PINPOINT LEARNING

PAPER THREE REVISION PACKS

0_to_52_Percent_Pinpoint_AI_Pack

Time Allocation = 110mins , Max = 97 Marks

Calculated Grade Boundaries:

Grade	Marks
3+	20
4-	39
4	59
4+	78
5-	97

Question 1 (AO2): 89% of students got this right (4 marks)

7. 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 7 is 4 marks)

Question 2 (AO1): 88% of students got this right (1 marks)

6 $p^3 \times p^x = p^9$

(*a*) Find the value of x.

Question 3 (AO1): 84% of students got this right (1 marks)

8 Use your calculator to work out $\sqrt{\dfrac{\sin 25^\circ + \sin 40^\circ}{\cos 25^\circ - \cos 40^\circ}}$

(*a*) Write down all the figures on your calculator display.

(*b*) Write your answer to part (*a*) correct to 2 decimal places.

Question 4 (AO2): 83% of students got this right (1 marks)

5 Maryam is trying to expand and simplify $(n-2)^2$

Here is her working.

$$\begin{aligned}(n-2)^2 &= (n-2)(n-2)\\ &= n^2-2n-2n-4\\ &= n^2-4n-4\end{aligned}$$

Maryam's answer is wrong.

(*a*) Find Maryam's mistake.

Question 5 (AO1): 77% of students got this right (3 marks)

1 Solve $5x - 6 = 3(x - 1)$

Question 6 (AO1): 72% of students got this right (3 marks)

13.

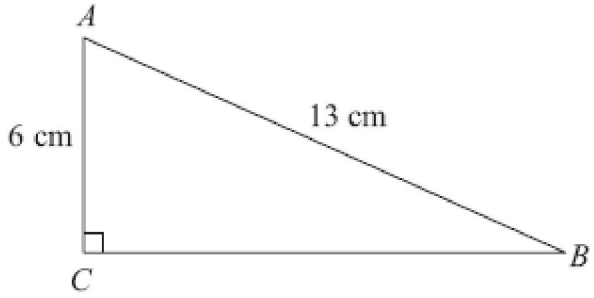


Diagram **NOT** accurately drawn

ABC is a right-angled triangle.
AC = 6 cm
AB = 13 cm

(a) Work out the length of *BC*.
Give your answer correct to 3 significant figures.

..... cm
(3)

Question 7 (AO1): 71% of students got this right (3 marks)

5. Ben goes on holiday to Hong Kong.

In Hong Kong, Ben sees a camera costing HK$3179.55.
In London, an identical camera costs £285.

The exchange rate is £1 = HK$12.30.

Ben buys the camera in Hong Kong.

How much cheaper is the camera in Hong Kong than in London?

.....

(Total for Question 5 is 3 marks)

Question 8 (AO1): 70% of students got this right (4 marks)

11. (a) Expand and simplify $3(x + 4) + 2(5x - 1)$

RETEST QUESTION

(b) Expand and simplify $(2x + 1)(x - 4)$

.....

(2)

(c) Factorise completely $6y^2 - 9xy$

.....

(2)

(Total for Question 11 is 6 marks)

Question 10 (AO1): 64% of students got this right (3 marks)

11 Expand and simplify $(x + 2)(x + 8)(x - 4)$

Question 11 (AO3): 63% of students got this right (2 marks)

2. A rugby team played six games.
The mean score for the six games is 14.5

The rugby team played one more game.
The mean score for all seven games is 16

Work out the number of points the team scored in the seventh game.

..... points

(Total 2 marks)

Question 12 (AO2): 63% of students got this right (4 marks)

***7.** Plants are sold in three different sizes of tray.

A small tray of 30 plants costs £6.50.
A medium tray of 40 plants costs £8.95.
A large tray of 50 plants costs £10.99.

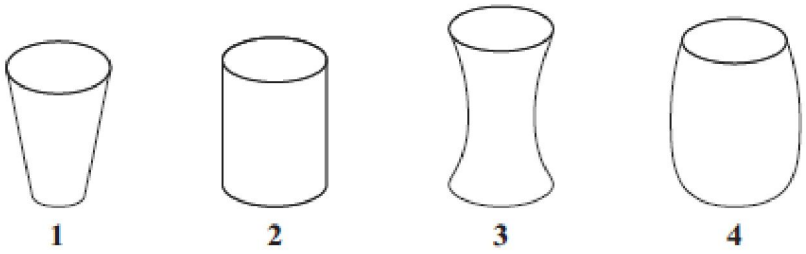
Kaz wants to buy the tray of plants that is the best value for money.

Which size tray of plants should she buy?
You must show all your working.

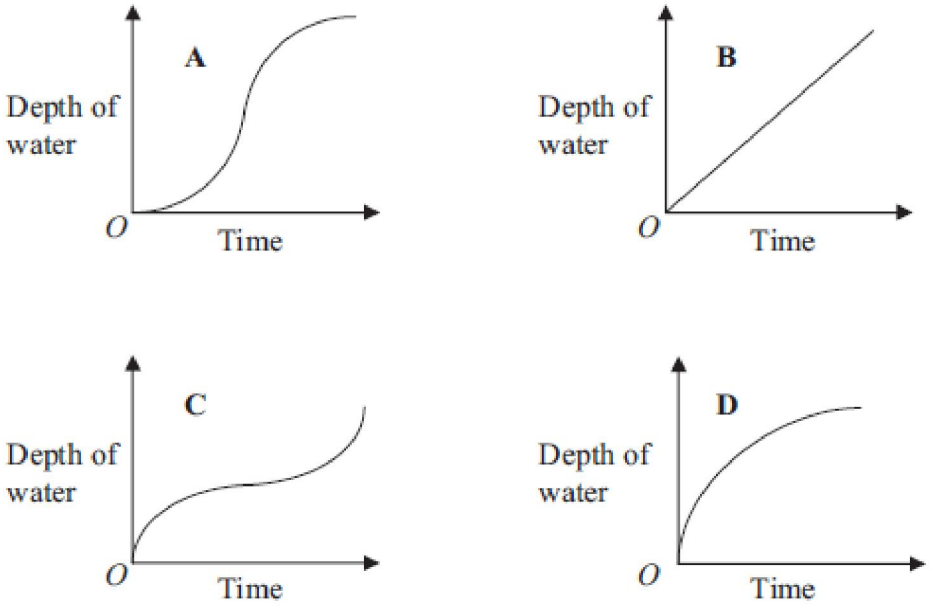
(Total for Question 7 is 4 marks)

Question 13 (AO2): 62% of students got this right (2 marks)

3. Here are four containers.
Water is poured into each container at a constant rate.



Here are four graphs.
The graphs show how the depth of the water in each container changes with time.



Match each graph with the correct container.

A and .....

B and .....

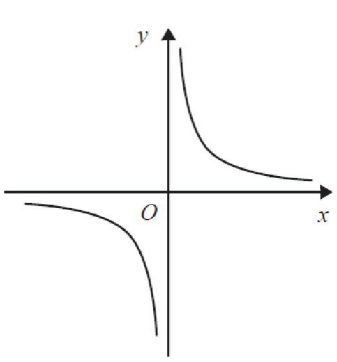
C and .....

D and .....

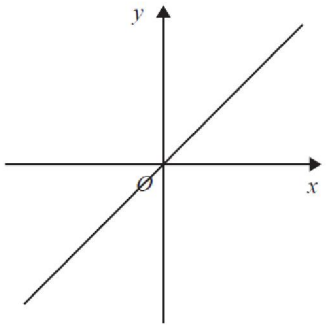
(Total 2 marks)

Question 14 (AO1): 62% of students got this right (3 marks)

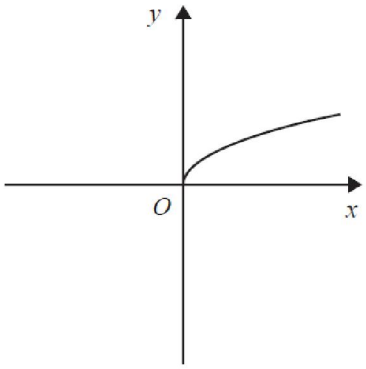
13 Here are five graphs.
Each graph shows either direct proportion or inverse proportion.



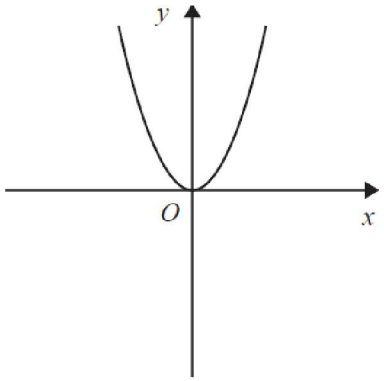
A



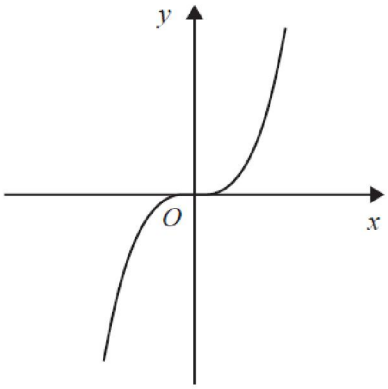
B



C



D



E

The table shows five equations.

Equation	Graph
$y = kx^3$	
$y = k\sqrt{x}$	
$y = kx^2$	
$y = \frac{k}{x}$	
$y = kx$	

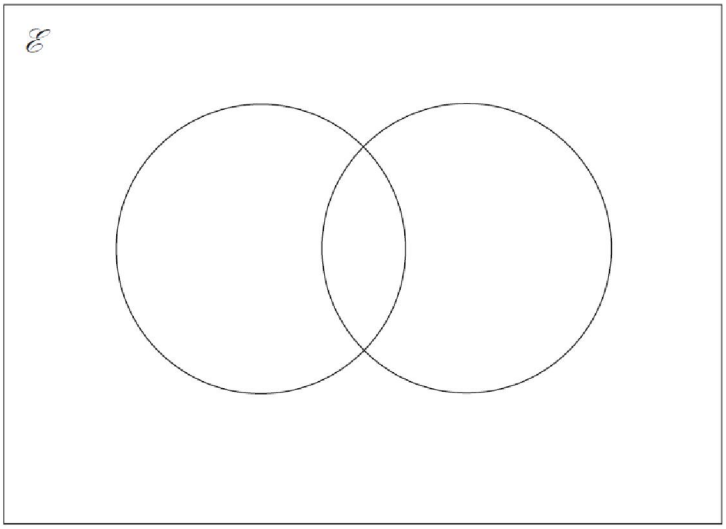
Match the letter of each graph to its equation.

Question Order Created by Pinpoint Learnings Automatic Differentiation Algorithmn

Question 15 (AO1): 61% of students got this right (6 marks)

1 $\mathscr{E}$= {odd numbers less than 30}
A = {3, 9, 15, 21, 27}
B = {5, 15, 25}

(a) Complete the Venn diagram to represent this information.



(4)

A number is chosen at random from the universal set, $\mathscr{E}$.

(b) What is the probability that the number is in the set $A \cup B$?

(2)

(Total for Question 1 is 6 marks)

Question 16 (AO3): 61% of students got this right (6 marks)

10 The population of a city increased by 5.2% for the year 2014.

At the beginning of 2015 the population of the city was 1 560 000.

Lin assumes that the population will continue to increase at a constant rate of 5.2% each year.

(*a*) Use Lin's assumption to estimate the population of the city at the beginning of 2017. Give your answer correct to 3 significant figures.

(*b*) (i) Use Lin's assumption to work out the year in which the population of the city will reach 2 000 000.

(ii) If Lin's assumption about the rate of increase of the population is too low, how might this affect your answer to (*b*)(i)?

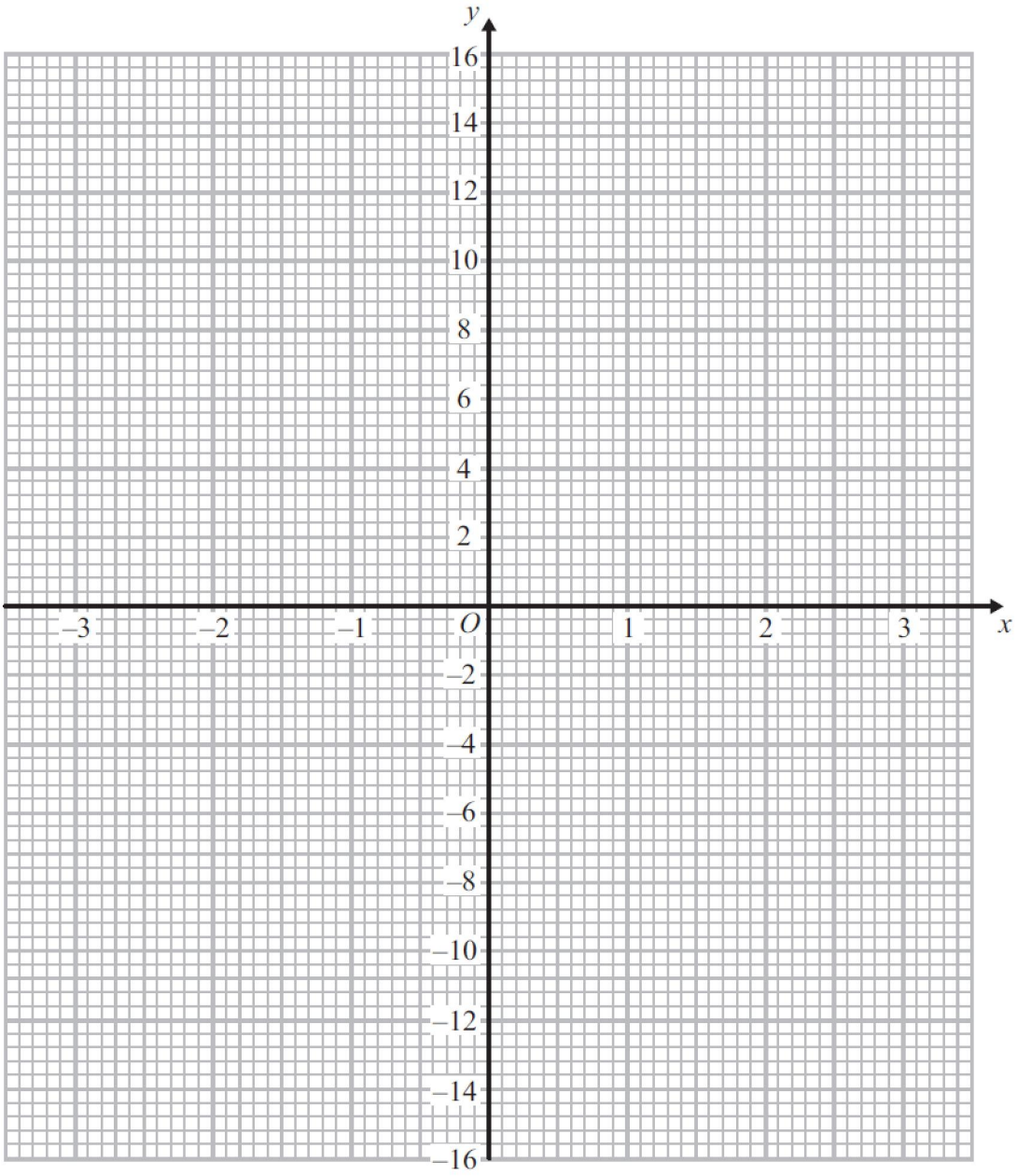
Question 17 (AO1): 60% of students got this right (4 marks)

17. (*a*) Complete the table of values for $y = x^3 - 4x$.

x	–3	–2	–1	0	1	2	3
y			3	0			15

(2)

(*b*) On the grid, draw the graph of $y = x^3 - 4x$ from $x = -3$ to $x = 3$.



(2)

(Total for Question 17 is 4 marks)

Question 18 (AO2): 60% of students got this right (4 marks)

9. The diagram shows a pattern using four identical rhombuses.

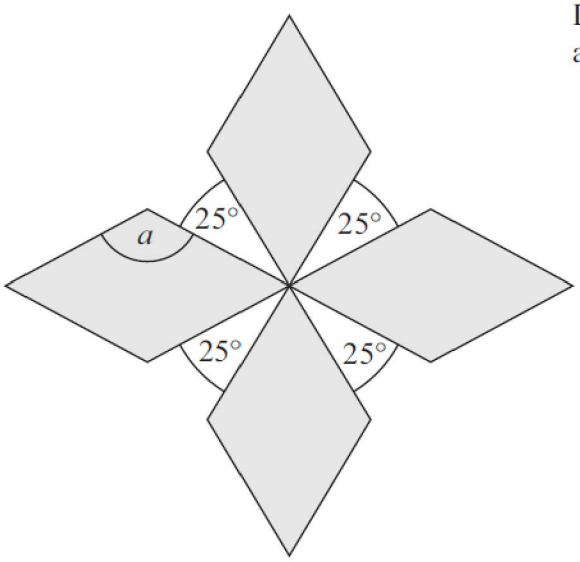


Diagram **NOT** accurately drawn

Work out the size of the angle marked a.
You must show your working.

.....°

(Total for Question 9 is 4 marks)

Question 19 (AO2): 60% of students got this right (4 marks)

8. Here are the first four terms of an arithmetic sequence.

3 10 17 24

(*a*) Find, in terms of *n*, an expression for the *n*th term of this arithmetic sequence.

.....

(2)

(*b*) Is 150 a term of this sequence?

You must explain how you get your answer.

.....

.....

.....

.....

.....

(2)

(Total for Question 8 is 4 marks)

Question 20 (AO2): 59% of students got this right (2 marks)

17. Calculate the value of $\sqrt{\dfrac{\tan 60° + 1}{\tan 60° - 1}}$

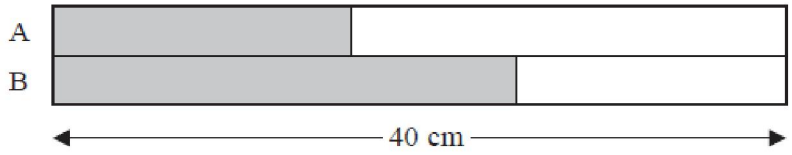
Write down all the figures on your calculator display.
You must give your answer as a decimal.

.....

(Total for Question 17 is 2 marks)

Question 21 (AO3): 58% of students got this right (4 marks)

1. Here is a rectangle.



The rectangle has been divided into two strips, A and B.
The strips have the same width.

$\frac{2}{5}$ of strip A is shaded.

$\frac{5}{8}$ of strip B is shaded.

The length of the rectangle is 40 cm.

What fraction of the rectangle is **not** shaded?

.....

(Total 4 marks)

Question 22 (AO3): 58% of students got this right (5 marks)

***5** James bought x candy bars at the store.
Lily bought twice as many candy bars than James.
Harry bought 3 candy bars more than James.

One candy bar costs £2.
In total, they paid £46.

Determine how many candy bars each person bought.
Show all steps in your calculations.

(Total 5 marks)

Question 23 (AO3): 58% of students got this right (3 marks)

2 Emily buys a pack of 12 bottles of water.
The pack costs £5.64.

Emily sells all 12 bottles for 50p each.

Work out Emily's percentage profit.
Give your answer correct to 1 decimal place.

Question 24 (AO1): 58% of students got this right (1 marks)

1 The table shows information about the heights of 80 children.

Height (h cm)	**Frequency**
$130 < h \leqslant 140$	4
$140 < h \leqslant 150$	11
$150 < h \leqslant 160$	24
$160 < h \leqslant 170$	22
$170 < h \leqslant 180$	19

(a) Find the class interval that contains the median.

Question 25 (AO1): 56% of students got this right (3 marks)

16. Derek buys a house for £150 000
He sells the house for £154 500

(a) Work out Derek's percentage profit.

RETEST QUESTION

Derek invests £154 500 for 2 years at 4% per year compound interest.

(b) Work out the value of the investment at the end of 2 years.

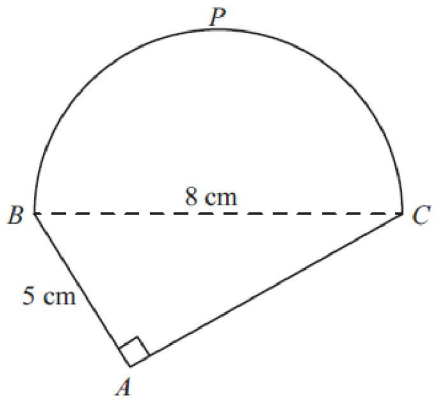
£.....

(3)

(Total for Question 16 is 6 marks)

Question 26 (AO3): 55% of students got this right (5 marks)

6. Here is a shape.



BPC is a semicircle.
BAC is a right-angled triangle.

BC = 8 cm.
AB = 5 cm.

Work out the perimeter of the shape.
Give your answer correct to 3 significant figures.

..... cm

(Total 5 marks)

Question 27 (AO1): 54% of students got this right (3 marks)

8. Solve $x + 2y = 3$

$x - y = 6$

Question 28 (AO3): 53% of students got this right (4 marks)

6 The density of apple juice is 1.05 grams per cm^3.

The density of fruit syrup is 1.4 grams per cm^3.

The density of carbonated water is 0.99 grams per cm^3.

25 cm^3 of apple juice are mixed with 15 cm^3 of fruit syrup and
280 cm^3 of carbonated water to make a drink with a volume of 320 cm^3.

Work out the density of the drink.
Give your answer correct to 2 decimal places.

(Total for Question 6 is 4 marks)

Question 29 (AO1): 52% of students got this right (2 marks)

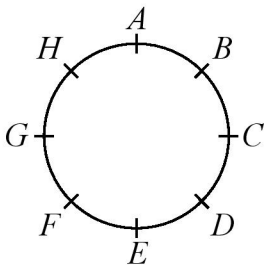
9

Construct the perpendicular bisector of the line segment *CD* using a ruler and compasses.
Show all your construction lines.

(Total 2 marks)

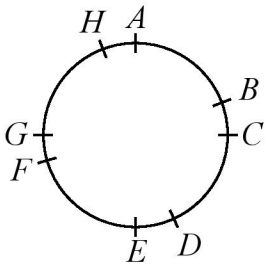
Question 30 (AO2): 52% of students got this right (1 marks)

3 Hasmeet walks once round a circle with diameter 80 metres.



There are 8 points equally spaced on the circumference of the circle.

Four of the points are moved, as shown in the diagram below.



Hasmeet walks once round the circle again.

(*b*) Has the mean distance that Hasmeet walks between one point and the next point changed?

You must give a reason for your answer.

Question 31 (AO1): 51% of students got this right (1 marks)

16 (*b*) Show that the equation $x^3 - 3x^2 + 3 = 0$ can be rearranged to give $x = \sqrt[3]{3x^2 - 3}$

Question 32 (AO1): 49% of students got this right (2 marks)

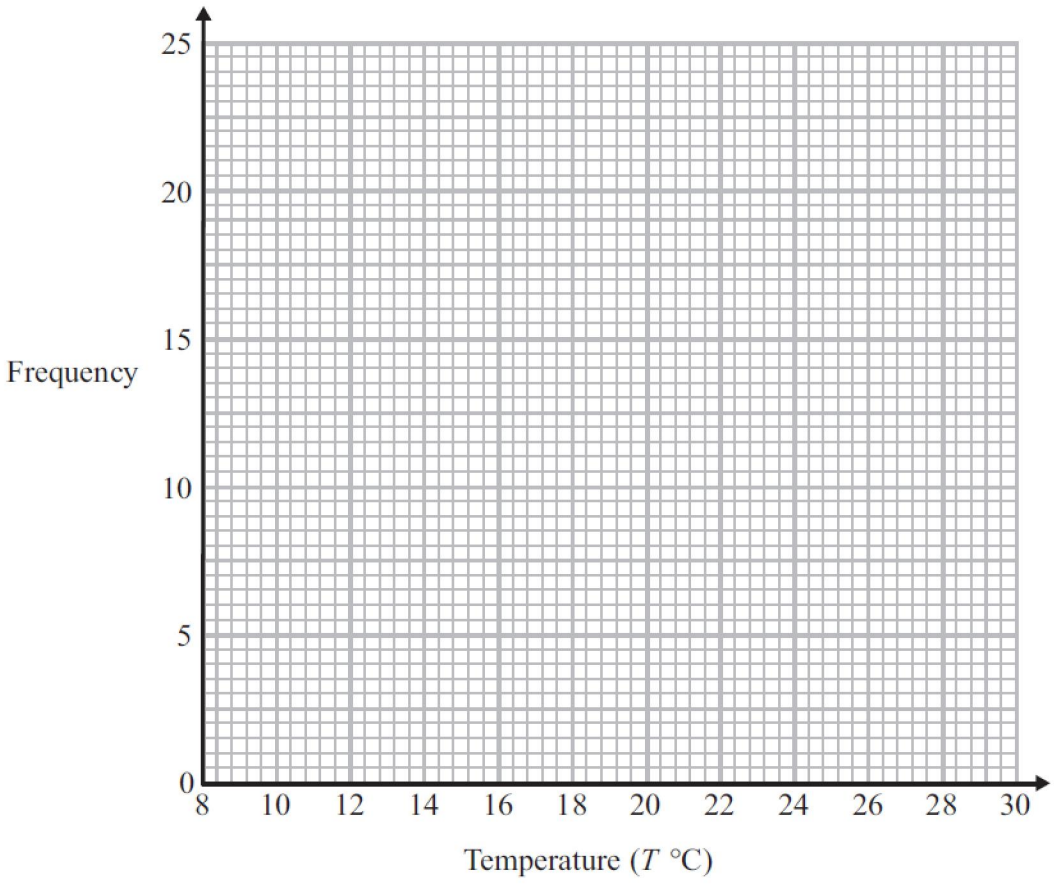
14. The table gives information about the temperature, T °C, at noon in a town for 50 days.

Temperature (T °C)	**Frequency**
$8 < T \leq 12$	6
$12 < T \leq 16$	8
$16 < T \leq 20$	13
$20 < T \leq 24$	21
$24 < T \leq 28$	2

(a) Write down the modal class interval.

RETEST QUESTION

(c) Draw a frequency polygon for the information in the table.



(2)

(Total for Question 14 is 7 marks)

Question 33 (AO1): 49% of students got this right (1 marks)

5 (*a*) Find the value of the reciprocal of 1.6.
Give your answer as a decimal.

Ext Qn1 (AO2): Only 40% of students got this right(4 marks)

19. Here is a triangle ABC.

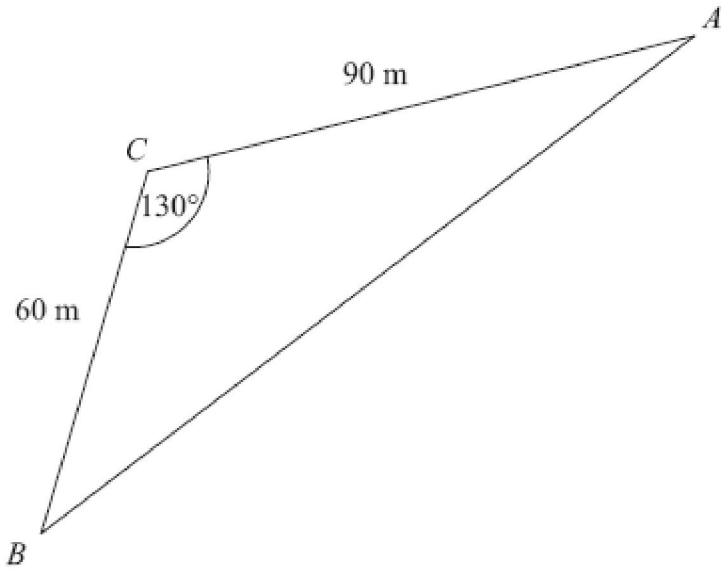


Diagram **NOT** accurately drawn

$AC = 90$ m.
$BC = 60$ m.
Angle $ACB = 130°$.

Calculate the perimeter of the triangle.
Give your answer correct to one decimal place.

..... m

(Total 4 marks)

Ext Qn2 (AO1): Only 40% of students got this right(3 marks)

16. The number of rabbits on a farm n months from now is R_n where

$R_0 = 200$

$R_{n+1} = 1.2R_n - 35$

How many rabbits will there be on the farm 3 months from now?

.....

(Total 3 marks)

Ext Qn3 (AO1): Only 40% of students got this right(3 marks)

10 Naoby invests £6000 for 5 years.
The investment gets compound interest of $x\%$ per annum.

At the end of 5 years the investment is worth £8029.35.

Work out the value of x.

(Total for Question 10 is 3 marks)

Answers to Qn 1 (AO2): 89% of students got this right

7 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.

$S = \frac{D}{T}$

$S = \frac{15}{6}$

$S = 2.5 \text{ mph}$

..... 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.

x3

x3 → 15 miles = 24km.

Therefore Sunita is correct, Peter walked 4km more than 20km.

Answers to Qn 2 (AO1): 88% of students got this right

Paper: 1MA1/2H				
Question	**Working**	**Answer**	**Mark**	**Notes**
6 (a)		6	B1	Cao

Answers to Qn 3 (AO1): 84% of students got this right

Paper: 1MA1/2H				
Question	**Working**	**Answer**	**Mark**	**Notes**
8 (b)		2.76	B1	for 2.76 ft from (a)

Answers to Qn 4 (AO2): 83% of students got this right

Question	Working	Answer	Mark	Notes
5 (a)		Evaluation	C1	for error correctly identified, can be in the working, e.g. circling

Answers to Qn 5 (AO1): 77% of students got this right

Paper: 1MA1/2H				
Question	**Working**	**Answer**	**Mark**	**Notes**
1		$1\frac{1}{2}$	M1	for correct expansion of the bracket or dividing all terms by 3 as a first step eg $3x - 3$ or $(5x - 6)/3 = 3(x - 1)/3$
			M1	for isolating terms in x on one side of an equation eg $5x - 6 - 3x = -3$ or both constants on one side of an equation, eg $5x = 3x - 3 + 6$, ft $5x - 6 = 3x - 1$
			A1	for $1\frac{1}{2}$ oe

Answers to Qn 6 (AO1): 72% of students got this right

13

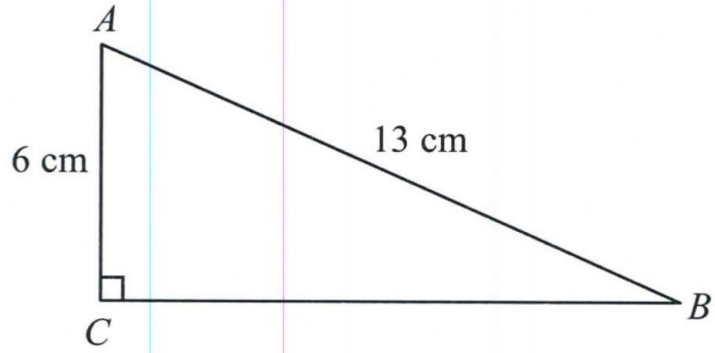


Diagram **NOT** accurately drawn

ABC is a right-angled triangle.
AC = 6 cm
AB = 13 cm

(a) Work out the length of *BC*.
Give your answer correct to 3 significant figures.

$BC^2 = 13^2 - 6^2$

$BC^2 = 169 - 36$

$BC = \sqrt{133} = 11.5$ cm

(3)

Answers to Qn 7 (AO1): 71% of students got this right

5 Ben goes on holiday to Hong Kong.

In Hong Kong, Ben sees a camera costing HK$3179.55
In London, an identical camera costs £285

The exchange rate is £1 = HK$12.30

Ben buys the camera in Hong Kong.

How much cheaper is the camera in Hong Kong than in London?

Method 1: change £285 to HK$

£1 = HK$12.30

£285 = HK$3505.50 in London

HK$3179.55 in Hong Kong

HK$325.95 cheaper in Hong Kong

OR

Method 2: change HK$3179.55 to £

£1 : HK$12.30) × 3179.55 / 12.30

£258.50 : HK$3179.55

in Hong Kong

(Total for Question 5 is 3 marks)

£285 − £258.50 = £26.50 cheaper in Hong Kong

Answers to Qn 8 (AO1): 70% of students got this right

11 (b) Expand and simplify $(2x + 1)(x - 4)$

$= 2x^2 - 8x + x - 4$

$= 2x^2 - 7x - 4$

(2)

(c) Factorise completely $6y^2 - 9xy$

$3(2y^2 - 3xy)$

(1) mark

$3y(2y - 3x)$ ✓

(2) marks

(2)

Answers to Qn 10 (AO1): 64% of students got this right

Question		Working	Answer	Mark	Notes
11			$x^3 + 6x^2 - 24x - 64$	M1	for a method to find the product of any two linear expressions, e.g. 3 correct terms or 4 correct terms ignoring signs, e.g. $(x + 2)(x + 8) = x^2 + 10x + 16$, **or** $(x + 8)(x - 4) = x^2 + 4x - 32$, **or** $(x + 2)(x - 4) = x^2 - 2x - 8$
				M1	for a method of 6 products, 4 of which are correct (ft from their first product) **or** a method of 8 products 6 of which are correct
				A1	cao

Answers to Qn 11 (AO3): 63% of students got this right

Question		Working	Answer	Mark	Notes
2		$16 \times 7 = 112$ $112 - 87$	25	2	M1 for 6×14.5 (= 87) or 7×16 (=112) or 6×1.5 (= 9) or 7×1.5 (= 10.5) A1 for 25

Answers to Qn 12 (AO2): 63% of students got this right

*7 Plants are sold in three different sizes of tray.

A small tray of 30 plants costs £6.50
A medium tray of 40 plants costs £8.95
A large tray of 50 plants costs £10.99

Kaz wants to buy the tray of plants that is the best value for money.

Which size tray of plants should she buy?
You must show all your working.

Small

30 plants = £6.50

÷3 ↓

10 plants = £2.16

Medium

40 plants = £8.95

10 plants = £2.2375

Large

50 = £10.99

10 = £2.198

They should buy the small tray because they are the cheapest per 10 plants purchased.

Answers to Qn 13 (AO2): 62% of students got this right

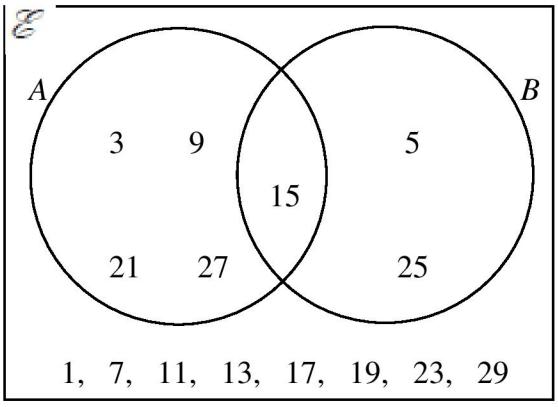
Question		Working	Answer	Mark	Notes
3			A and 3 B and 2 C and 4 D and 1	2	B2 for all 4 correct (B1 for 2 correct)

Answers to Qn 14 (AO1): 62% of students got this right

Question		Working	Answer	Mark	Notes
13			E, C, D, A, B	B3	for all correct (B2 for 3 or 4 correct B1 for 1 or 2 correct)

Answers to Qn 15 (AO1): 61% of students got this right

Question 1 (Total 6 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
(a)		B1	This mark is given for labels on the Venn diagram
		M1	This mark is given for 15 shown in the intersection
		M1	This mark is given for 5 and 25 in only set B or 3, 9, 21 and 27 in only set A or 1, 7, 11, 13, 17, 19, 23, 29 in $(A \cup B)'$
		C1	This mark is given for all numbers correctly placed in the Venn Diagram
(b)	$\frac{7}{a}$ where $a \geq 7$ or $\frac{b}{15}$, where $b \leq 15$	P1	This mark is given for a correct numerator or denominator
	$\frac{7}{15}$	A1	This mark is given for the correct answer only

Answers to Qn 16 (AO3): 61% of students got this right

Paper 1MA1: 2H			
Question	**Working**	**Answer**	**Notes**
10 (a)	$1560000 \times (1.052)^2$	1730000	P1 for process to find population in 2016 P1 for complete process to find population in 2017 A1 for 1725000 - 1730000
(b)(i)		2020	P1 for process to find when population will exceed 2 000 000 A1 for 2020
(ii)			C1 for correct comment on how assumption will affect the answer, eg if the percentage growth is higher the population may exceed 2 000 000 earlier.

Answers to Qn 17 (AO1): 60% of students got this right

$(-3)^3 - 4(-3) = -27 + 12 = -15$

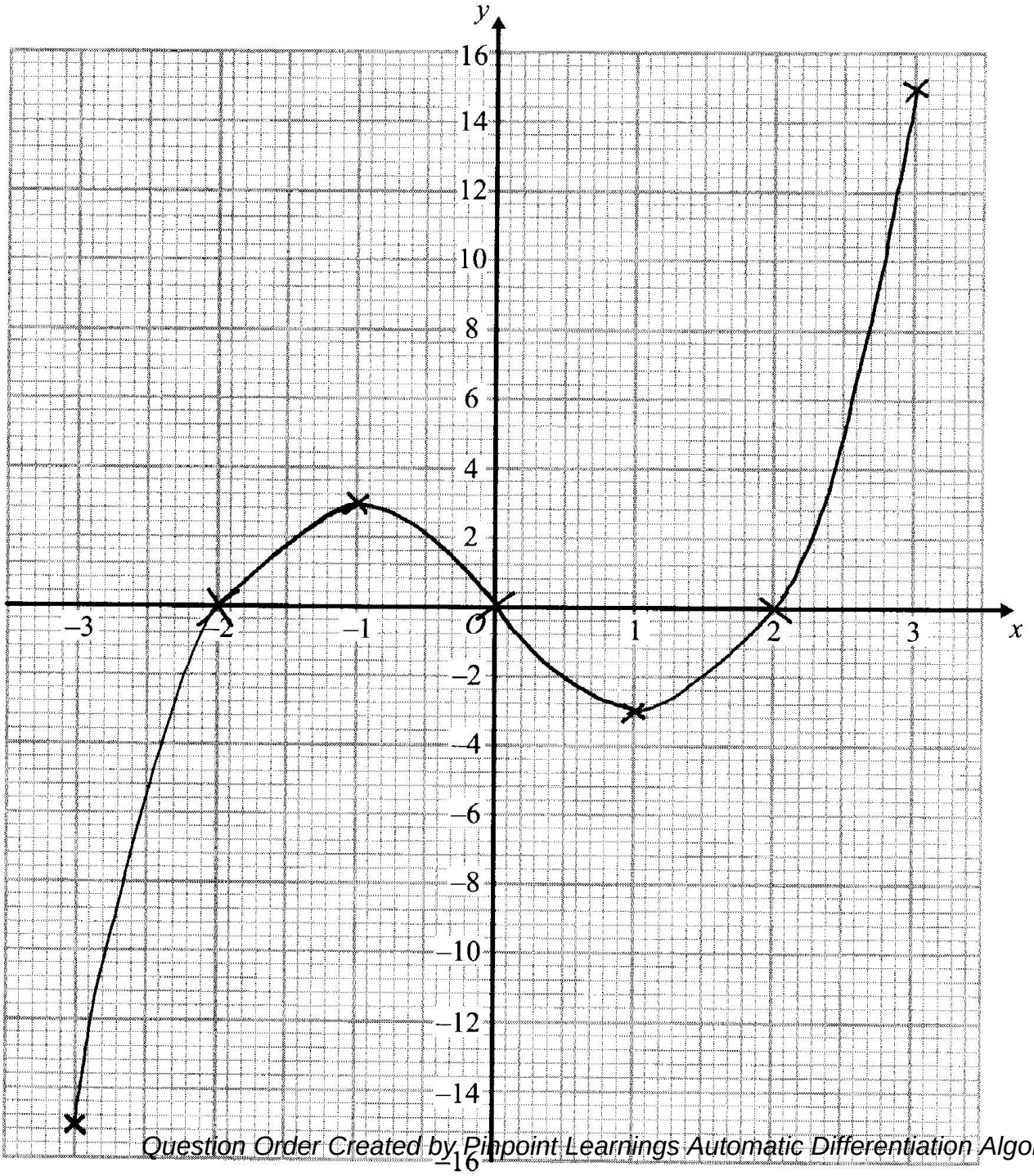
$(-2)^3 - 4(-2) = -8 + 8 = 0$

17 (a) Complete the table of values for $y = x^3 - 4x$

x	−3	−2	−1	0	1	2	3
y	−15	0	3	0	−3	0	15

(2)

(b) On the grid, draw the graph of $y = x^3 - 4x$ from $x = -3$ to $x = 3$



Answers to Qn 18 (AO2): 60% of students got this right

9 The diagram shows a pattern using four identical rhombuses.

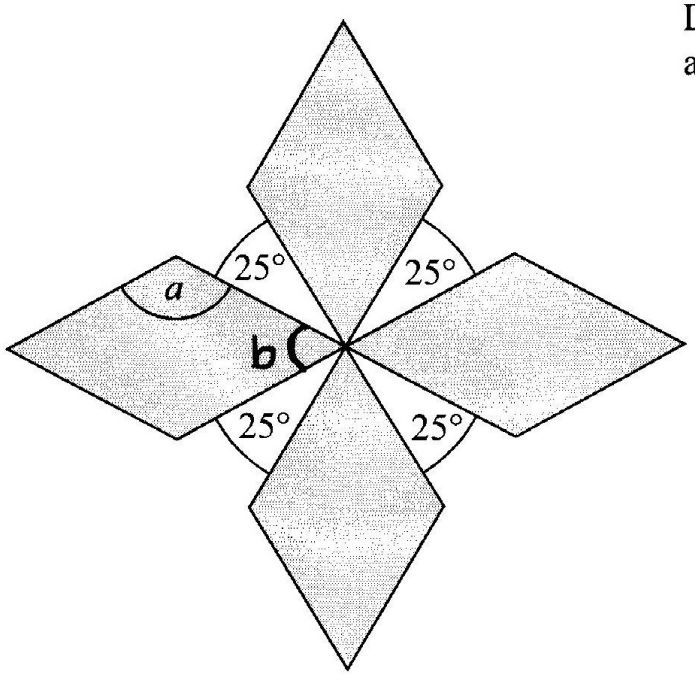


Diagram **NOT** accurately drawn

Work out the size of the angle marked *a*.
You must show your working.

$$b = \frac{360 - 100}{4}$$

$$b = \frac{260}{4} = 65^\circ$$

$$a = \frac{360 - 2b}{2}$$

$$= \frac{360 - 2 \times 65}{2}$$

$$= \frac{360 - 130}{2}$$

$$= 230$$

Answers to Qn 19 (AO2): 60% of students got this right

8 Here are the first four terms of an arithmetic sequence.

3 10 17 24

(a) Find, in terms of n, an expression for the nth term of this arithmetic sequence.

+7

$7n - 4$

$7n-4$

(2)

(b) Is 150 a term of this sequence?

You must explain how you get your answer.

$150 = 7n - 4$

$154 = 7n$

$n = 22$

Yes, 150 is the 22nd term.

Answers to Qn 20 (AO2): 59% of students got this right

7 Calculate the value of $\sqrt{\dfrac{\tan 60° + 1}{\tan 60° - 1}}$

Write down all the figures on your calculator display.
You must give your answer as a decimal.

$\sqrt{\dfrac{2.73\ldots}{0.732\ldots}}$

$= 1.931851$

Answers to Qn 21 (AO3): 58% of students got this right

Question		Working	Answer	Mark	Notes
1			$\frac{39}{80}$	4	M1 for a correct method to find $\frac{2}{5}$ of 40; eg. $40 \div 5 \times 2$ (= 16) **or** for a correct method to find $\frac{5}{8}$ of 40; eg. $40 \div 8 \times 5$ (= 25) M1 for a correct method to find $\frac{2}{5}$ of 40 **and** $\frac{5}{8}$ of 40 M1 (dep on M1) for 80 – "16" – "25" (= 39) or $\frac{"16"+"25"}{80}$ (= $\frac{41}{80}$) A1 $\frac{39}{80}$ oe **OR** M1 for $1-\frac{2}{5}$ (= $\frac{3}{5}$) **and** $1-\frac{5}{8}$ (= $\frac{3}{8}$) M1 for a correct method to find $\frac{3}{5}$ of 40; eg. $40 \div 5 \times 3$ (= 24) **or** for a correct method to find $\frac{3}{8}$ of 40; eg. $40 \div 8 \times 3$ (= 15) M1 (dep on M1) for "24" + "15" (= 39) A1 $\frac{39}{80}$ oe

Answers to Qn 22 (AO3): 58% of students got this right

***5** Redlands School sent x students to a revision day. $2x$
St Samuel's School sent twice as many students as Redlands School.
Francis Long School sent 7 fewer students than Redlands School. $x-7$

Each student paid £15 for the revision day.
The students paid a total of £1155

Work out how many students were sent by each school to the revision day.
You must show all your working.

$\frac{1155}{15} = 77$

$x + 2x + x - 7 = 77$

$4x - 7 = 77$

$4x = 84$

$x = 21$

Redlands: 21

St. Sam's: 42

Francis Log: 14

Answers to Qn 23 (AO3): 58% of students got this right

Paper: 1MA1/2H				
Question	**Working**	**Answer**	**Mark**	**Notes**
2	£6 − £5.64 = 36p or 50p – 47p = 3p	6.4	P1	for a strategy to compare the same number of bottles e.g. £5.64 ÷ 12 (= 47 or 0.47) or 12 × 50p (= 6 or 600) or 36 or 0.36 or 3 or 0.03
			P1	for start of process to find percentage profit e.g. $\frac{"36"}{564}$ or $\frac{"3"}{"47"}$ or $\frac{"6"}{5.64}$ or $\frac{50}{"47"}$ oe with consistent units
	6.3829787…%		A1	for answer in the range 6.3 to 6.4

Answers to Qn 24 (AO1): 58% of students got this right

Part	Working or answer an examiner might expect to see	Mark	Notes
1 (a)	$160 < h \leq 170$	1	This mark is given for the correct answer only

Answers to Qn 25 (AO1): 56% of students got this right

16 Derek invests £154 500 for 2 years at 4% per year compound interest.

(b) Work out the value of the investment at the end of 2 years.

$154500 \times (1.04)^2$

$= £167107.20$

Answers to Qn 26 (AO3): 55% of students got this right

Question		Working	Answer	Mark	Notes
6		$2 \times 10 \cos 70$ OR $BC^2 = 10^2 + 10^2 - 2 \times 10 \times 10 \times \cos 40$ $BC = \sqrt{46.79(1....)}$	6.84	4	M1 for $180 - 2\times70$ M1 for $\frac{10}{\sin 70} = \frac{BC}{\sin(180-2\times70)}$ M1 for $BC = \frac{\sin(180-2\times70)\times10}{\sin 70}$ A1 for 6.84(0…) **OR** M1 for $180 - 2\times70$ M1 for $10^2 + 10^2 - 2\times10\times10\times\cos(180 - 2\times70)$ M1 for $\sqrt{'46.79(1....)'}$ A1 for 6.84(0…) M1 for perpendicular from A to BC, may be implied by correct working M1 for $10\times\cos70$ or $10\times\sin20$ or correct attempt to use sin or cos M1 for $2\times$ '$10\times\cos70$' A1 for 6.84(0...)

Answers to Qn 27 (AO1): 54% of students got this right

Question		Working	Answer	Mark	Notes
8		$2y - -y = 3 - 6$ or $x + 2x = 3 + 12$	$x = 5, y = -1$	3	M1 for a complete method to eliminate one variable (condone one arithmetic error) A1 $x = 5$ A1 $y = -1$ NB: Candidates showing no working score 0 marks

Answers to Qn 28 (AO3): 53% of students got this right

Question 6 (Total 4 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	apple juice $25 \times 1.05 = 26.25$ fruit syrup $15 \times 1.4 = 21$ water $280 \times 0.99 = 277.2$	P1	This mark is given for finding the mass of at least one of the liquid
	$26.25 + 21 + 277.2 = 324.45$	P1	This mark is given for a complete process to find the total mass of the drink
	$324.45 \div 320 = 1.0139062$	P1	This mark is given for a complete process to find the density of the drink
	1.01	A1	This mark is given for an answer in the range 1.01 to 1.014

Answers to Qn 29 (AO1): 52% of students got this right

9			Correct line drawn	2	M1 for two pairs of relevant arcs drawn A1 correct line drawn (with arcs) SC B1 Correct line no arcs visible

Answers to Qn 30 (AO2): 52% of students got this right

Paper: 1MA1/2H				
Question	**Working**	**Answer**	**Mark**	**Notes**
3 (b)		No (supported)	C1	Mean distance stays the same with reason, eg total distance remains unchanged or same number of points

Answers to Qn 31 (AO1): 51% of students got this right

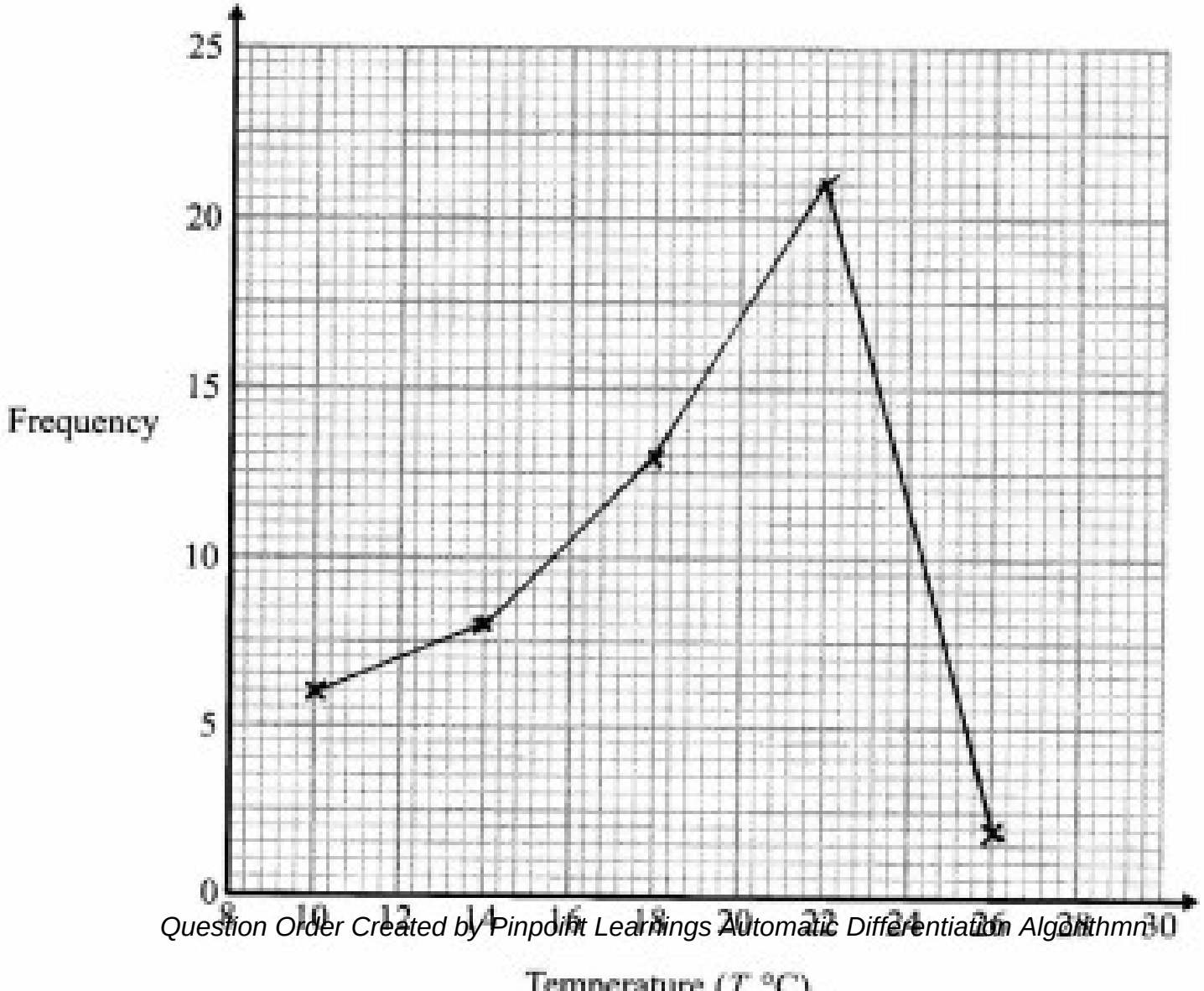
Question	Working	Answer	Mark	Notes
16 (b)		Shown	C1	for at least $x^3 = 3x^2 - 3$ and no incorrect steps.

Answers to Qn 32 (AO1): 49% of students got this right

14 The table gives information about the temperature, T °C, at noon in a town for 50 days.

Temperature (T °C)	Frequency	mp	F
$8 < T \leqslant 12$	6	10	60
$12 < T \leqslant 16$	8	14	112
$16 < T \leqslant 20$	13	18	234
$20 < T \leqslant 24$	21	22	462
$24 < T \leqslant 28$	2	26	52
	$\Sigma F = 50$		910

(c) Draw a frequency polygon for the information in the table.



Answers to Qn 33 (AO1): 49% of students got this right

Part	Working or answer an examiner might expect to see	Mark	Notes
5 (a)	$\frac{1}{1.6} = 0.625$	1	This mark is given for the correct answer only

Ext ANSWERS 1 (AO2): Only 40% of students got this right(4 mark

19.		$c^2 = 60^2 + 90^2 - 2 \times 60 \times 90 \times \cos 130^\circ$ $c^2 = 3600 + 8100 - 10\,800 \times -0.6427876$ $c^2 = 11\,700 + 6942.106$ $c^2 = 18642.106$ $c = \sqrt{18642.106} = 136.536$ Perimeter $= 60 + 90 + 136.536$	286.5	4	M1 for substituting values correctly into cosine rule formula e.g. $60^2 + 90^2 - 2 \times 60 \times 90 \times \cos 130^\circ$ M1 for correct order of evaluation A1 for finding value of missing side in range 136 to 137 A1 for answer in range 286 to 287

Ext ANSWERS 2 (AO1): Only 40% of students got this right(3 mark

		16.	218	3	M1 for $1.2 \times 200 - 35$ (= 205) (oe) M1 for complete iterative method, e.g. 2 months: $1.2 \times$ "205" – 35 3 months: $1.2 \times$ "211"– 35 A1 for 218, accept 218.2

Ext ANSWERS 3 (AO1): Only 40% of students got this right(3 mark

Question 10 (Total 3 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	8029.35 ÷ 6000 = 1.338225	P1	This mark is given for a process to start to solve the problem
	$\sqrt[5]{1.338225}$ = 1.0599	P1	This mark is given for a process to find the fifth root
	6 (%)	A1	This mark is given for an answer in the range 5.99 – 6