sir/Madam), sign-off (Yours Sincerely/Faithfully), date
Speech	Clearly addressing an audience (greeting and sign-off), discourse markers (firstly, finally)
Leaflet	Clear heading, subheadings and subsections, fact/info boxes. Appropriate tone for subject (serious or informal)

Use this information about paper 2 to practice – you can use old papers from AQA or you can use revision guides or you can use interesting articles from newspapers or magazines.

Read as much non fiction as you can. LEARN the ways in which writers work.

English Language Paper Two – 80 marks; 1hr 45 mins

READ SOURCE A FIRST – spend at least 5 minutes reading and underlining key information

Q1 4 marks 5 mins
- Choose four true statements
- Read the statements carefully (sometimes they try to trick you)

Q2 8 marks 8 mins Summary of both texts
- Read each text again
- Two things from each is enough (4 short paragraphs in total)
- Statement about Source A → Quote → This suggests…
- Statement about Source B → Quote → This suggests…
- Repeat

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- Statement about Source B → Quote → This suggests…
- Repeat

Noun	Names a thing
Adjective	Describes a noun
Verb	Action (doing word)
Adverb	Words that tell you how an action is performed (-ly words)

Simile	Like or as something
Metaphor	Is something else
Personification	Making non-human thing seem human
Zoomorphic language	Person/thing described as an animal

Q4 16 marks 20 mins Comparing viewpoints and methods

- Compare the writers' attitudes/viewpoints on the subject and the methods (language and/or structure) they use to get these viewpoints across.
- Focus on how the writers think/feel about the subject they are writing about.
- Four paragraphs (two about each source – ABAB)
- Try to structure your answer.

Statement (about an attitude in Source A)
Evidence (quote from Source A)
Inference (This suggests…)
Zoom in (on language)
Effect (of this language on the reader)
Discourse marker (Similarly/in contrast)
Statement (about an attitude in Source B)
Evidence (quote from Source B)
Inference (This suggests…)
Zoom in (on language)
Effect (of this language on the reader)

Q5 40 marks (24+16) 45 mins Non-fiction writing

- Plan for at least 5 mins (you should know exactly what each paragraph will be)
- Leave at least 5 mins for proof reading at the end

Styles of writing (you could be asked to do any of these)

	WRITING TO ARGUE	WRITING TO PERSUADE	WRITING TO ADVISE	WRITING TO EXPLAIN/INFORM
What is it?	Giving the case for one side of a debate	Convincing someone that your opinion is right	Providing ways forward for someone.	Explaining your opinion on a topic to your reader.
What does it involve?	Being aware of the other side of a debate	Using your language to convince your leader.	Not telling someone what to do but giving them options.	You are not convincing people or advising.
What key features do you often find in this type of writing?	Includes counter-arguments, rhetorical questions, facts, statistics, emotive language	Includes triplets, repetition, emotive language, rhetorical questions, direct address and more…	Includes modal verbs, imperatives, an understanding tone but one that is direct. Provide helpful information.	Includes facts, opinions, an unbiased and neutral tone.

2 weeks until PPE **23rd November – 29th November 2020**

Maths

Pie Charts

- **Remember that all the angles must add to 360 degrees**
- **To find the angle of one thing/person divide 360 by the total frequency**

Questions

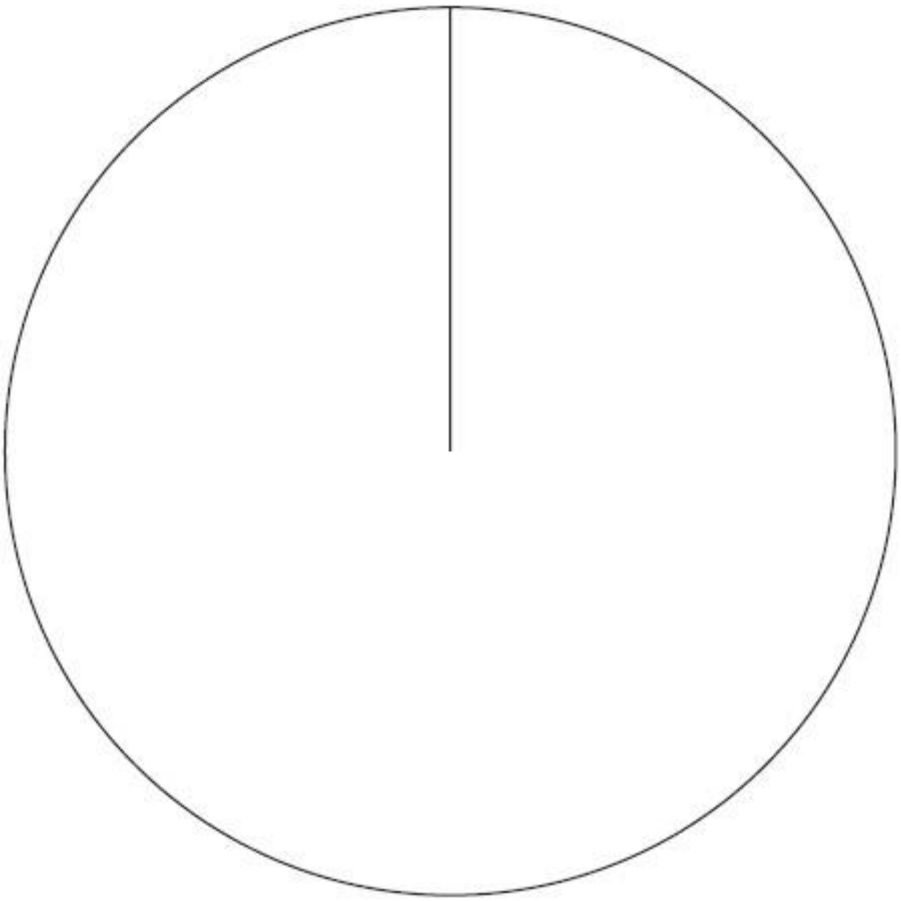
Q1.

Sharon asked each of her friends to name their favourite Olympic sport.

The table below shows information about their answers.

Sport	Frequency
athletics	13
cycling	17
swimming	8
gymnastics	7

Draw an accurate pie chart for this information.



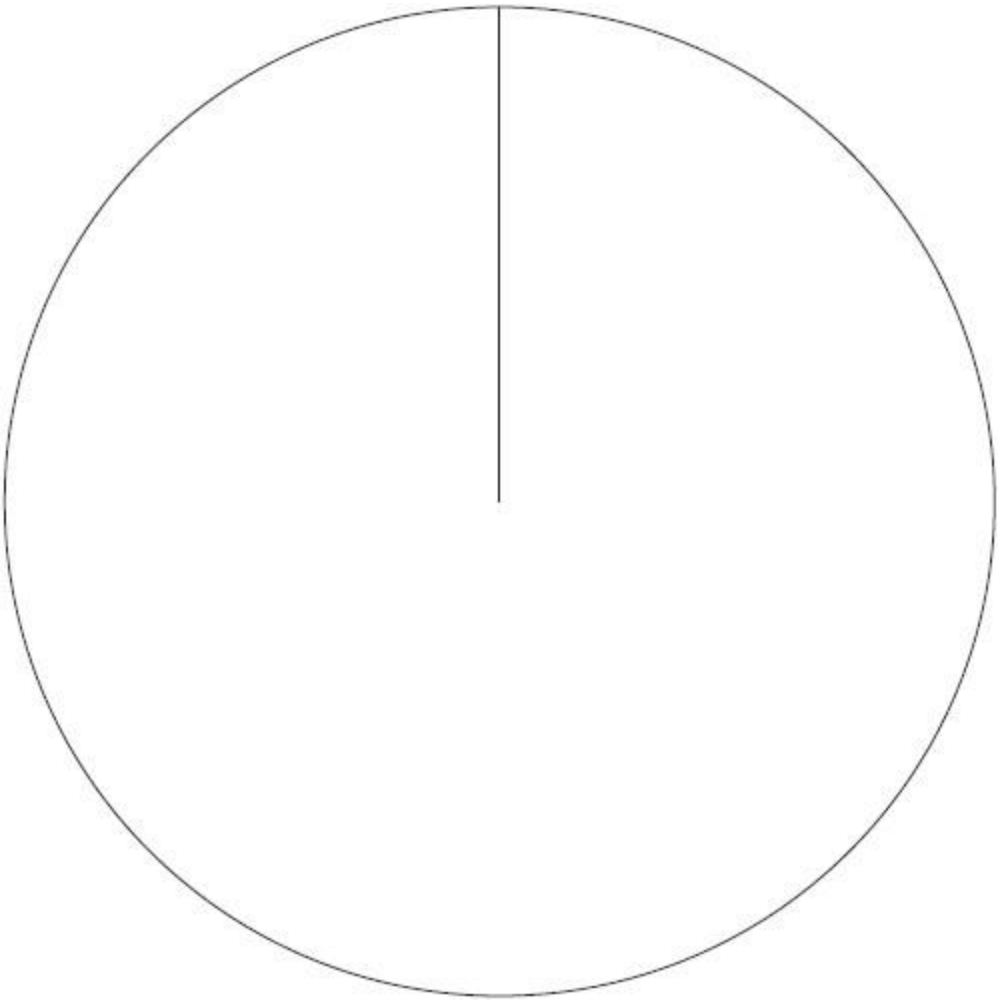
(Total for question = 3 marks)

Q2.

Year 9 students from Halle School were asked to choose one language to study.
The table shows information about their choices.

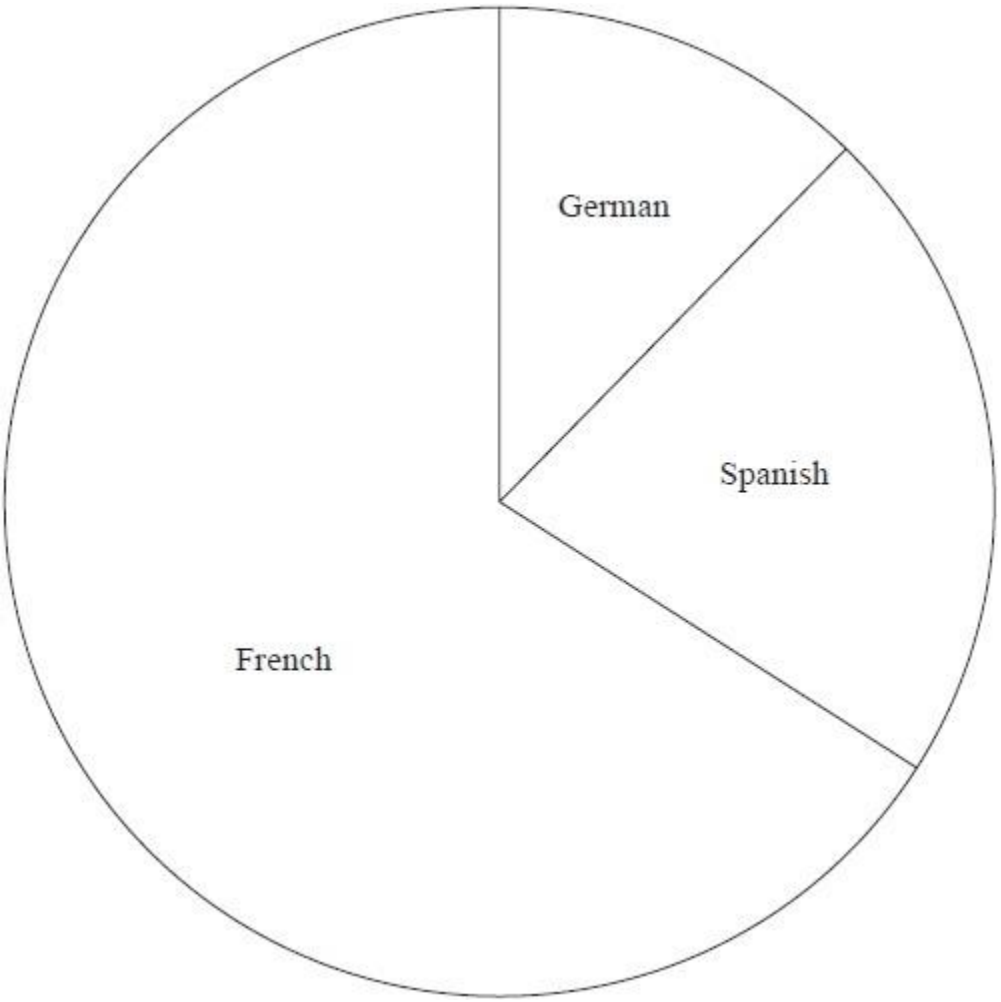
Language	Number of students	
French	56	
Spanish	40	
German	24	

(a) Draw an accurate pie chart to show this information.



(3)

Year 9 students from Lowry School were also asked to choose one language to study.
This accurate pie chart shows information about their choices.



Shameena says,

"The pie chart shows that French was chosen by more Year 9 students at Lowry School than at Halle School."

(b) Is Shameena right?

You must explain your answer.

.....

.....

.....

(1)

(Total for question = 4 marks)

Q3.

60 students were asked how they get to school.

The table shows the results.

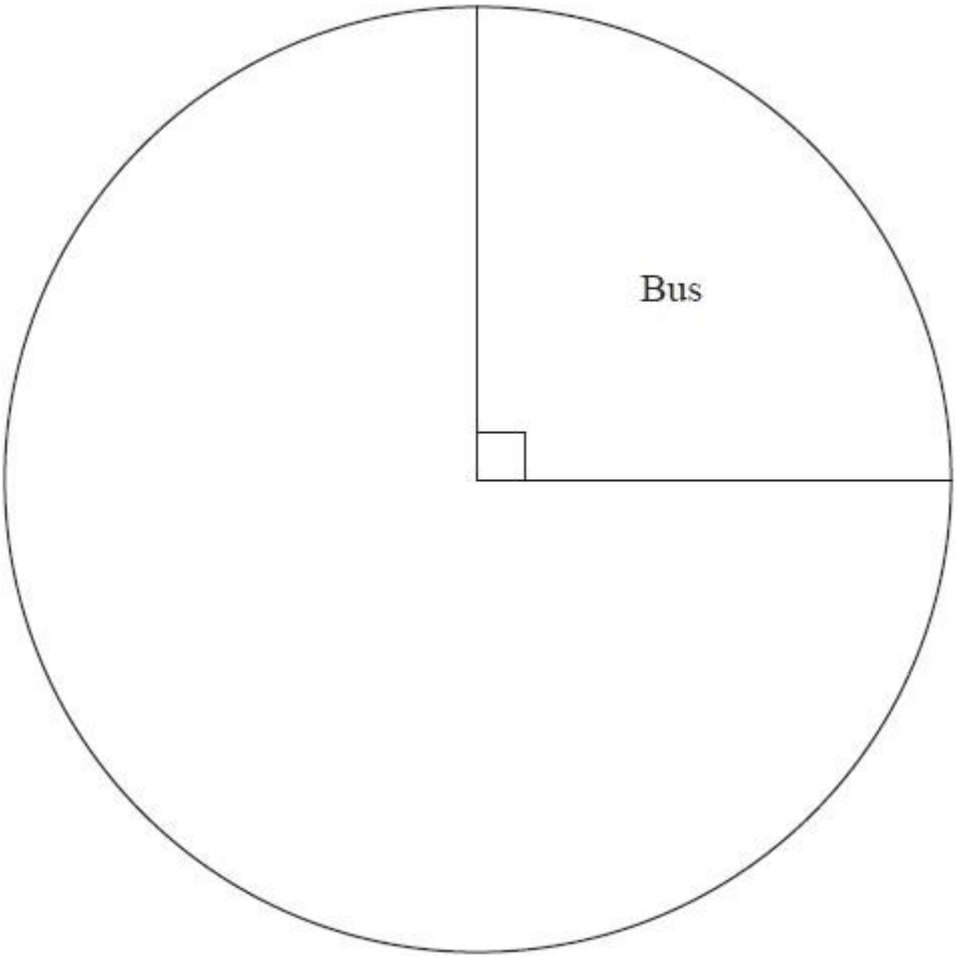
	Bus	Walk	Car	Bicycle
Number of students	15	27	12	6

(a) What fraction of the 60 students did **not** walk to school?

.....

(2)

(b) Complete the pie chart for the information in the table.



(4)

(Total for question = 6 marks)

2 weeks until PPE **23rd November – 29th November 2020**

Science

- **Write notes on each of the following plant diseases. You should include:**
  - **Whether it is caused by a bacteria, virus or fungi**
  - **The symptoms**
  - **Any possible treatments**

Tobacco Mosaic Virus (TMV)

Rose Black Spot

- **Write notes on each of the following animal diseases. You should include:**
  - **Whether it is caused by a bacteria, virus or fungi**
  - **The symptoms**
  - **Any possible treatments**

HIV

Measles

Malaria

Gonorrhoea

Salmonella

1 week until PPE **30th November – 6th December 2020**

English

Paper 2 Mini Mock: Charity Housing

An extract from 'How the Poor Live' written in 1883 by George R Sims. The writer describes a charity organisation which houses young women.

One good work, however, which I do not care to leave hiding its light under a bushel, is the home for factory-girls, managed by the Sisters of St. John the Baptist, Clewer, and situated in Southwark.

Here, girls employed in the many factories of the neighbourhood during the day can, if they are willing to submit to the rules, find a real home for a small weekly payment, and escape the wretched and too often vicious surroundings of the places in which their parents live.

With a full knowledge of all the temptation which besets the work-girls who have to spend their leisure in these slums none can doubt the good work such institutions may do.

On the night of our visit we were conducted from basement to roof by one of the Sisters; we saw the girls and heard their histories from their own lips, and learnt how terrible was the sin and misery which had forced them to look upon their vile homes with loathing, and how fierce the temptation which beset them when left to themselves.

These girls are of the class which most deserve help; they work hard at dangerous trades for their living, and they pay for their food and board. What the charity does is to throw a certain home influence around them, give them cleanliness and godliness, and preserve them to some extent from the contamination of the streets - streets here which are thronged at night with the worst types of humanity the great city can show.

The following article from 2018 describes the building of a shelter designed to house pets and the domestic abuse victims.

From easy-to-clean floors to a grooming room to a color palette toned for dog and cat eyes, a building rising in New York is clearly a place for pets.

But it's not an animal hospital or a doggy daycare. Rather, it's what organizers say is the nation's first large domestic violence shelter custom-built for victims to keep their pets in their apartments.

Expected to open in October and house up to 100 people, it builds on a growing roster of shelters that accommodate animals so their owners won't hesitate to leave abusive homes. Organizers say it's the first of its size specifically designed for every apartment to house people with pets.

"By doing so from the ground up, with not only humans in mind but pets in mind, it's going to allow for a fuller recovery for pets and the entire family," says Dr. Kurt Venator, chief veterinary officer of Nestle Purina PetCare Co., which is contributing supplies and expertise to the $20 million project.

The Urban Resource Institute, a shelter operator, is running the facility, financed through private donations and some government support.

Studies have documented links between domestic violence and animal cruelty and have noted some victims' reluctance to leave without their pets. Some fear their abusers will retaliate by harming the animals.

2. Write a summary of the differences between the two charities.

3. In source A how does the writer use language to describe the girls' lives?

4. Compare the writers' attitudes to the charities and the victims of abuse.

5. "Charity begins at home. We should not donate money to people abroad". Write an article giving your views on this statement.

1 week until PPE **30th November – 6th December 2020**

Maths

Two-way tables

- **Always remember to ensure all your columns and rows totals are the same.**
- **The table won't always be drawn, so use the information given to draw a table.**

Questions

Q1.

Complete the two-way table.

	blue eyes	brown eyes	green eyes	total
boys	5		4	12
girls		7		
total			9	30

(Total for question is 3 marks)

Q2.

There are 40 students in a class.
Each student walks to school or cycles to school or gets the bus to school.

There are 22 girls in the class.
9 of the girls walk to school.
7 of the boys cycle to school.
6 of the 10 students who get the bus to school are boys.

Find the number of these students who walk to school.

.....

(Total for question = 4 marks)

Q3.

100 adults were asked how they keep fit.

Each adult goes to the gym or runs or cycles.

45 of these adults are female.
30 of the 52 adults who go to the gym are female.
35 adults run.
9 males cycle.

How many females run?

.....

(Total for question = 3 marks)

1 week until PPE **30th November – 6th December 2020**

Science

ALKALIS → Alkalis are usually made of two words.

- The **first** word is usually a **metal** or **ammonia**
- The **second** word is usually **hydroxide** or **oxide**

ACIDS → You need to know the salts that **three acids** make:

Acid	Salt it makes
hydrochloric acid	chlor**ide**
nitric acid	nitr**ate**
sulfuric acid	sulf**ate**

SALTS → salts have two words in their name.

- The **first** name comes from the **alkali** that made them. It is usually a metal.
- The **second** name is from the **acid** that made them.

You make a salt by adding a metal and an acid

metal + acid → **salt** + hydrogen

OR you can make a salt by adding an alkali and an acid:

- ***Fill in the table to show the names of the salts formed when the metals and acids react together. The first one has been done for you.***

alkali + acid → **salt** + water

Name of <u>metal</u>	Name of <u>acid</u>	Name of salt formed when they react together
magnesium	hydrochloric acid	magnesium chloride
zinc	hydrochloric acid	
iron	hydrochloric acid	
copper	sulfuric acid	
calcium	sulfuric acid	
sodium	nitric acid	
potassium	nitric acid	

- ***Fill in the table to show the names of the salts formed when the alkalis and acids react together. The first one has been done for you. Don't be put off by the name of the alkali, continue to just use the metal in the salt.***

Name of alkali	Name of acid	Name of salt formed when they react together
aluminium oxide	hydrochloric acid	aluminium chloride
magnesium oxide	hydrochloric acid	
sodium hydroxide	hydrochloric acid	
calcium hydroxide	nitric acid	
copper hydroxide	nitric acid	
magnesium oxide	sulfuric acid	
zinc hydroxide	sulfuric acid	

- ***Fill in this table to show the names of the alkali and acid which could have been used to make each salt.***

Name of alkali	Name of acid	Name of salt formed when they react together
calcium oxide	hydrochloric acid	calcium chloride
		lithium nitrate
		calcium chloride
		copper sulfate
		potassium sulfate
		magnesium nitrate
		sodium sulfate
		copper chloride

- ***Complete these word equations***

	alkali	**+**	**acid**	**→**	**salt**	**+**	**water**
1.	calcium hydroxide	+	sulfuric acid	→	_____	+	_____
2.	potassium oxide	+	_____	→	potassium chloride	+	water
3.	_____	+	nitric acid	→	copper nitrate	+	_____
4.	iron hydroxide	+	nitric acid	→	_____	+	_____
5.	_____	+	_____	→	sodium nitrate	+	water
6	lithium hydroxide	+	_____	→	lithium sulfate	+	_____
7.	magnesium hydroxide	+	hydrochloric acid	→		+	_____
8.	_____	+	_____	→	sodium chloride	+	water