PINPOINT REVISION PACKS

63_to_88_Percent_Pinpoint_AI_Pack

Time Allocation = 88mins , Max = 78 Marks

Calculated Grade Boundaries:

Grade	Marks
3+	13
4-	26
4	39
4+	52
5-	65
5	78

Question 1 (AO1): (No Calc) 36% of students got this right (2 marks)

14 A cafe sells cakes and scones.

On Tuesday, the ratio of the number of cakes sold to the number of scones sold was 3 : 8
On Tuesday, the cafe sold 75 cakes.

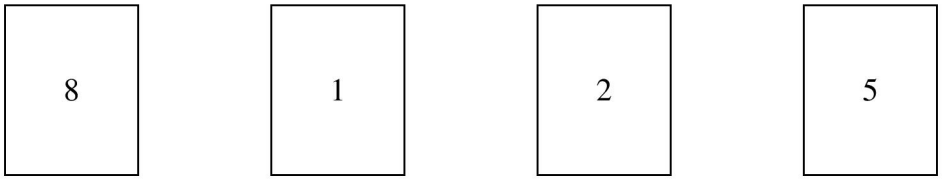
How many scones were sold on Tuesday?

.....

(Total for Question 14 is 2 marks)

Question 2 (AO1): (No Calc) 36% of students got this right (1 marks)

2 Here are four cards.
There is a number on each card.



(b) Write down the smallest 4-digit even number that can be made using each card only once.

.....

(1)

(Total for Question 2 is 2 marks)

Question 3 (AO1): (No Calc) 35% of students got this right (2 marks)

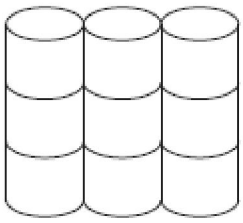
21 Solve $\frac{y}{4} - 12 = 8$

[2 marks]

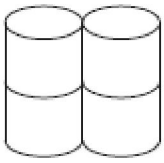
$y =$ _____

Question 4 (AO2): (No Calc) 34% of students got this right (3 marks)

18.



Pack of 9 toilet rolls £4.23



Pack of 4 toilet rolls £1.96

A pack of 9 toilet rolls costs £4.23

A pack of 4 toilet rolls costs £1.96

Which pack gives the better value for money?

You must show all your working.

.....

(Total 3 marks)

Question 5 (AO1): (No Calc) 34% of students got this right (5 marks)

13. A charity made an appeal for money.

The charity put the information shown below on a poster.

Hunger appeal

- £3 will buy 5 meals for one person.
- £100 will buy lunches for 80 school children for 5 days.

£3 will buy 5 meals for one person.

(*a*) Work out the cost of one of the meals.
Give your answer in pence.

..... p
(2)

£100 will buy lunches for 80 school children for 5 days.

(*b*) Work out the cost of buying lunch for one school child for one day.

.....
(3)

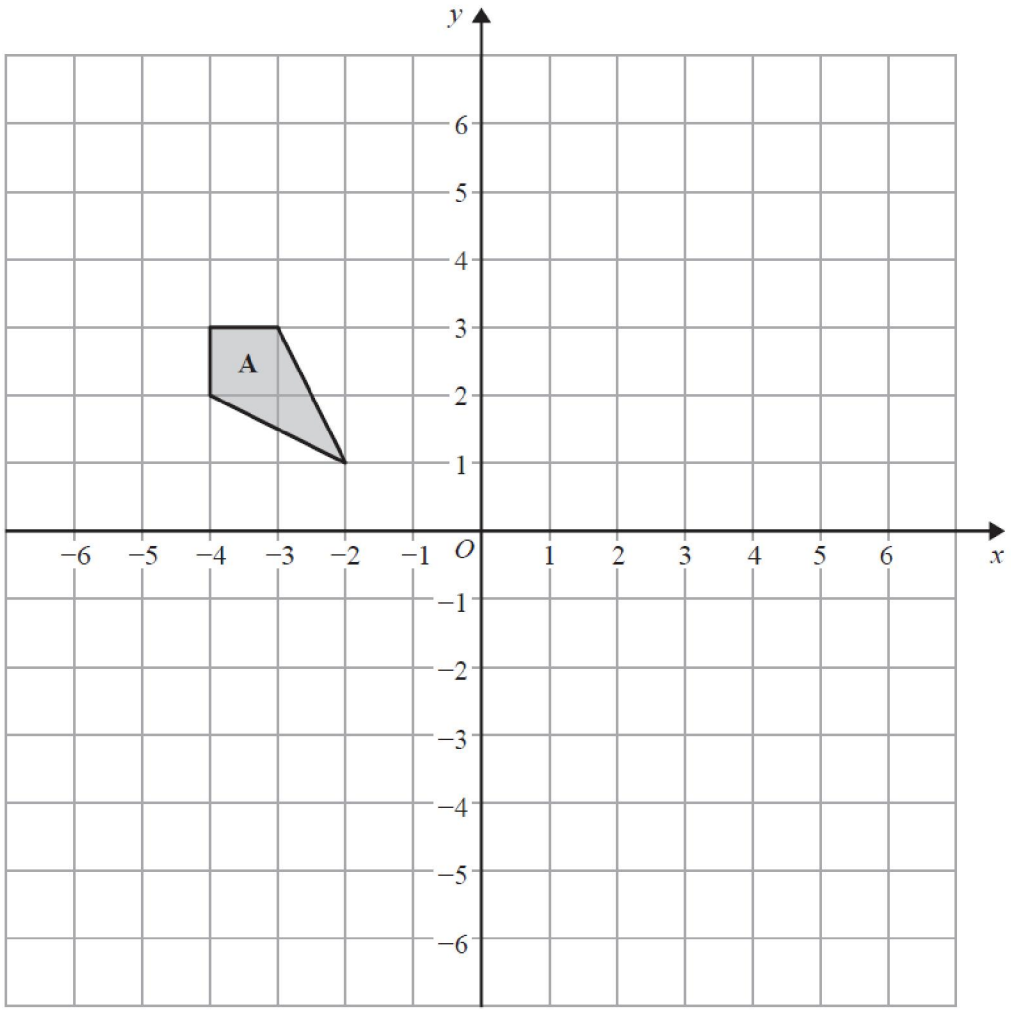
(Total 5 marks)

Question 6 (AO1): (No Calc) 32% of students got this right (1 marks)

10 (b) On the grid, translate shape **B** by the vector $\begin{pmatrix} -5 \\ 7 \end{pmatrix}$

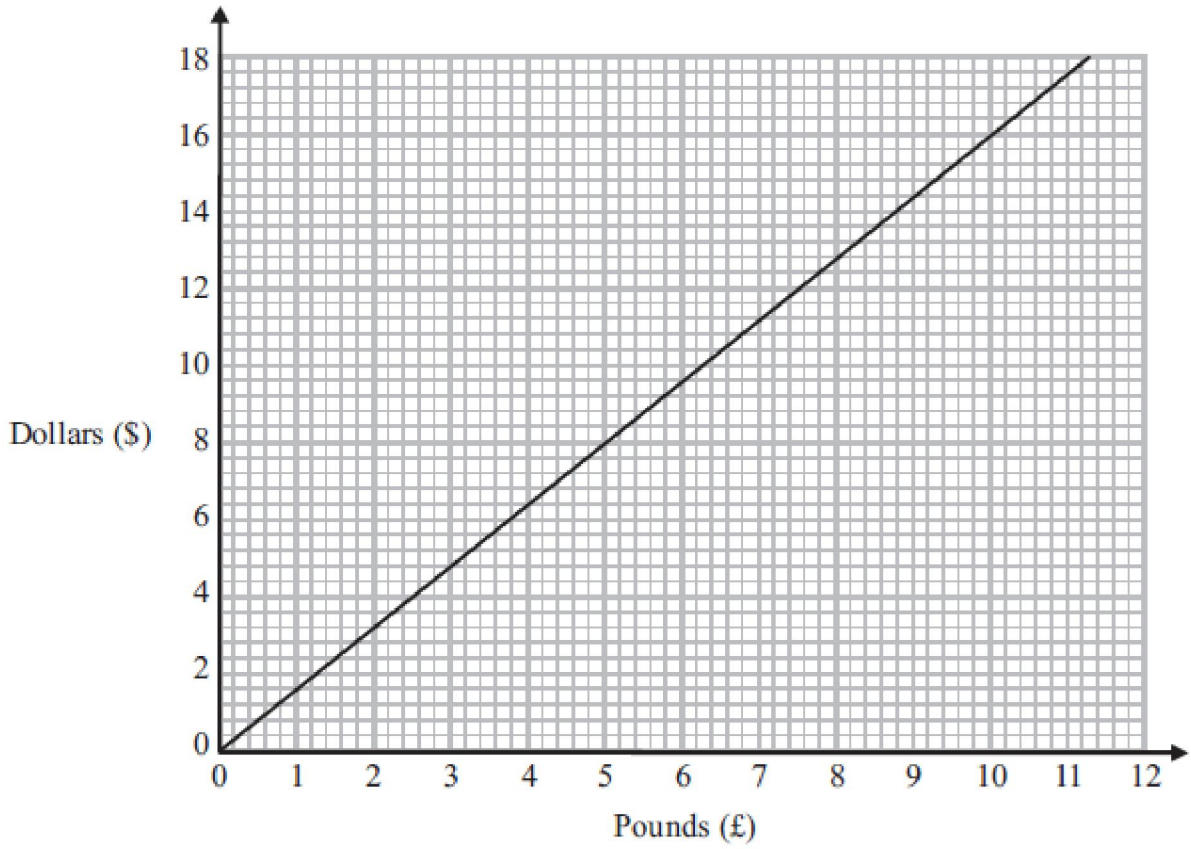
Label the new shape **C**.

(1)



Question 7 (AO1): (No Calc) 31% of students got this right (5 marks)

17. You can use this conversion graph to change between pounds (£) and dollars ($).



(a) Use the conversion graph to change £5 to dollars.

$ .....
(1)

Ella has $200 and £800
Her hotel bill is $600

Ella pays the bill with the $200 and some of the pounds.

(b) Use the conversion graph to work out how many pounds she has left.

£ .....
(4)

(Total 5 marks)

Question 8 (AO1): (No Calc) 29% of students got this right (3 marks)

23. Ramesh throws a biased coin.
The probability that the coin will land on a Head is 0.37

(a) Write down the probability that the coin will land on a Tail.

.....

(1)

Ramesh is going to throw the coin 500 times.

(b) Work out an estimate for the number of times that the coin will land on a Head.

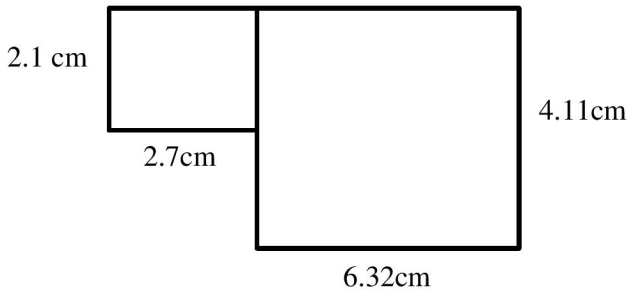
.....

(2)

(Total 3 marks)

Question 9 (AO2): (No Calc) 28% of students got this right (3 marks)

13 This shape is made from two rectangles.



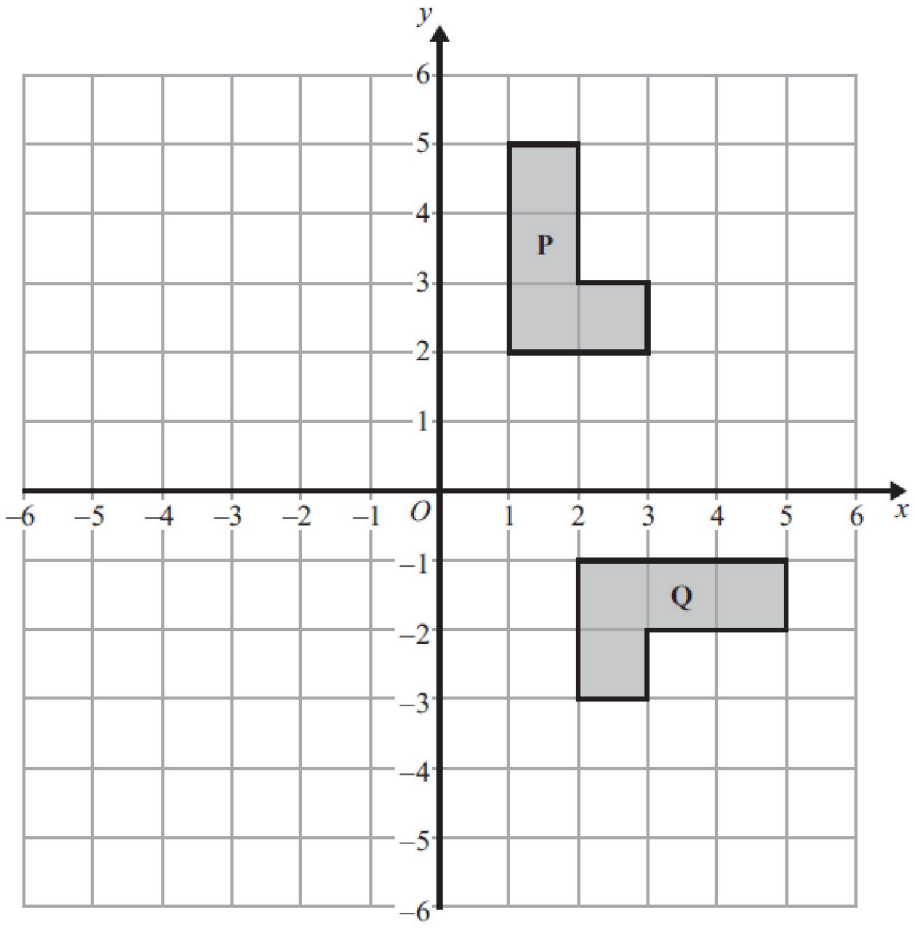
(a) Work out an estimate for the total area of the shape.

..... cm^2

(3)

Question 10 (AO2): (No Calc) 28% of students got this right (3 marks)

20.



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

.....

.....

(Total 3 marks)

Question 11 (AO1): (No Calc) 27% of students got this right (3 marks)

9 The formulae below can be used to work out the cost, £C, of a taxi journey of x miles with three different taxi companies.

Reliable Taxis	**Speedy Taxis**	**City Taxis**
$C = 1.5x$	$C = 1.1x + 11.5$	$C = 1.25x + 8$

Which is the cheapest company to use for a taxi journey of 40 miles?
You must show how you get your answer.

(Total for Question 9 is 3 marks)

Question 12 (AO3): (No Calc) 25% of students got this right (4 marks)

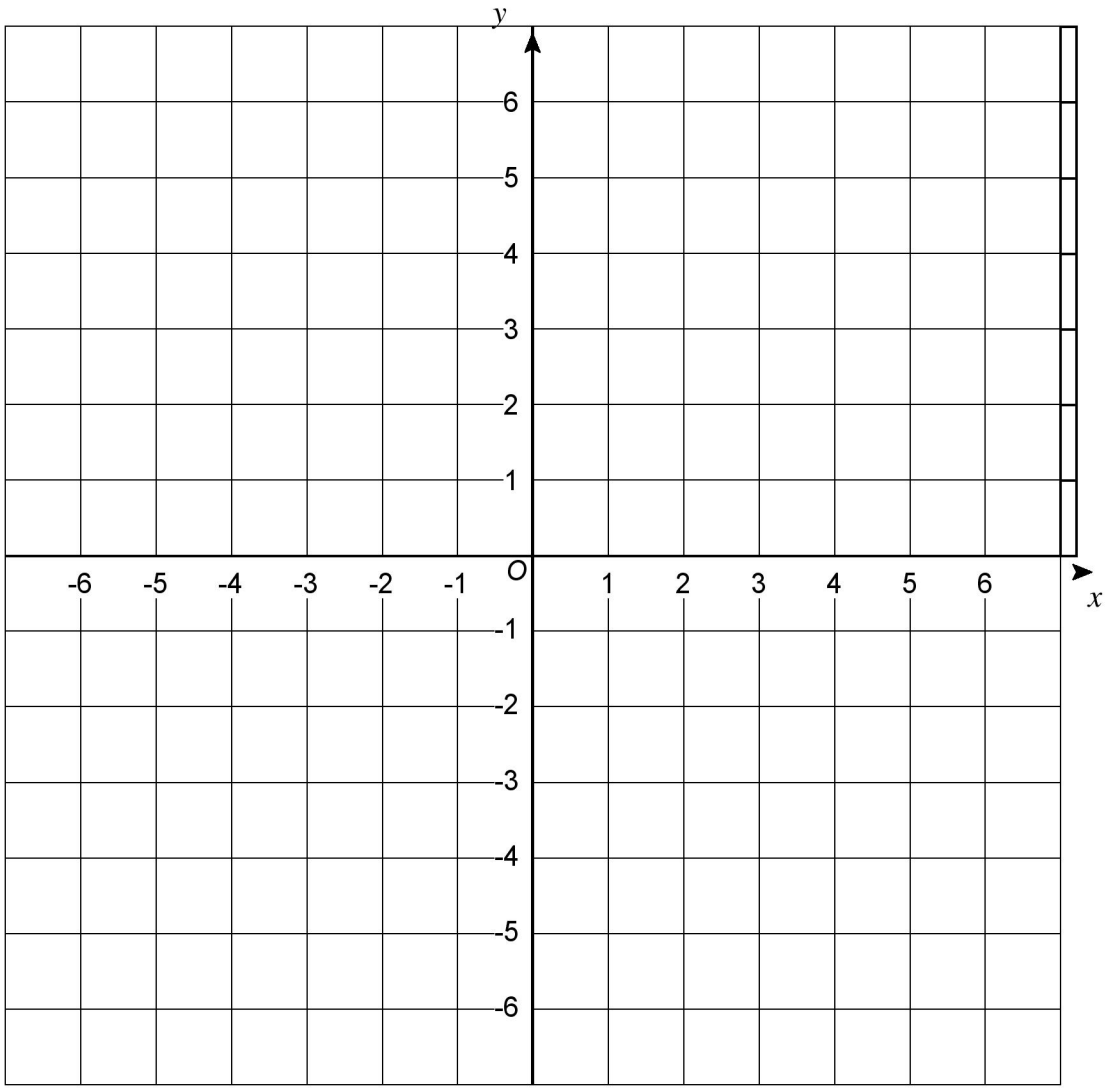
18 A straight line passes through the points (7, -2) and (-3, 6)

Another straight line has equation $y = x$

Work out the coordinates of the point of intersection of the two lines.

You may use the grid to help you.

[4 marks]



Answer (_____ , _____)

Question 13 (AO1): (No Calc) 25% of students got this right (3 marks)

24 Write 250 as a product of its prime factors.

.....

(Total for Question 24 is 3 marks)

Question 14 (AO2): (No Calc) 23% of students got this right (4 marks)

19. Dylan is driving from London to Newcastle.
He will drive a total distance of 240 miles.

Dylan leaves London at 09:30

It takes him $1\frac{1}{2}$ hours to travel the first 90 miles.

(a) Use this information to estimate the time Dylan will arrive in Newcastle.
You must show how you get your answer.

.....

(3)

(b) Write down **one** assumption you made in your answer to part (a).
If your assumption is wrong, how would this affect your answer to part (a)?

……...……..

..……

(1)

(Total 4 marks)

Question 15 (AO3): (No Calc) 23% of students got this right (3 marks)

6

pen	25p
pencil	5p
ruler	20p

Rosie has £10 to spend on pens and pencils.

She has to buy the same number of pens as pencils.

What is the greatest number of pens she can buy?

.....

(Total for Question 6 is 3 marks)

Question 16 (AO1): (No Calc) 23% of students got this right (2 marks)

25. Write the following numbers in order of size.
Start with the smallest number.

0.038×10^{2} 3800×10^{-4} 380 0.38×10^{-1}

.....

(Total 2 marks)

Question 17 (AO1): 23% of students got this right (3 marks)

18. Work out an estimate for the value of

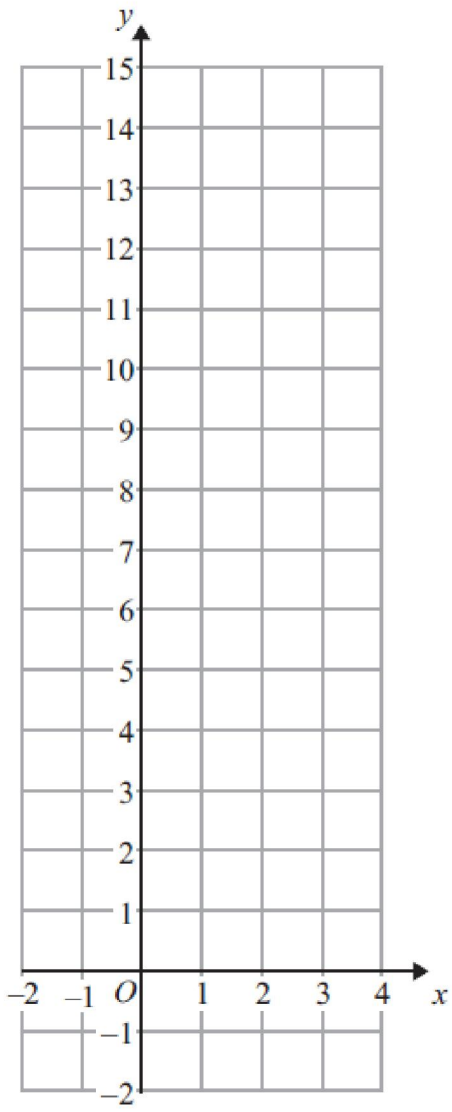
$$\frac{6.8\times191}{0.051}$$

.....

(Total 3 marks)

Question 18 (AO1): (No Calc) 19% of students got this right (3 marks)

22.a



(a) On the grid, draw the graph of $y = 3x + 5$ for values of x from –2 to 3

(3)

Question 19 (AO1): (No Calc) 19% of students got this right (3 marks)

24. Arwen buys a car for £4000
The value of the car depreciates by 10% each year.

Work out the value of the car after two years.

£ .....

(Total 3 marks)

Question 20 (AO1): (No Calc) 19% of students got this right (3 marks)

17 Work out $4\frac{2}{3} - 1\frac{2}{5}$

.....

(Total for Question 17 is 3 marks)

Question 21 (AO3): (No Calc) 17% of students got this right (3 marks)

12. There are 11 counters in a bag.
6 of these counters are green.
5 of these counters are red.

Some more red counters are put into the bag.

A counter is then taken at random from the bag.

The probability that the counter is red is $\frac{3}{5}$

How many red counters were put into the bag?

.....

(Total 3 marks)

Question 22 (AO3): 15% of students got this right (5 marks)

16.

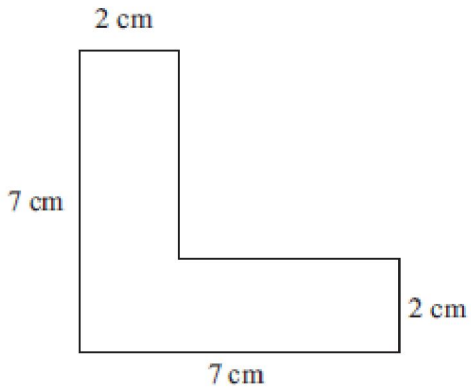


Diagram **NOT** accurately drawn

The diagram shows the cross-section of a solid prism.
The length of the prism is 2 m.

The prism is made from metal.
The density of the metal is 8 grams per cm^3.

Work out the mass of the prism.

.....

(Total 5 marks)

Question 23 (AO3): (No Calc) 14% of students got this right (5 marks)

25 (a) Here are the fourth and fifth terms of a Fibonacci-type sequence.

____ ____ ____ 28 43

Each term is the sum of the previous two terms.
Show that the first term is 2

[2 marks]

25 (b) Here are the first and third terms of a different Fibonacci-type sequence.

a ____ b ____ ____

Each term is the sum of the previous two terms.
Work out an expression in terms of a and b for the fifth term.

[3 marks]

Answer _____

Question 24 (AO1): 14% of students got this right (3 marks)

19. The normal price of a television is reduced by 30% in a sale.

The sale price of the television is £350

Work out the normal price of the television.

£.....

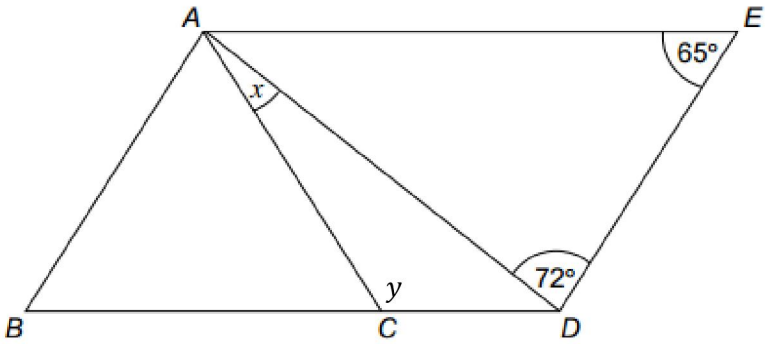
(Total 3 marks)

Question 25 (AO2): (No Calc) 14% of students got this right (3 marks)

26 *ABDE* is a parallelogram.

AB = *AC*

Not drawn accurately



Show that $x = 22°$ and $y = 115°$

[3 marks]

Ext Qn1 (AO1): (No Calc) Only 10% of students got this right(4 mark

21. Harry travels from Appleton to Brockley at an average speed of 50 mph.
He then travels from Brockley to Cantham at an average speed of 70 mph.

Harry takes a total time of 5 hours to travel from Appleton to Cantham.
The distance from Brockley to Cantham is 210 miles.

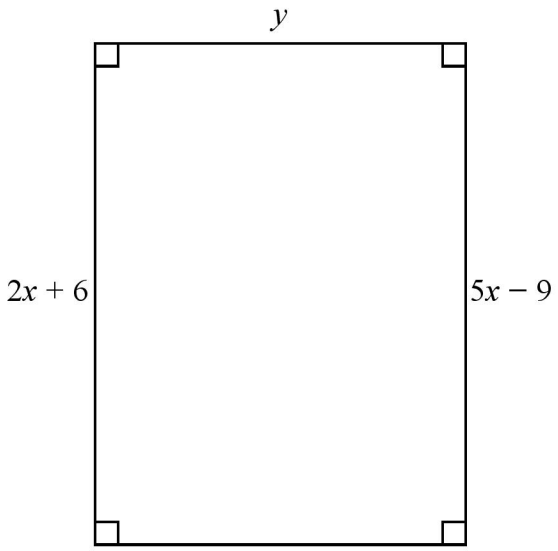
Calculate Harry's average speed for the total distance travelled from Appleton to Cantham.

..... mph

(Total 4 marks)

Ext Qn2 (AO1): (No Calc) Only 10% of students got this right(4 mark

28 Here is a rectangle.



All measurements are in centimetres.

The area of the rectangle is 48 cm^2.

Show that $y = 3$

Ext Qn3 (AO1): (No Calc) Only 9% of students got this right(2 marks

16 Change 2100 mm^3 into cm^3.

..... cm^3

(Total for Question 16 is 2 marks)

Answers to Qn 1 (AO1): (No Calc) 36% of students got this right

14 A cafe sells cakes and scones.

On Tuesday, the ratio of the number of cakes sold to the number of scones sold was 3 : 8
On Tuesday, the cafe sold 75 cakes.

How many scones were sold on Tuesday?

$75 \div 3 = 25$

$8 \times 25 = 200$

200 cakes

Answers to Qn 2 (AO1): (No Calc) 36% of students got this right

2 (b) Write down the smallest 4-digit even number that can be made using each card only once.

1258

Answers to Qn 3 (AO1): (No Calc) 35% of students got this right

21 Solve $\frac{y}{4} - 12 = 8$

$\frac{y}{4} = 20$

$y =$ 80

Answers to Qn 4 (AO2): (No Calc) 34% of students got this right

18.		1.96 × 2.25 = 4.41 **OR** 4.23 ÷ 9 = 0.47 1.96 ÷ 4 = 0.49 **OR** 4.23 × 4 = 16.92 1.96 × 9 = 17.64 **OR** 4.23 ÷ 9 = 0.47 0.47 × 4 = 1.88 **OR** 1.96 ÷ 4 = 0.49 0.49 × 9 = 4.41 **OR** 9 ÷ 4.23 = 2.12 4 ÷ 1.96 = 2.04	Pack of 9	3	M2 for a fully correct method to enable a conclusion eg 1.96 × 2¼ **OR** M1 for 4.23 ÷ 9 or 423 ÷ 9 **or** 0.47 seen **or** 47 seen M1 for 1.96 ÷ 4 or 196 ÷ 4 or 0.49 seen or 49 seen **OR** M1 for 4.23 × 4 **or** 423 × 4 **or** 16.92 seen **or** 1692 seen M1 for 1.96 × 9 **or** 196 × 9 **or** 17.64 seen **or** 1764 seen **OR** M1 for 4.23 ÷ 9 **or** 423 ÷ 9 **or** 0.47 seen **or** 47 seen M1 for 0.47 × 4 **or** 47 × 4 **or** 1.88 seen **or** 188 seen **OR** M1 for 1.96 ÷ 4 **or** 196 ÷ 4 **or** 0.49 seen **or** 49 seen M1 for 0.49 × 9 **or** 49 × 9 **or** 4.41 seen **or** 441 seen **OR** M1 for 9 ÷ 4.23 **or** 2.12(...) seen **or** 2.13 seen M1 for 4 ÷ 1.96 **or** 2.04(...) seen A1 for Pack of 9 and fully correct calculations **NOTE:** B0 for an answer of 9 not supported by working.

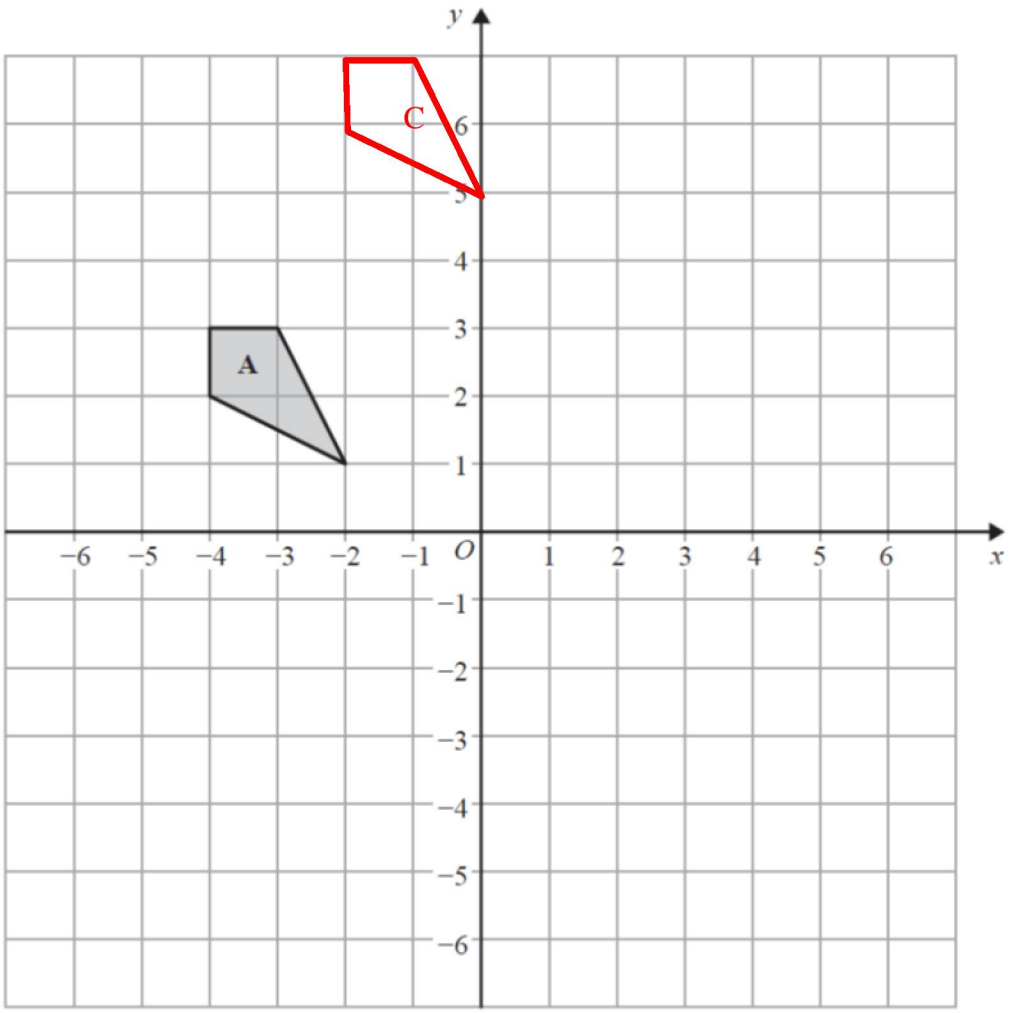
Answers to Qn 5 (AO1): (No Calc) 34% of students got this right

13.	(a)		60	2	M1 for 300 ÷ 5 or 3 ÷ 5 (or equivalent) A1 cao
	(b)		25p or £0.25	3	M1 for 100 ÷ 5 (= 20) M1 for "20" ÷ 80 or "20" × 100 ÷ 80 A1 for 25p or £0.25 **OR** M1 for 80 × 5 (= 400) M1 for 100 ÷ "400" or 100 × 100 ÷ "400" A1 for 25p or £0.25 **OR** M1 for 100 ÷ 80 (= 1.25) M1 for "1.25" ÷ 5 or "1.25" × 100 ÷ 5 A1 for 25p or £0.25

Answers to Qn 6 (AO1): (No Calc) 32% of students got this right

10 (b) On the grid, translate shape **B** by the vector $\begin{pmatrix} -5 \\ 7 \end{pmatrix}$

Label the new shape **C**.



Answers to Qn 7 (AO1): (No Calc) 31% of students got this right

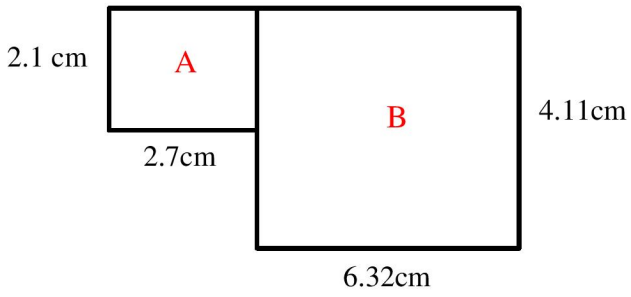
17.	(a)		8	1	B1 for 8 (.00)
	(b)		550	4	M1 for 600 – 200 (= 400) M1 for correct method to convert '$400' to £ M1 (dep on the previous M1) for 800 – '$400' in £s A1 for value in the range 540 –560 **OR** M1 for correct method to convert $600 **and** $200 to pounds M1 for '375'–'125' M1 (dep on the previous M1) 800 –'250' A1 for a value in the range 540-560 **OR** M1 for correct method to convert £800 to dollars M1 for '1280' + 200 – 600 M1 (dep on the previous M1) for attempt to convert '$880' back to £ A1 for value in the range 540 – 560

Answers to Qn 8 (AO1): (No Calc) 29% of students got this right

23.	(a)	1 – 0.37	0.63	1	B1 for 0.63 (or equivalent)
	(b)	0.37 × 500	185	2	M1 for 0.37 × 500 A1 cao SC B1 for 200

Answers to Qn 9 (AO2): (No Calc) 28% of students got this right

13 This shape is made from two rectangles.



(a) Work out an estimate for the total area of the shape.

A => $2 \times 2 = 4cm^2$

B => $6 \times 4 = 24cm^2$

$4 + 24 = 28cm^2$

Answers to Qn 10 (AO2): (No Calc) 28% of students got this right

20.			Rotation Centre (0,0) 90° clockwise	3	B1 for rotation B1 for 90° clockwise or 270° anticlockwise B1 for (0, 0) or *O* or origin NB: a combination of transformations gets B0

Answers to Qn 11 (AO1): (No Calc) 27% of students got this right

9 The formulae below can be used to work out the cost, £C, of a taxi journey of x miles with three different taxi companies.

Reliable Taxis	**Speedy Taxis**	**City Taxis**
$C = 1.5x$	$C = 1.1x + 11.5$	$C = 1.25x + 8$

Which is the cheapest company to use for a taxi journey of 40 miles?
You must show how you get your answer.

RT ⇒ $C = 1.5x$
$= 1.5(40)$
$= £60.$

ST ⇒ $C = 1.1x + 11.5$
$= 1.1(40) + 11.5$
$= 44 + 11.5$
$= £55.50.$

CT ⇒ $C = 1.25x + 8$
$= 1.25(40) + 8$
$= £50 + 8.$
$= £58.$

∴ Speedy taxis is the cheapest co to use for a taxi journey of 40 miles

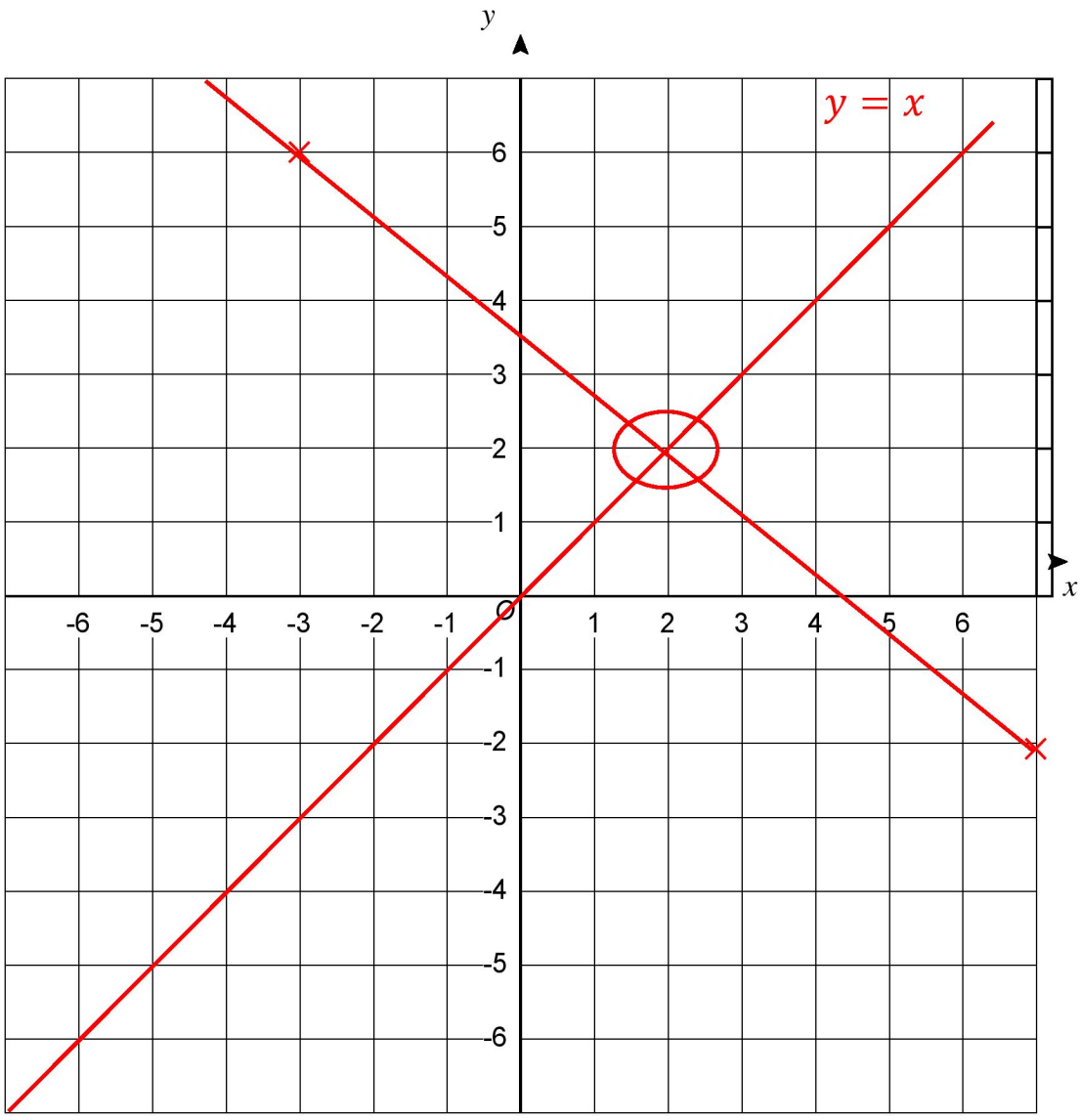
Answers to Qn 12 (AO3): (No Calc) 25% of students got this right

18 A straight line passes through the points (7, -2) and (-3, 6)

Another straight line has equation $y = x$

Work out the coordinates of the point of intersection of the two lines.

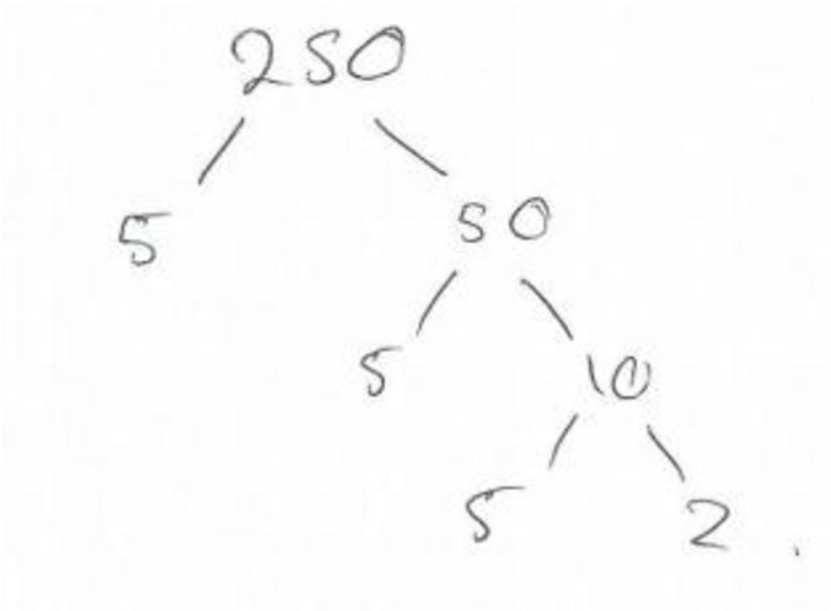
You may use the grid to help you.



Answer (2 , 2)

Answers to Qn 13 (AO1): (No Calc) 25% of students got this right

24 Write 250 as a product of its prime factors.



$5^3 \times 2$

Answers to Qn 14 (AO2): (No Calc) 23% of students got this right

19.	(a)			1	M1 90 ÷ 1.5 (=60)
				1	M1 240 ÷ 60 (= 4 hours)
			13:30	1	A1
	(b)		Assumption and affect	1	C1 e.g. assumed constant speed – if not constant than could arrive earlier or later. Assumed no stops – if stop then will arrive later

Answers to Qn 15 (AO3): (No Calc) 23% of students got this right

6

pen	25p
pencil	5p
ruler	20p

Rosie has £10 to spend on pens and pencils.

She has to buy the same number of pens as pencils.

What is the greatest number of pens she can buy?

25p + 5p = 30p

$1000 \div 30 = \frac{100}{3}$

33.33…

33 pens

Answers to Qn 16 (AO1): (No Calc) 23% of students got this right

25.		0.38×10^{-1}, 3800×10^{-4}, 0.038×10^{2}, 380	Correct order	2	M1 changing any one correctly or at least 3 in the correct order (ignoring one) or reverse order A1 for correct order (accept any form)

Answers to Qn 17 (AO1): 23% of students got this right

18. Work out an estimate for the value of

$$\frac{6.8\times191}{0.051}$$

$\frac{7\times200}{0.05} = \frac{1400}{0.05}$

28000

(Total 3 marks)

Answers to Qn 18 (AO1): (No Calc) 19% of students got this right

<table>
<tr>
<td>22.</td>
<td>(a)</td>
<td>$y = 3x + 5$
<table><tr><td>x</td><td>–2</td><td>–1</td><td>0</td><td>1</td><td>2</td><td>3</td></tr><tr><td>y</td><td>–1</td><td>2</td><td>5</td><td>8</td><td>11</td><td>14</td></tr></table></td>
<td>Correct line from (–2, –1) to (3, 14)</td>
<td>3</td>
<td>(Table of values / calculation of values)
M1 for at least 2 correct attempts to find points by substituting values of x.

M1 ft for plotting at least 2 of their points (any points plotted from their table must be correctly plotted)

A1 for correct line between $x = –2$ and $x = 3$

(No table of values)
M1 for at least 2 correct points with no more than 2 incorrect points

M1 for at least 2 correct points (and no incorrect points) plotted

OR line segment of $y = 3x + 5$ drawn
A1 for correct line between $x = –2$ and $x = 3$

(Use of $y = mx + c$)
M1 for line drawn with gradient of 3
OR line drawn with a y intercept of 5

M1 for line drawn with gradient of 3
AND line drawn with a y intercept of 5

A1 for correct line between $x = –2$ and $x = 3$

SC : B2 for the correct line from $x = 0$ to $x = 3$</td>
</tr>
</table>

Answers to Qn 19 (AO1): (No Calc) 19% of students got this right

24.		$4000 - (\frac{10}{100} \times 4000) = 3600$ $3600 - (\frac{10}{100} \times 3600)$	3240	3	M1 for $4000 - \frac{10}{100}$ or 0.9×4000 (or equivalent) or 3600 or 400 or 3200 or 800 seen M1 (dep) 10 "3600" $- \frac{10}{100} \times$ "3600" or "3600" $\times$ 0.9 (or equivalent) A1 cao **or** M2 for 29.04000×0.9^2 (M1 for 4000×0.9^3) A1 cao [SC: B2 for an answer of £4840, with or without working]

Answers to Qn 20 (AO1): (No Calc) 19% of students got this right

17 Work out $4\frac{2}{3} - 1\frac{2}{5}$

$\frac{14}{3} - \frac{7}{5} = \frac{70}{15} - \frac{21}{15} = \frac{49}{15}$

Answers to Qn 21 (AO3): (No Calc) 17% of students got this right

12. There are 11 counters in a bag.
6 of these counters are green.
5 of these counters are red.

Some more red counters are put into the bag.

A counter is then taken at random from the bag.

The probability that the counter is red is $\frac{3}{5}$

How many red counters were put into the bag?

$\frac{3}{5} = \frac{9}{15}$

$9 - 5 = 4$

(Total 3 marks)

Answers to Qn 22 (AO3): 15% of students got this right

16.

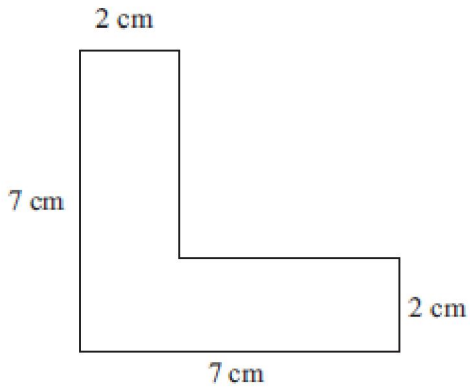


Diagram **NOT** accurately drawn

The diagram shows the cross-section of a solid prism.
The length of the prism is 2 m.

The prism is made from metal.
The density of the metal is 8 grams per cm^3.

Work out the mass of the prism.

$(7 \times 2 + 2 \times 5) \times 200 = 4800$

$4800 \times 8 = 38\ 400$ g

(Total 5 marks)

Answers to Qn 23 (AO3): (No Calc) 14% of students got this right

25 (a) Here are the fourth and fifth terms of a Fibonacci-type sequence.

____ ____ ____ 28 43

Each term is the sum of the previous two terms.
Show that the first term is 2

3rd Term: 43 – 28 = 15

2nd Term: 28 – 15 = 13

1st Term: 15 – 13 = 2

25 (b) Here are the first and third terms of a different Fibonacci-type sequence.

a ____ b ____ ____

Each term is the sum of the previous two terms.
Work out an expression in terms of a and b for the fifth term.

1st term: a

2nd term: $b - a$

3rd term: b

4th term: $b - a + b = 2b - a$

5th term: $2b - a + b = 3b - a$

Answer $3b - a$

Answers to Qn 24 (AO1): 14% of students got this right

19. The normal price of a television is reduced by 30% in a sale.

The sale price of the television is £350

Work out the normal price of the television.

$\frac{350}{70} \times 100$

£500

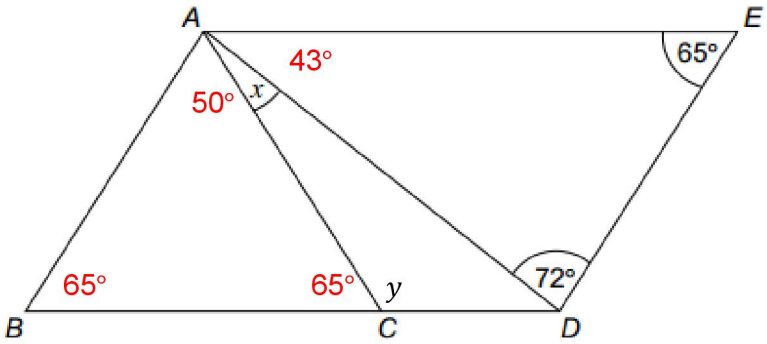
(Total 3 marks)

Answers to Qn 25 (AO2): (No Calc) 14% of students got this right

26 *ABDE* is a parallelogram.

AB = *AC*

Not drawn accurately



Show that $x = 22°$ and $y = 115°$

DAE = 180 − 65 − 72 = 43

ABC = 65

BAC = 180 − 65 − 65 = 50

Angles in a quadrilateral: 360 – 65 – 65 = 230

230 ÷ 2 = 115

BAE = 115

x = 115 – 50 – 43

x = 22°

y = 180 – 65 = 115°

Ext ANSWERS 1 (AO1): (No Calc) Only 10% of students got this rigl

21. Harry travels from Appleton to Brockley at an average speed of 50 mph.
He then travels from Brockley to Cantham at an average speed of 70 mph.

Harry takes a total time of 5 hours to travel from Appleton to Cantham.
The distance from Brockley to Cantham is 210 miles.

Calculate Harry's average speed for the total distance travelled from Appleton to Cantham.

B to C time = $210 \div 70 = 3$ hours

A to B distance $= (5 - 3) \times 50 = 100$ miles

$210 + (2 \times 50) \div 5$

$310 \div 5 = 62$

(Total 4 marks)

TOTAL FOR PAPER IS 80 MARKS

Ext ANSWERS 2 (AO1): (No Calc) Only 10% of students got this rigl

Part	Working or answer an examiner might expect to see	Mark	Notes
28	$2x + 6 = 5x - 9$	1	This mark is given for forming an equation
	$3x = 15$ $x = 5$	1	This mark is given for rearranging and solving for x
	$(2 \times 5) + 6 = 16$ or $(5 \times 5) - 9 = 16$	1	This mark is given for substituting 5 into the side length
	$48 \div 16 = 3$ so $y = 3$	1	This mark is given for the correct answer only

Ext ANSWERS 3 (AO1): (No Calc) Only 9% of students got this right

16 Change $2100\ \text{mm}^3$ into cm^3.

$2100 \div 10^3$

$2100 \div 1000 = 2.1\text{cm}^3$