



# WEEK 6 TASKS

| Top Examiner Tips for GCSE Maths  |  |  |
|---|--|--|
|                       | <p>①</p> <p>Revise all the course content use our revision checklist to help.</p>          | <p>②</p> <p>Memorise the formulae. Use our poster to help.</p>                                   |
| <p>③</p> <p>Fuel your concentration. Eat properly before the exam and have some water on your desk.</p> | <p>④</p> <p>Make sure you have the correct equipment listed on the front of the paper.</p> | <p>⑤</p> <p>Read the question carefully.</p>   |
| <p>⑥</p> <p>Roughly allow one minute for each mark available.</p>                                       | <p>⑦</p> <p>Don't forget to show ALL the stages of your working.</p>                       | <p>⑧</p> <p>Communicate your responses fully. Use the correct terminology.</p>                   |
| <p>⑨</p> <p>Present and organise your work clearly.</p>   | <p>⑩</p> <p>Check your answers. Does it make sense?</p>                                    | <br>Pearson |

Remember: The exam is your opportunity to “show what you know”!

## **WEEK 6 TASK 1**

# One Marker Starters

Includes Summer 2017 – Summer 2024 Exam Papers



(Unless otherwise stated)

1

Simplify  $3 \times 4t$

6

Here is a list of numbers:

4    6    9    10    15    27    30    40

From the list, write down all the numbers that are powers of 3

2

Write 31% as a fraction

7

Change 4000 grams into kilograms

3

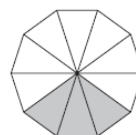
Here are four digits:

3    7    9    5

Write down the largest possible three digit number that can be made with three of the digits

8

What fraction of the shape is shaded?



4

Write down the number that is exactly halfway between 11 and 23

9

Work out  $\frac{1}{5}$  of 300

5

Write 0.22 as a percentage

10

Write down two factors of 18



## **WEEK 6 TASK 2**

**Estimated completion time = 45 minutes.**

**Answer all questions.**

**Write your answers in the spaces provided.**

**You must write down all the stages in your working.**

**1** Here is a 3-D shape.



(a) Write down the name of this 3-D shape.

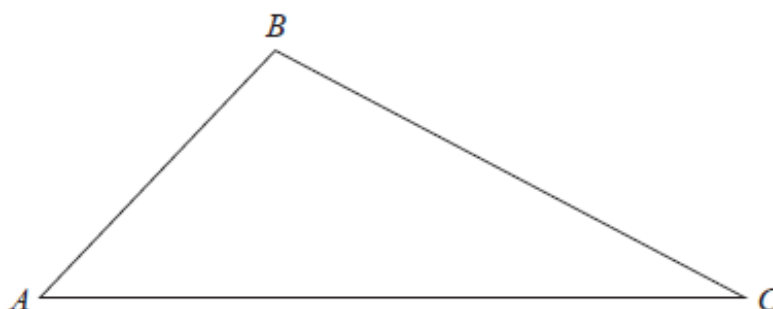
..... (1)

(b) In the space below, draw a sketch of a triangular prism.

(1)

**(Total for Question 1 is 2 marks)**

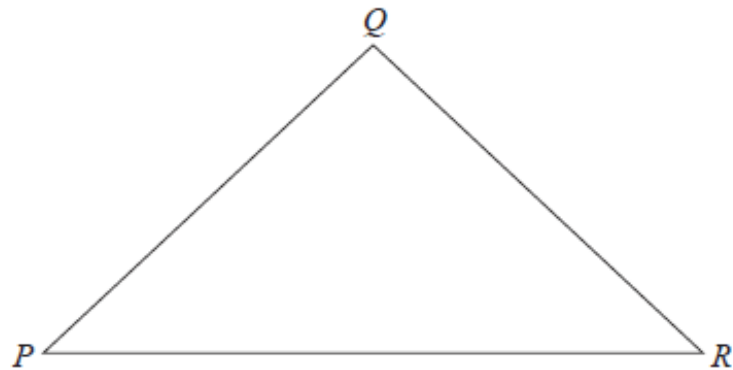
**2** Here is a triangle.



(a) Measure the length of  $AC$ .

..... cm  
(1)

Here is a different triangle.



$$QP = QR$$

(b) Write down the mathematical name of this triangle.

(1)

(Total for Question 2 is 2 marks)

3 240 people work at a factory.

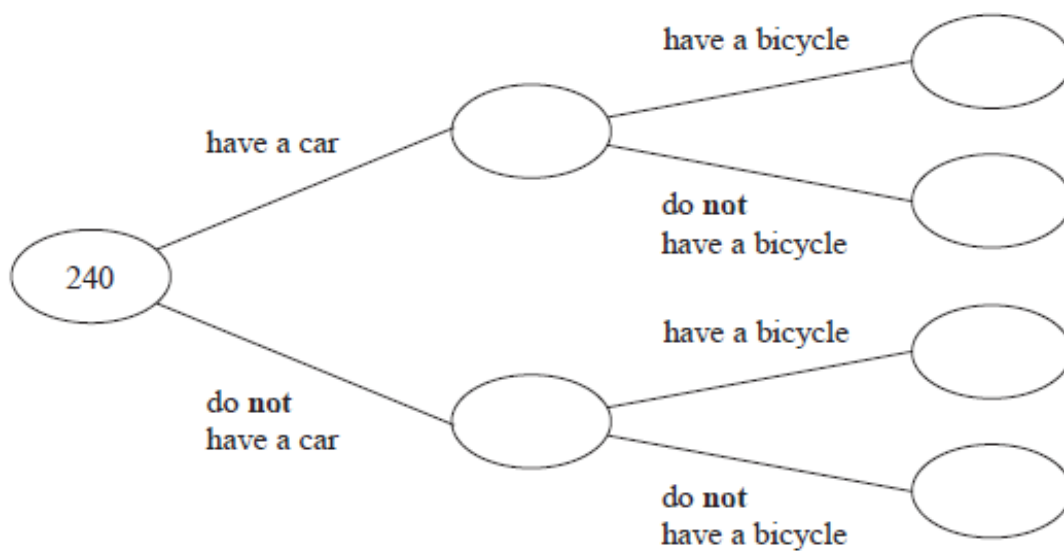
Of these people

150 have a car

110 have a bicycle

65 of the people who have a bicycle do **not** have a car.

(a) Use this information to complete the frequency tree.



(3)

(b) What percentage of the 150 people who have a car also have a bicycle?

..... %  
(2)

**(Total for Question 3 is 5 marks)**

---

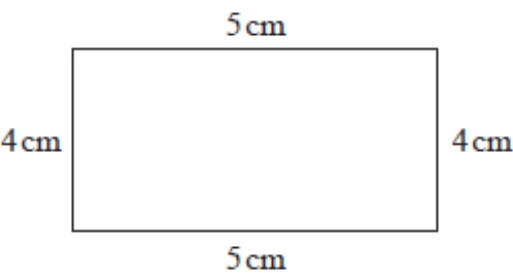
- \*4 Last year a family recycled 800 kg of household waste.  
57% of this waste was paper and glass.

weight of paper recycled : weight of glass recycled = 12 : 7

Calculate the weight of glass the family recycled.

..... kg  
**(Total for Question 4 is 3 marks)**

5 Milo is trying to find the area of this rectangle.



He writes,

“The area is 400 cm<sup>2</sup> because  $5 \times 4 \times 5 \times 4 = 400$ ”

(a) Explain what is wrong with Milo’s method.

.....

.....

.....

(1)

Anya works out the area of a shape.  
Her answer is 86 cm.

(b) Explain why her answer cannot be fully correct.

.....

.....

.....

(1)

(Total for Question 5 is 2 marks)

\*6 (a) Expand and simplify  $3(2y - 5) + 7(y + 2)$

.....

(2)



(b) Factorise fully  $6x^2 + 15x$

.....  
(2)

(Total for Question 6 is 4 marks)

---

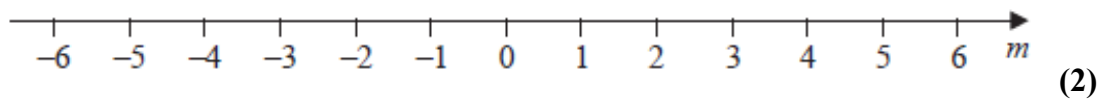
\*7  $-2 \leq n < 5$

$n$  is an integer.

(a) Write down the greatest possible value of  $n$ .

.....  
(1)

(b) On the number line below, show the inequality  $-4 \leq m < 1$



(2)  
(Total for Question 7 is 3 marks)

**\*8** Tamsin buys a house with a value of £150 000  
The value of Tamsin’s house increases by 4% each year.  
Rachel buys a house with a value of £160 000  
The value of Rachel’s house increases by 1.5% each year.  
At the end of 2 years, whose house has the greater value?  
You must show how you get your answer.

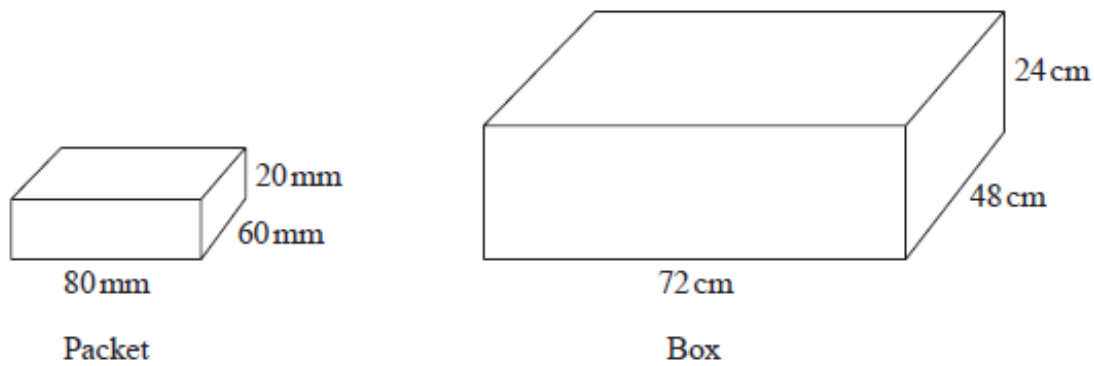
**(Total for Question 8 is 4 marks)**

---

**9** Paulo drives at an average speed of 56 km / h for 1 hour 45 minutes.  
Work out the distance Paulo drives.

..... km  
**(Total for Question 9 is 3 marks)**

10    Packets of sweets are put into boxes.



Each packet is a cuboid, 80 mm by 60 mm by 20 mm.

Each box is a cuboid, 72 cm by 48 cm by 24 cm.

Work out the greatest number of packets that can be put into each box.

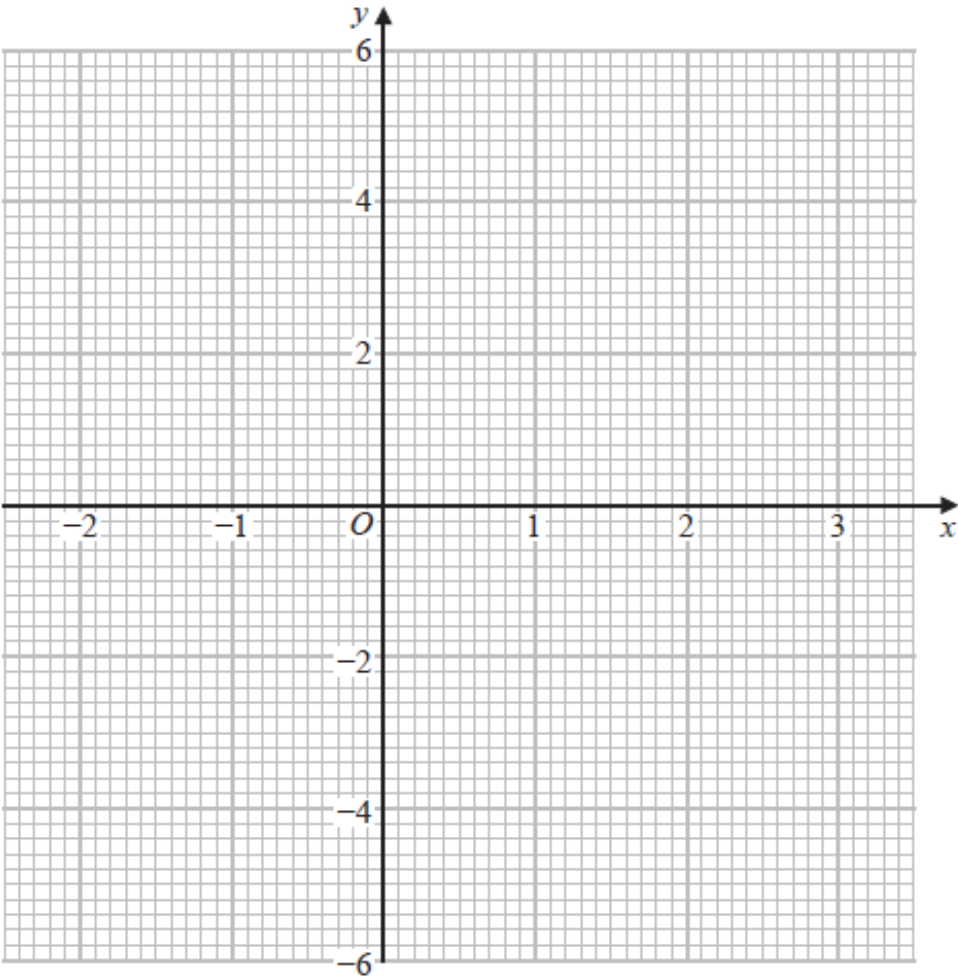
.....  
(Total for Question 10 is 4 marks)

11 (a) Complete the table of values for  $y = x^2 - x - 2$

|     |    |    |   |    |   |   |
|-----|----|----|---|----|---|---|
| $x$ | -2 | -1 | 0 | 1  | 2 | 3 |
| $y$ | 4  |    |   | -2 |   |   |

(2)

(b) On the grid, draw the graph of  $y = x^2 - x - 2$  for values of  $x$  from -2 to 3



(2)

(Total for Question 11 is 4 marks)

12 Rima is going to roll a fair 6-sided dice.

Choose the word that best describes the probability that the dice will land on the number 3

|            |          |       |        |         |
|------------|----------|-------|--------|---------|
| impossible | unlikely | evens | likely | certain |
|------------|----------|-------|--------|---------|

(Total for Question 12 is 1 mark)

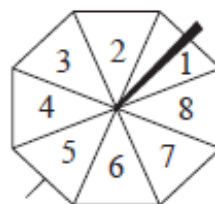
**\*13** Solve  $5x - 14 = 52 - x$

$x =$  .....

**(Total for Question 13 is 3 marks)**

---

**14** Here is a fair ordinary dice and a fair 8-sided spinner.



Charlie throws the dice once and spins the spinner once.

Is Charlie more likely to get

- a number less than 3 on the dice
- or** a number greater than 5 on the spinner?

You must show all your working.

**(Total for Question 14 is 3 marks)**

**\*15** Andrew invests £4500 in a savings account for 2 years.  
The account pays compound interest at a rate of 3.4% per year.  
Calculate how much Andrew has in this savings account at the end of the 2 years.

£.....

(Total for Question 15 is 2 marks)

---

**TOTAL FOR PAPER IS 45 MARKS**

## **WEEK 6 TASK 3**

# One Marker Starters

Includes Summer 2017 – Summer 2024 Exam Papers



(Unless otherwise stated)



Pearson

1

Simplify  $2 \times t \times y \times 9$

6

A quadrilateral has 4 right angles and 4 sides of equal length.

Write down the mathematical name of this quadrilateral

2

Here are the first four terms of a number sequence:

2      5      11      23

The rule to continue this sequence is multiply the previous term by 2 and then add 1

Work out the 5th term of this sequence

7

Write down the value of the 9 in the number 27.963

3

Write  $\frac{3}{4}$  as a decimal

8

Write down a number that is less than -5

4

Write the number three thousand one hundred and seven in figures

9

Work out the value of  $\sqrt{17.64}$



5

Write 6184 correct to the nearest hundred

10

Change 5570 g into kg





## **WEEK 6 TASK 4**

**Estimated completion time = 45 minutes.**

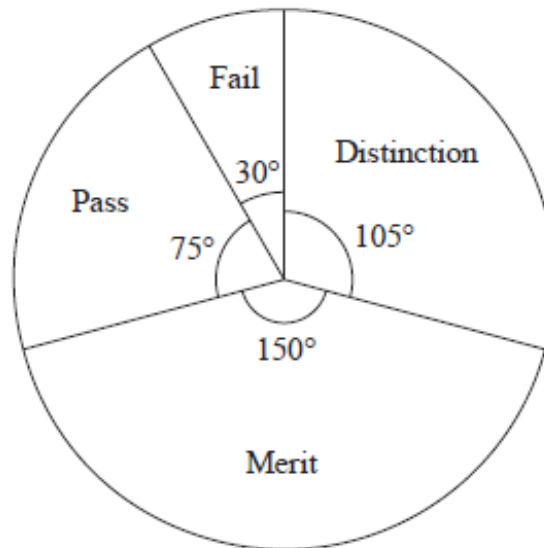
**Answer all questions.**

**Write your answers in the spaces provided.**

**You must write down all the stages in your working.**

- 1** Some students took a guitar exam.

The pie chart shows information about the grades the students got.



- (a) Write down the modal grade.

.....  
(1)

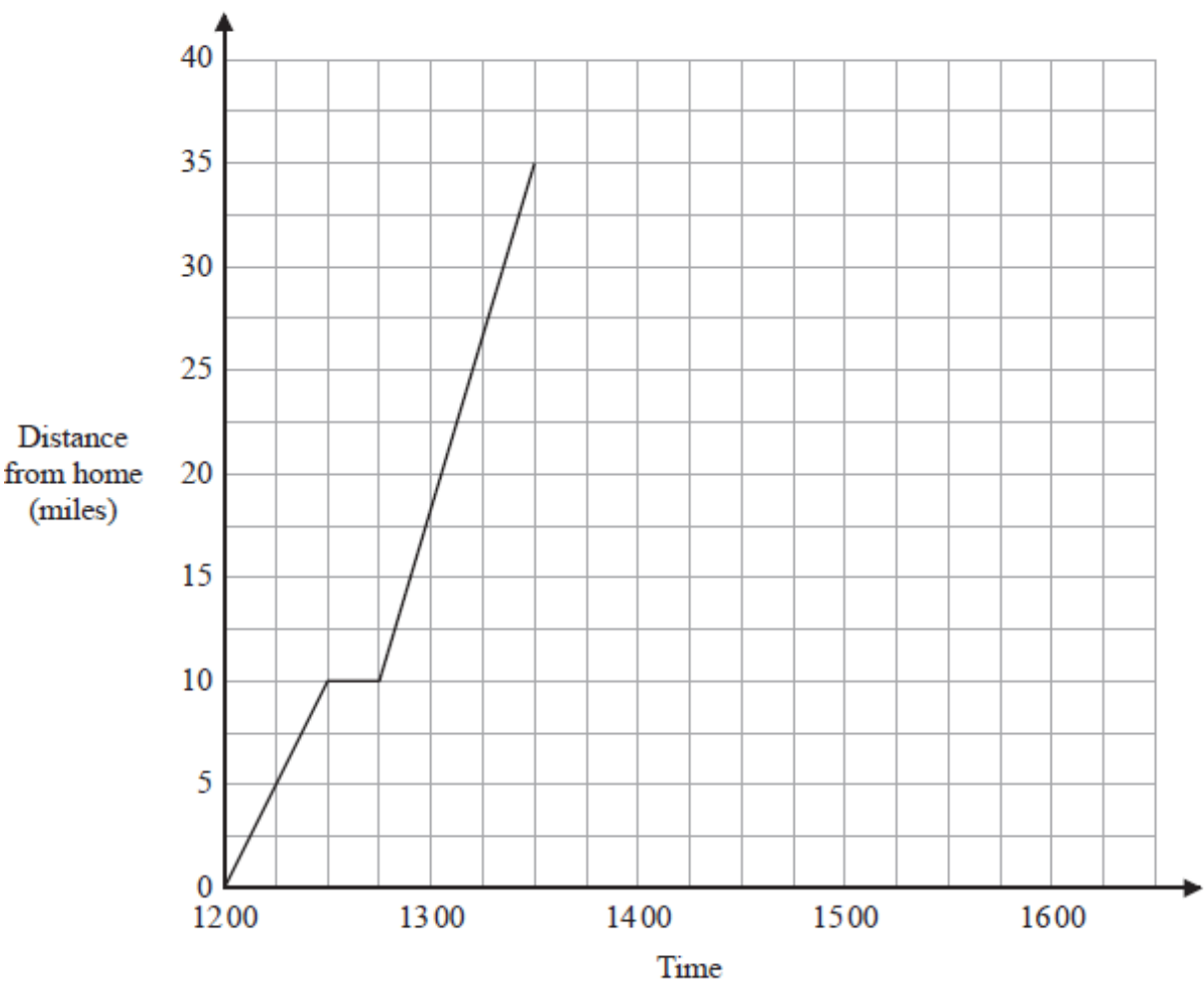
7 students got distinction.

- (b) Work out the total number of students who took the guitar exam.

.....  
(3)

**(Total for Question 1 is 4 marks)**

2     Rowena drove from her home to a beach.  
Here is a travel graph for her journey.



Rowena stopped at a cafe on her way to the beach.

(a) (i) How many minutes did Rowena take to drive to the cafe?

..... minutes  
(1)

(ii) Write down the distance from Rowena’s home to the cafe.

..... miles  
(1)

Rowena stayed at the beach for  $1\frac{1}{2}$  hours.

She then drove home without stopping.

Rowena arrived home at 16 00

(b) On the grid, complete the travel graph.

(2)

(c) Work out the average speed for the journey from the beach to Rowena's home.

..... miles per hour

(1)

**(Total for Question 2 is 5 marks)**

---

**3** Write down the value of the 9 in the number 27.963

.....

**(Total for Question 14 is 1 mark)**

---

**\*4** (a) Simplify  $(m^2)^3$

.....

(1)

(b) Simplify  $x^5 \times x^8$

.....

(1)

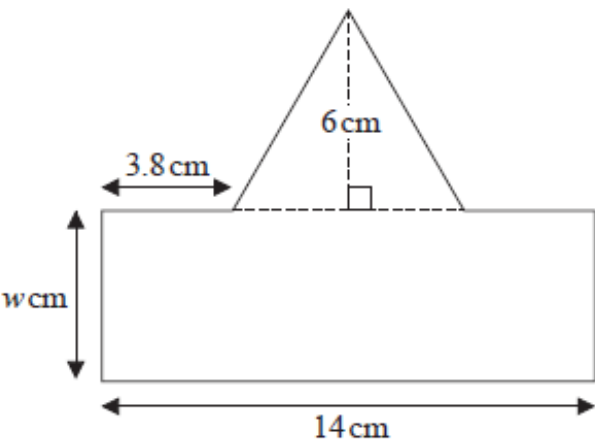
(c) Expand  $4p(p^2 + 3p)$

.....

(2)

**(Total for Question 3 is 4 marks)**

5 Here is a shape made from a rectangle and a triangle.



The shape has exactly one line of symmetry.

The area of the rectangle is 3.5 times the area of the triangle.

The width of the rectangle is  $w$  cm.

Work out the value of  $w$ .

You must show all your working.

$w =$  .....

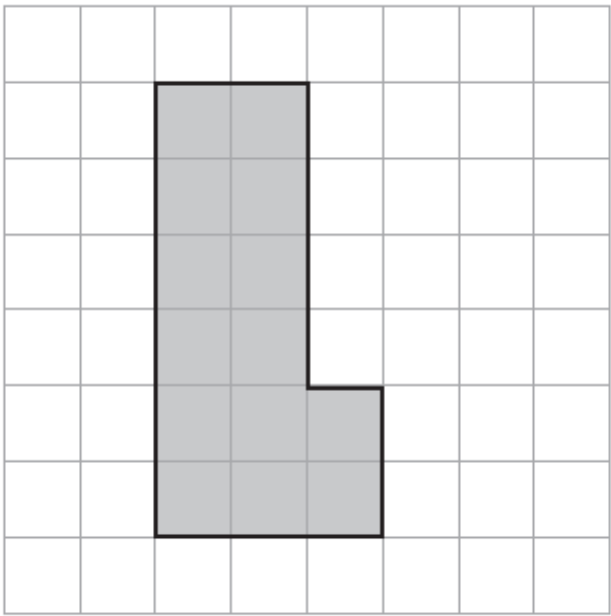
(Total for Question 4 is 5 marks)

6 Solve  $\frac{x}{7} + 9 = 4$

$x =$  .....

(Total for Question 5 is 2 marks)

7 The diagram shows a shape on a centimetre grid.



(a) Find the area of the shape.

..... cm<sup>2</sup>  
(1)

(b) Find the perimeter of the shape.

..... cm  
(1)

(Total for Question 6 is 2 marks)

\*8 (a) Write 468 000 in standard form.

.....  
(1)

(b) Write  $5.037 \times 10^{-4}$  as an ordinary number.

.....  
(1)

(Total for Question 7 is 2 marks)

**\*9** Riley travelled by car and by aeroplane.  
He travelled 143 miles by car at an average speed of 55 miles per hour.  
Riley then travelled for 5 hours and 20 minutes by aeroplane.  
Work out, in hours and minutes, Riley’s total travelling time.

..... hours ..... minutes

**(Total for Question 8 is 3 marks)**

---

10 The diagram shows the position of town  $T$ .



Town  $R$  is 55 km from town  $T$  on a bearing of  $065^\circ$

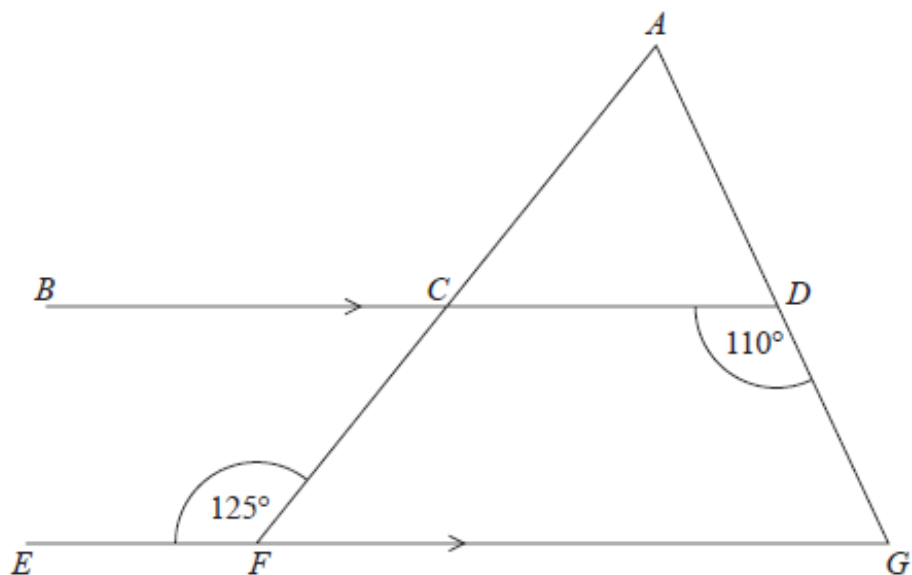
Mark the position of town  $R$  with a cross ( $\times$ ).

Use a scale of 1 cm to 10 km.

(Total for Question 9 is 2 marks)



- \*11**  $ACF$  and  $ADG$  are straight lines.  
 $BCD$  and  $EFG$  are parallel lines.



Show that triangle  $ACD$  is isosceles.  
Give a reason for each stage of your working.

(Total for Question 10 is 5 marks)

- \*12** A company orders a large number of plates from a factory.  
It would take 30 hours to make all the plates using 4 machines.  
How many machines are needed to make all the plates in 6 hours?

.....  
(Total for Question 11 is 2 marks)

---

- 13** Write  $(9 \times 10^4) : (4.5 \times 10^6)$  in the form  $1 : n$  where  $n$  is an integer.

.....  
(2)

(Total for Question 12 is 2 marks)

---

- \*14** A solid cuboid is made of metal.  
The metal has a density of  $9 \text{ g/cm}^3$   
The volume of the cuboid is  $72 \text{ cm}^3$   
Work out the mass of the cuboid.

..... g  
(Total for Question 13 is 2 marks)

---

**15** Jenny invests £3000 for 6 years at  $y\%$  simple interest per year.  
At the end of the 6 years, Jenny has received a total of £450 in interest.  
Work out the value of  $y$ .

$y = \dots\dots\dots$

**(Total for Question 15 is 3 marks)**

---

**TOTAL FOR PAPER IS 44 MARKS**

## **WEEK 6 TASK 5**

# One Marker Starters

Includes Summer 2017 – Summer 2024 Exam Papers



(Unless otherwise stated)



Pearson

1

Work out the value of  $2^4$

6

Change 5000 millilitres to litres

2

Simplify  $12p \div 4$

7

Write the number 18 475 correct to the nearest thousand

3

Write down a prime number that is between 20 and 30

8

Here are the first 4 terms of a sequence

2   9   16   23

Write down the next term and explain how you got your answer

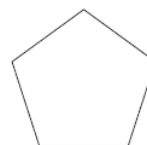
4

Work out

$$2 \times 7 + 10$$

9

Here is a polygon



Write down the mathematical name of this polygon

5

Write 0.3 as a percentage

10

Here is a list of numbers

2      4      4      7      8

Work out the range of these numbers



# MARKSCHEMES

## **WEEK 1 TASK 1**

# One Marker Starters

Includes Summer 2017 – Summer 2024 Exam Papers



(Unless otherwise stated)



Pearson

1

Simplify  $3 \times 4t$

**$12t$**

6

Here is a list of numbers:

4    6    9    10    15    27    30    40

From the list, write down all the numbers that are powers of 3

**9 and 27**

2

Write 31% as a fraction

**$\frac{31}{100}$   
or equivalent**

7

Change 4000 grams into kilograms

**4 kilograms**

3

Here are four digits:

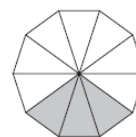
3    7    9    5

Write down the largest possible three digit number that can be made with three of the digits

**975**

8

What fraction of the shape is shaded?



**$\frac{3}{10}$  or equivalent**

4

Write down the number that is exactly halfway between 11 and 23

**17**

9

Work out  $\frac{1}{5}$  of 300

**60**

5

Write 0.22 as a percentage

**22%**

10

Write down two factors of 18

**Any two from**

**1, 2, 3, 6, 9 or 18**



## **WEEK 6 TASK 2**

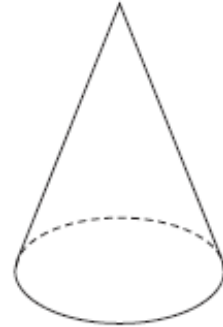
Answer all questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Here is a 3-D shape.

(a) Write down the name of this 3-D shape.

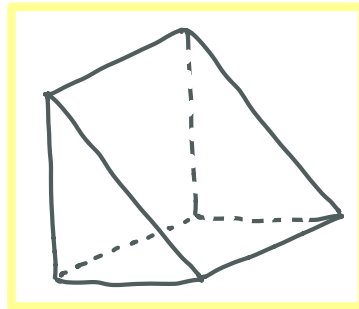


cone

1 mark

(1)

(b) In the space below, draw a sketch of a triangular prism.

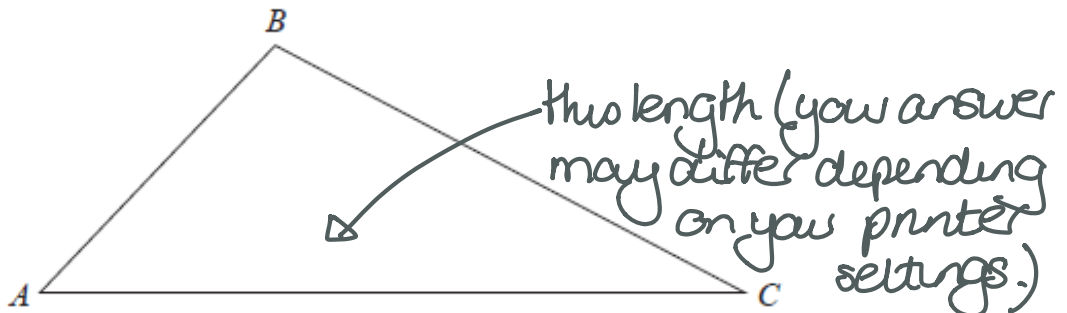


1 mark

(1)

(Total for Question 1 is 2 marks)

2 Here is a triangle.



(a) Measure the length of AC.

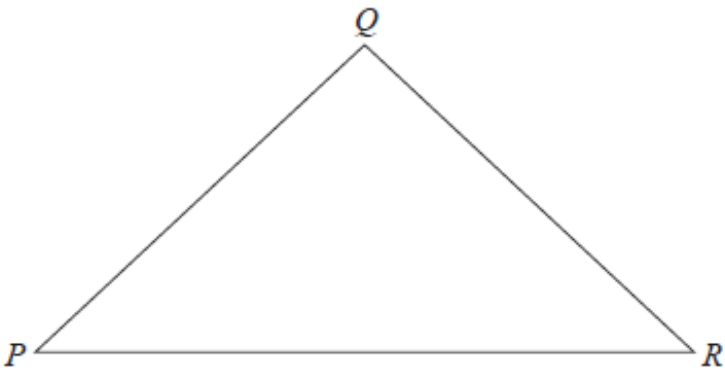
9.3

1 mark

cm  
(1)

Range accepted 9.1 to 9.5

Here is a different triangle.



$QP = QR$

(b) Write down the mathematical name of this triangle.

isosceles 1 mark

(1)

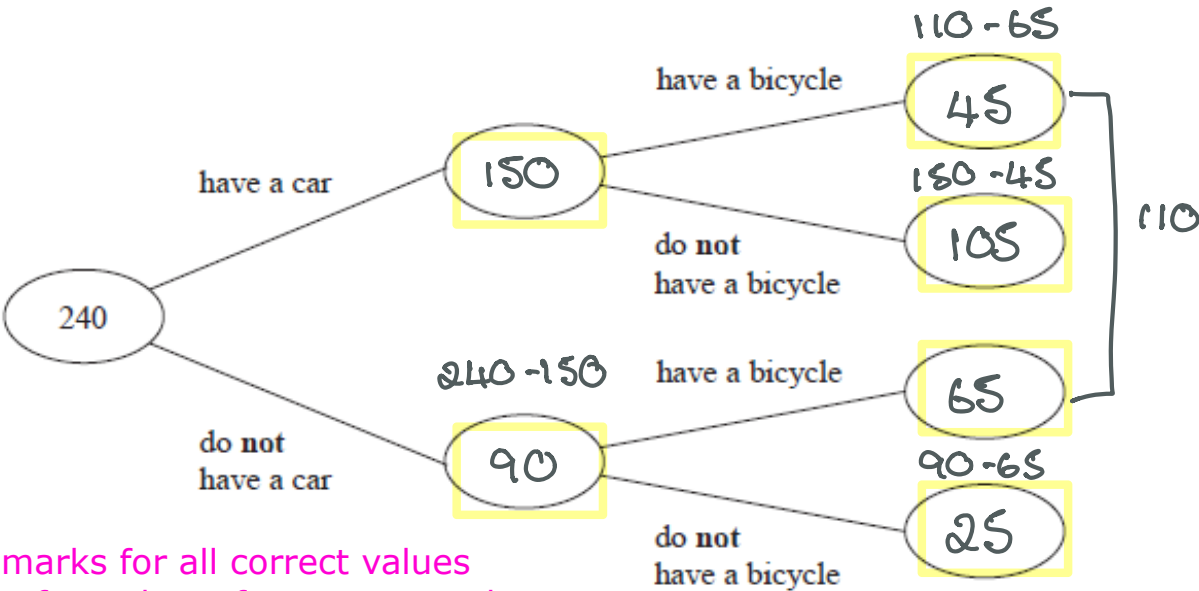
(Total for Question 2 is 2 marks)

3 240 people work at a factory.

Of these people

- 150 have a car
- 110 have a bicycle
- 65 of the people who have a bicycle do **not** have a car.

(a) Use this information to complete the frequency tree.



3 marks for all correct values  
2 marks for at least four correct values  
1 mark for at least one correct value

(3)

(b) What percentage of the 150 people who have a car also have a bicycle?

$$\frac{45}{150} \times 100$$

1 mark

Final mark

$$\frac{30}{\dots\dots\dots} \%$$

(2)

(Total for Question 3 is 5 marks)

- \*4 Last year a family recycled 800 kg of household waste.  
57% of this waste was paper and glass.

weight of paper recycled : weight of glass recycled = 12 : 7

Calculate the weight of glass the family recycled.

800 kg

$$P + G = 57\%$$

$$0.57 \times 800 = 456 \text{ kg}$$

1 mark

|       |   |       |       |
|-------|---|-------|-------|
| Paper | : | Glass | Total |
| 12    | : | 7     | 19    |



$$7 \times 24 = 168$$

1 mark

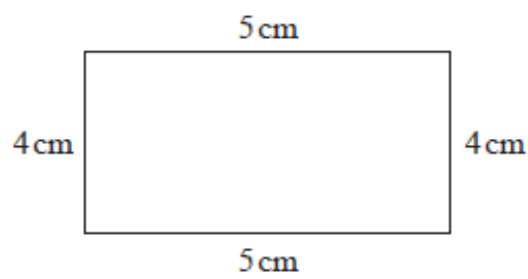
$$456 \div 19 = 24$$

Final mark

$$\frac{168}{\dots\dots\dots} \text{ kg}$$

(Total for Question 4 is 3 marks)

5 Milo is trying to find the area of this rectangle.



He writes,

“The area is 400 cm<sup>2</sup> because  $5 \times 4 \times 5 \times 4 = 400$ ”

(a) Explain what is wrong with Milo’s method.

he should have multiplied  $5 \times 4$

1 mark

(1)

Anya works out the area of a shape.

Her answer is 86 cm.

(b) Explain why her answer cannot be fully correct.

The units should be cm<sup>2</sup> not cm

1 mark

(1)

(Total for Question 5 is 2 marks)

\*6 (a) Expand and simplify  $3(2y - 5) + 7(y + 2)$

1 mark for either of these

$6y - 15$

+

$7y + 14$

$= 6y + 7y - 15 + 14$

$13y - 1$

Final mark

(2)

(b) Factorise fully  $6x^2 + 15x$

$$\begin{array}{|c|} \hline 3 \times 2 \\ \hline x \times x \\ \hline \end{array} \quad \begin{array}{|c|} \hline 3 \times 5 \\ \hline x \\ \hline \end{array}$$

$$3x(2x + 5) \quad 2 \text{ marks}$$

(2)

(Total for Question 6 is 4 marks)

\*7  $-2 \leq n < 5$

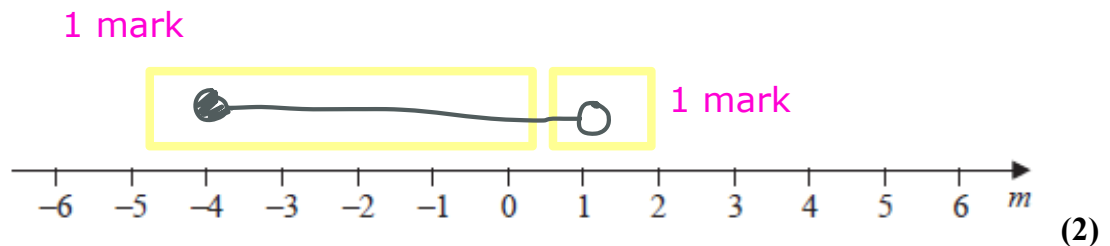
$n$  is an integer.

(a) Write down the greatest possible value of  $n$ .

$$4 \quad 1 \text{ mark}$$

(1)

(b) On the number line below, show the inequality  $-4 \leq m < 1$



(Total for Question 7 is 3 marks)

\*8 Tamsin buys a house with a value of £150 000  
 The value of Tamsin's house increases by 4% each year.  
 Rachel buys a house with a value of £160 000  
 The value of Rachel's house increases by 1.5% each year.  
 At the end of 2 years, whose house has the greater value?  
 You must show how you get your answer.

Tamsin

$150\,000 \times 1.04 = 156\,000$ 
1 mark

$156\,000 \times 1.04 = 162\,240$ 
1 mark

Rachel

$160\,000 \times 1.015 = 162\,400$ 
1 mark

$162\,400 \times 1.015 = 164\,836$

$Rachel \quad 164\,836 > 162\,240$ 
Final mark

(Total for Question 8 is 4 marks)

9 Paulo drives at an average speed of 56 km / h for 1 hour 45 minutes.  
 Work out the distance Paulo drives.

$1\text{ hour }45\text{ mins} = 1\frac{3}{4}\text{ hours} = 1.75\text{ hours}$ 
1 mark

1 mark

$56\text{ miles} = 1\text{ hour}$ 
 $\times 1.75$

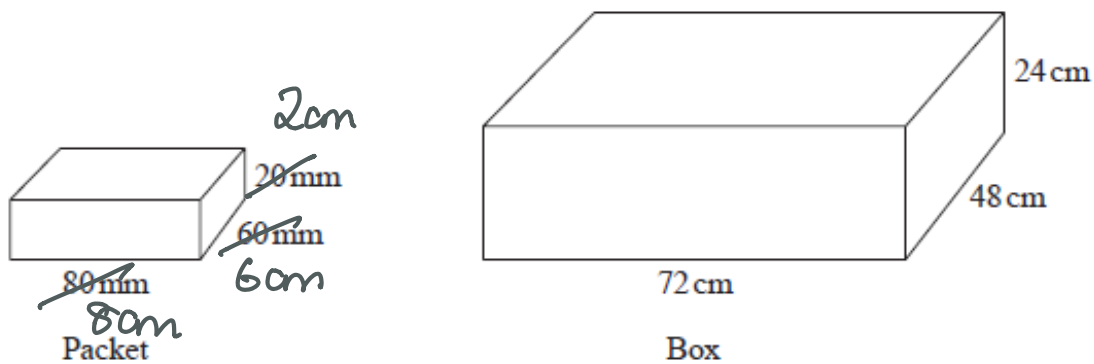
$98\text{ miles} = 1.75\text{ hours}$

$98$ 
Final mark

km

(Total for Question 9 is 3 marks)

10    Packets of sweets are put into boxes.



Each packet is a cuboid, 80 mm by 60 mm by 20 mm.  
Each box is a cuboid, 72 cm by 48 cm by 24 cm.

Work out the greatest number of packets that can be put into each box.

Packet volume =  $2 \times 6 \times 8 = 96 \text{ cm}^3$     1 mark

Box volume =  $72 \times 48 \times 24 = 82944 \text{ cm}^3$     1 mark

greatest number =  $82944 \div 96$     1 mark  
= 864

**864**    Final mark

(Total for Question 10 is 4 marks)

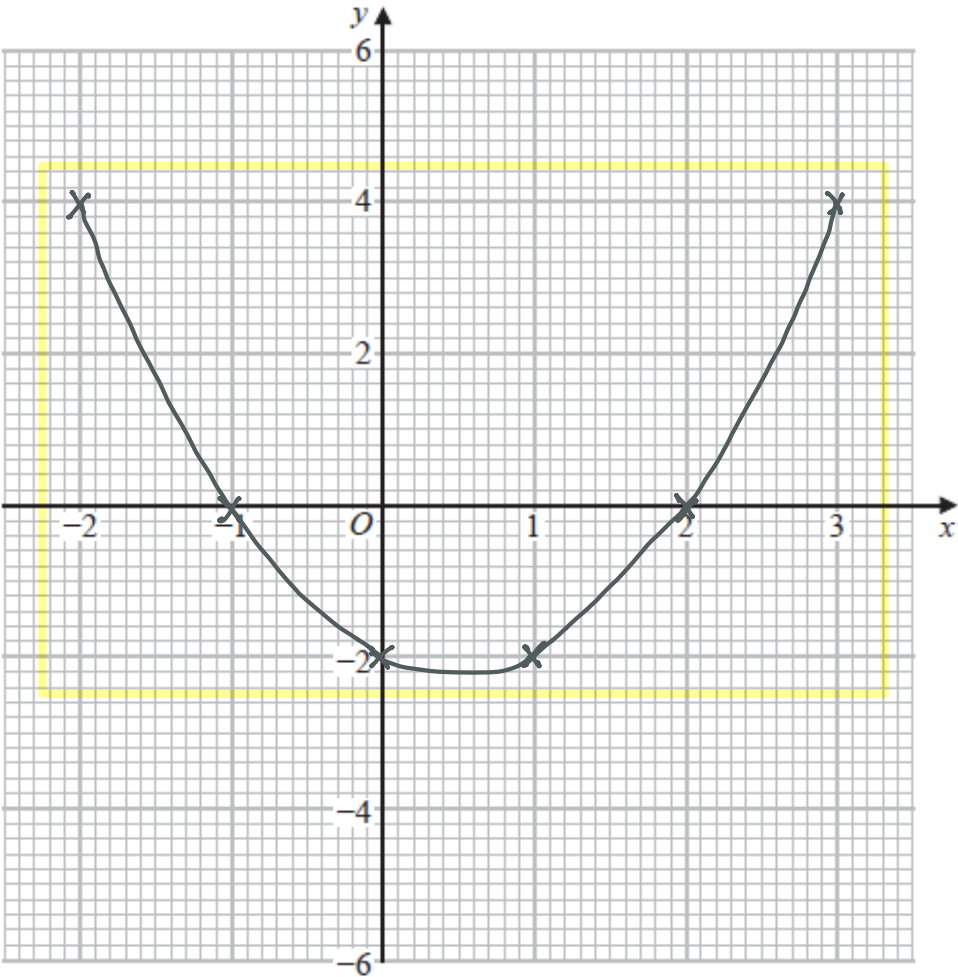


11 (a) Complete the table of values for  $y = x^2 - x - 2$  2 marks for all four correct values  
1 mark for two or three correct values

|     |    |    |    |    |   |   |
|-----|----|----|----|----|---|---|
| $x$ | -2 | -1 | 0  | 1  | 2 | 3 |
| $y$ | 4  | 0  | -2 | -2 | 0 | 4 |

(2)

(b) On the grid, draw the graph of  $y = x^2 - x - 2$  for values of  $x$  from -2 to 3



(2)

2 marks for fully correct graph  
1 mark for plotting at least four correct points (Total for Question 11 is 4 marks)

12 Rima is going to roll a fair 6-sided dice.

Choose the word that best describes the probability that the dice will land on the number 3

|            |          |       |        |         |
|------------|----------|-------|--------|---------|
| impossible | unlikely | evens | likely | certain |
|------------|----------|-------|--------|---------|

unlikely 1 mark  
(Total for Question 12 is 1 mark)

\*13 Solve  $5x - 14 = 52 - x$

$$\begin{array}{rcl} 5x - 14 & = & 52 - x \\ +x & & +x \end{array}$$
$$\begin{array}{rcl} 6x - 14 & = & 52 \\ +14 & & +14 \end{array}$$

1 mark

$$\begin{array}{rcl} 6x & = & 66 \\ \div 6 & & \div 6 \end{array}$$

1 mark

$$x = 11$$

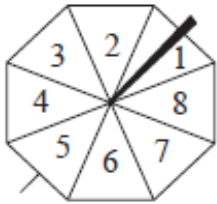
$x =$ 

11

Final mark

(Total for Question 13 is 3 marks)

14 Here is a fair ordinary dice and a fair 8-sided spinner.



Charlie throws the dice once and spins the spinner once.

Is Charlie more likely to get

- a number less than 3 on the dice
- or a number greater than 5 on the spinner?

You must show all your working.

Dice    numbers less than 3  
1, 2

$$= \frac{1}{3}$$

1 mark

Spinner    greater than 5  
6, 7, 8

$$= \frac{3}{8}$$

1 mark

$\frac{1}{3}$   
 $\times 8$   
 $\frac{8}{24}$

$\frac{3}{8}$   
 $\times 3$   
 $\frac{9}{24}$

Final mark

A number greater than 5  
on the spinner is more likely

(Total for Question 14 is 3 marks)

**\*15** Andrew invests £4500 in a savings account for 2 years.  
The account pays compound interest at a rate of 3.4% per year.  
Calculate how much Andrew has in this savings account at the end of the 2 years.

$4500 \times 1.034 = 4653$

1 mark

$$4653 \times 1.034 = 4811.20$$

Final mark

£.....

4811.20

(Total for Question 15 is 2 marks)

TOTAL FOR PAPER IS 45 MARKS

## **WEEK 6 TASK 3**

# One Marker Starters

Includes Summer 2017 – Summer 2024 Exam Papers



(Unless otherwise stated)

1

Simplify  $2 \times t \times y \times 9$

18ty

6

A quadrilateral has 4 right angles and 4 sides of equal length.

Write down the mathematical name of this quadrilateral

Square

2

Here are the first four terms of a number sequence:

2      5      11      23

The rule to continue this sequence is multiply the previous term by 2 and then add 1

Work out the 5th term of this sequence

47

7

Write down the value of the 9 in the number 27.963

0.9

3

Write  $\frac{3}{4}$  as a decimal

0.75

8

Write down a number that is less than -5

e.g. -6

4

Write the number three thousand one hundred and seven in figures

3107

9

Work out the value of  $\sqrt{17.64}$

4.2



5

Write 6184 correct to the nearest hundred

6200

10

Change 5570 g into kg

5.57 kg

## **WEEK 6 TASK 4**

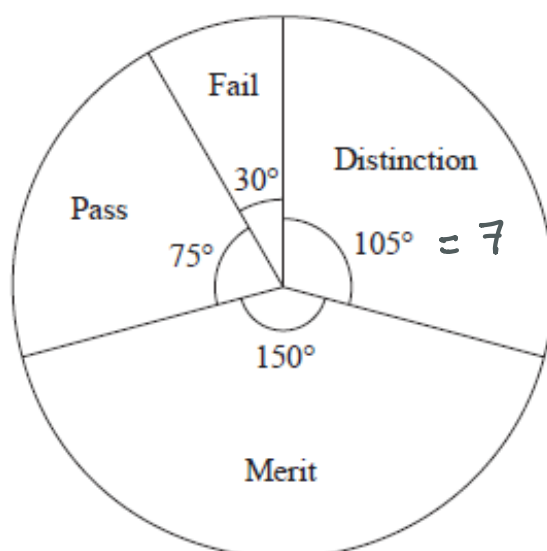
Answer all questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

- 1 Some students took a guitar exam.

The pie chart shows information about the grades the students got.



- (a) Write down the modal grade.

merit

1 mark

(1)

7 students got distinction.

- (b) Work out the total number of students who took the guitar exam.

$$7 \text{ people} = 105^\circ$$

$$1 \text{ person} = 105 \div 7 = 15^\circ$$

1 mark

$$360 \div 15 = 24$$

1 mark

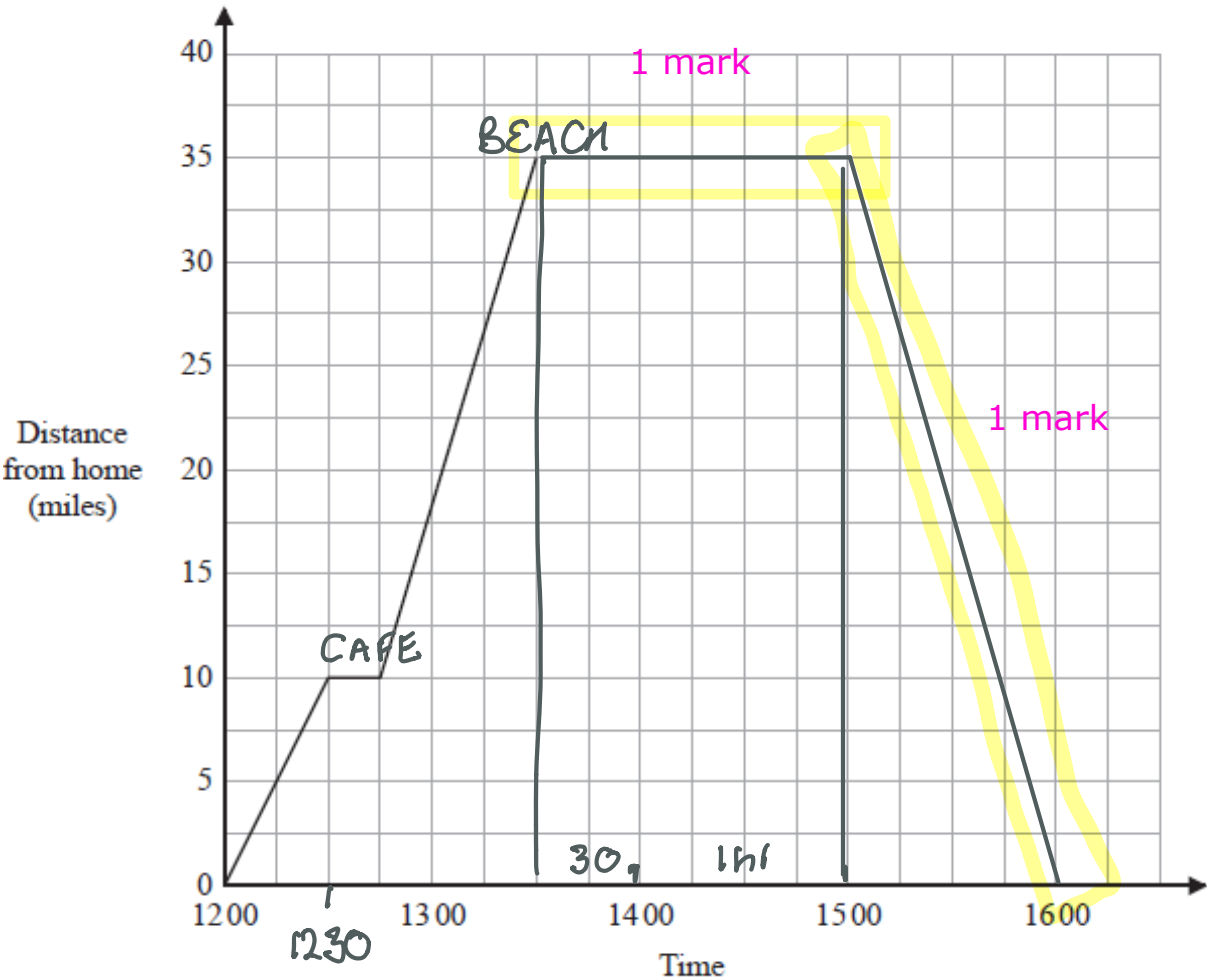
24

Final mark

(3)

(Total for Question 1 is 4 marks)

2 Rowena drove from her home to a beach.  
Here is a travel graph for her journey.



Rowena stopped at a cafe on her way to the beach.

(a) (i) How many minutes did Rowena take to drive to the cafe?

30 minutes (1) 1 mark

(ii) Write down the distance from Rowena’s home to the cafe.

10 miles (1) 1 mark



Rowena stayed at the beach for  $1\frac{1}{2}$  hours.

She then drove home without stopping.

Rowena arrived home at 16 00

(b) On the grid, complete the travel graph.

see graph

(2)

(c) Work out the average speed for the journey from the beach to Rowena's home.

1 hour = 35 miles

35

1 mark

miles per hour

(1)

(Total for Question 2 is 5 marks)

3 Write down the value of the 9 in the number 27.963

1 mark for any of these

$\frac{9}{10}$ , 0.9 or tenths.

(Total for Question 3 is 1 mark)

\*4 (a) Simplify  $(m^2)^3$

$m^6$

1 mark

(1)

(b) Simplify  $x^5 \times x^8$

$x^{13}$

1 mark

(1)

(c) Expand  $4p(p^2 + 3p)$

$4p \times p^2 = 4p^3$

1 mark for either of these

$4p \times 3p = 12p^2$

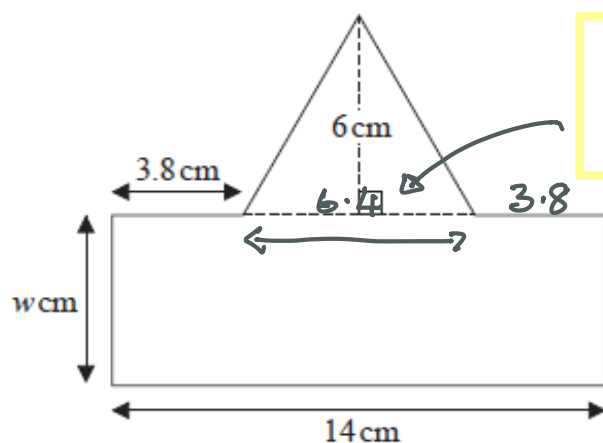
$4p^3 + 12p^2$

Final mark

(2)

(Total for Question 4 is 4 marks)

5 Here is a shape made from a rectangle and a triangle.



$$14 - (3.8 + 3.8) = 6.4$$

1 mark

The shape has exactly one line of symmetry.  
The area of the rectangle is 3.5 times the area of the triangle.  
The width of the rectangle is  $w$  cm.  
Work out the value of  $w$ .  
You must show all your working.

$$\text{rectangle} = 3.5 \times \text{triangle}$$

$$14 \times w = 3.5 \times \frac{1}{2} \times 6.4 \times 6$$

1 mark

$$14w = 3.5 \times 19.2$$

1 mark

$$14w = 67.2$$

1 mark

$$w = \frac{67.2}{14}$$

$$w = 4.8$$

Final mark

(Total for Question 5 is 5 marks)

6 Solve  $\frac{x}{7} + 9 = 4$

$$\frac{x}{7} + 9 = 4$$

$$\frac{x}{7} = -5$$

1 mark

$$x \times 7 = -5 \times 7$$

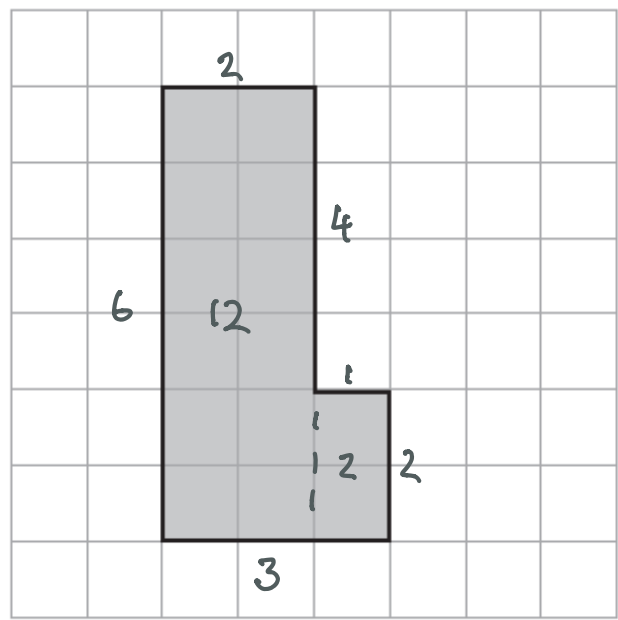
$$x = -35$$

$$x = -35$$

Final mark

(Total for Question 6 is 2 marks)

7 The diagram shows a shape on a centimetre grid.



(a) Find the area of the shape.

14 1 mark cm<sup>2</sup>  
(1)

(b) Find the perimeter of the shape.

18 1 mark cm  
(1)

(Total for Question 7 is 2 marks)

\*8 (a) Write 468 000 in standard form.

$4.68 \times 10^5$  1 mark  
(1)

(b) Write  $5.037 \times 10^{-4}$  as an ordinary number.

0.0005037 1 mark  
(1)

(Total for Question 8 is 2 marks)

\*9 Riley travelled by car and by aeroplane.

He travelled 143 miles by car at an average speed of 55 miles per hour.

Riley then travelled for 5 hours and 20 minutes by aeroplane.

Work out, in hours and minutes, Riley’s total travelling time.

$$\begin{array}{r} 55 \text{ miles} = 1 \text{ hour} \\ \div 55 \\ \times 143 \\ \hline 143 \text{ miles} \end{array}$$

$$= 60 \text{ mins}$$

$$\div 55$$
$$\times 143$$

1 mark

$$143 \text{ miles}$$

$$= 156 \text{ mins}$$

1 mark

$156 \text{ mins} = 2 \text{ hrs } 36 \text{ mins}$

$\text{Total time} = 2 \text{ hrs } 36 \text{ mins} + 5 \text{ hrs } 20 \text{ mins}$

$$\begin{array}{c} 7 \\ \hline \end{array}$$

hours

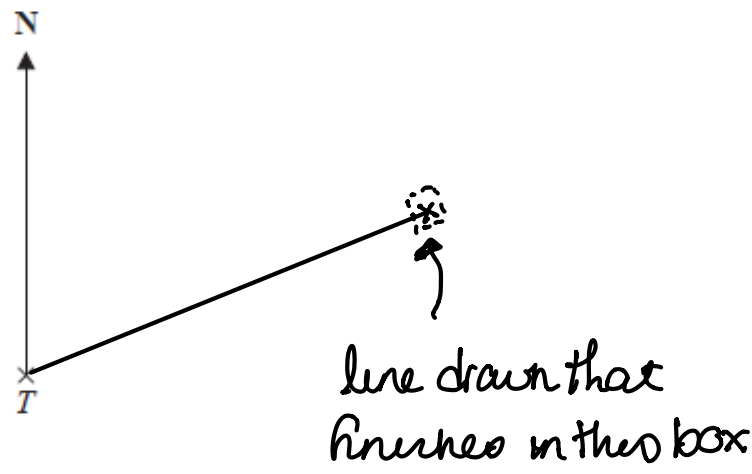
$$\begin{array}{c} 56 \\ \hline \end{array}$$

minutes

Final mark

(Total for Question 9 is 3 marks)

10 The diagram shows the position of town *T*.



1 mark for a line 5.3 to 5.7 cm away from T in any direction

1 mark for a line of any length on the same angle ie 65 degrees (+\ - 2 degrees) as the line above)

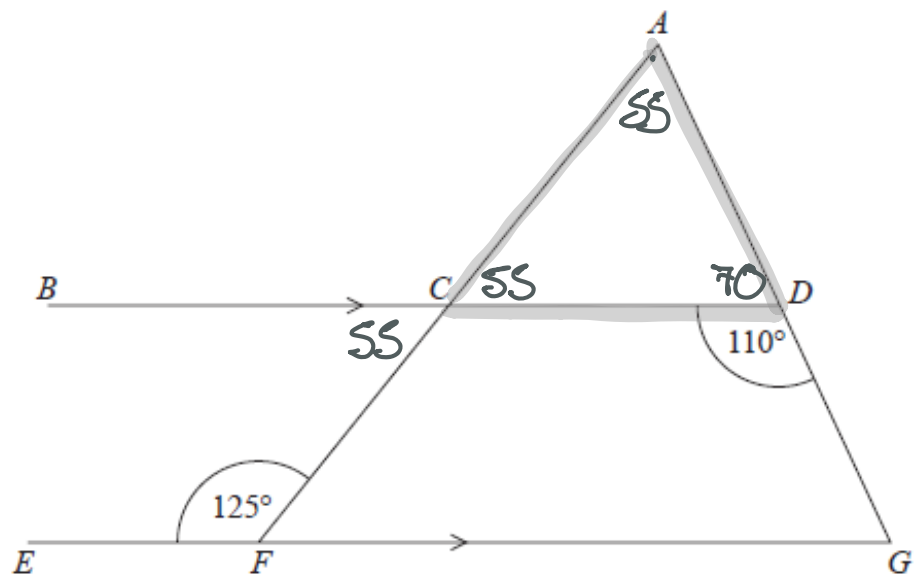
Town *R* is 55 km from town *T* on a bearing of 065°

Mark the position of town *R* with a cross (×).

Use a scale of 1 cm to 10 km.

(Total for Question 10 is 2 marks)

- \*11  $ACF$  and  $ADG$  are straight lines.  
 $BCD$  and  $EFG$  are parallel lines.



Show that triangle  $ACD$  is isosceles.  
 Give a reason for each stage of your working.

$\angle ADC = 70^\circ \quad 180 - 110 = 70$ 
1 mark

angles on a straight line = 180

$\angle BCF = 180 - 125 = 55$ 
1 mark

cointerior angles add up to 180°

$\angle ACD = \angle BCF = 55$

vertically opposite angles are equal

$\angle CAD = 180 - (55 + 70) = 55$ 
1 mark

so triangle  $ACD$  is isosceles as two angles are equal.

(Total for Question 11 is 5 marks)

Also 1 mark for a reason linked to parallel lines

AND

1 mark for another valid reason

- \*12** A company orders a large number of plates from a factory.  
It would take 30 hours to make all the plates using 4 machines.  
How many machines are needed to make all the plates in 6 hours?

30 hours = 4 machines

$\div 5$

6 hours = 20 machines

inverse proportion!

Final mark

**(Total for Question 12 is 2 marks)**

- 13** Write  $(9 \times 10^4) : (4.5 \times 10^6)$  in the form  $1 : n$  where  $n$  is an integer.

90000 : 4500000

$$\begin{array}{r} 9 : 450 \\ \div 9 \qquad \div 9 \\ 1 : 50 \end{array}$$

1 : 50 Final mark

---

(2)

**(Total for Question 13 is 2 marks)**

- \*14** A solid cuboid is made of metal.  
The metal has a density of  $9 \text{ g/cm}^3$   
The volume of the cuboid is  $72 \text{ cm}^3$   
Work out the mass of the cuboid.

$$\text{Density} = \frac{\text{mass}}{\text{volume}}$$

mass =  $72 \times 9$  1 mark

**648** Final mark g  
(Total for Question 14 is 2 marks)

15 Jenny invests £3000 for 6 years at y% simple interest per year.  
At the end of the 6 years, Jenny has received a total of £450 in interest.  
Work out the value of y.

1 mark

$$450 \div 6 = 75 \text{ per year}$$

1 mark

$$\frac{75}{3000} \times 100 = 2.5$$

y = 2.5 Final mark

(Total for Question 15 is 3 marks)

TOTAL FOR PAPER IS 44 MARKS



## **WEEK 6 TASK 5**

# One Marker Starters

Includes Summer 2017 – Summer 2024 Exam Papers



(Unless otherwise stated)

1

Work out the value of  $2^4$

16

6

Change 5000 millilitres to litres

5 litres

2

Simplify  $12p \div 4$

3p

7

Write the number 18 475 correct to the nearest thousand

18 000

3

Write down a prime number that is between 20 and 30

23 or 29

8

Here are the first 4 terms of a sequence

2 9 16 23

Write down the next term and explain how you got your answer

30

Add 7 to each term

4

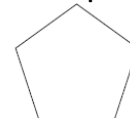
Work out

$2 \times 7 + 10$

24

9

Here is a polygon



Write down the mathematical name of this polygon

Pentagon

5

Write 0.3 as a percentage

30%

10

Here is a list of numbers

2 4 4 7 8

Work out the range of these numbers

$8 - 2 = 6$