PINPOINT LEARNING

PAPER THREE REVISION PACKS

25_to_54_Percent_Pinpoint_AI_Pack

Time Allocation = 95mins , Max = 84 Marks

Calculated Grade Boundaries:

Grade	Marks
1-	17
1	34
1+	51
2-	68
2	84

Question 1 (AO1): 75% of students got this right (1 marks)

1   Write 35 835 correct to the nearest 1000

....

(Total for Question 1 is 1 mark)

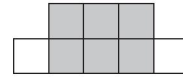# Question 2 (AO1): 74% of students got this right (2 marks)

5b Here is a sequence of patterns made from grey squares and white squares.

pattern number 1   pattern number 2   pattern number 3

(b) Work out the total number of squares needed to make pattern number 7

....

(2)

Question 3 (AO1): 74% of students got this right (4 marks)

9. On 1st June, Brian has £312 in his bank account.

On 5th June he puts £120 into his bank account.

On 10th June he puts £25 into his bank account.

This is how much Brian spends from his bank account from 1st June to 15th June.

Supermarket £42.40
Mobile phone bill £21.05
Grocery shop £24.30
Electricity bill £64.20
Online book purchase £18.32
Council tax £144.50
Clothes £84.20
Supermarket £51.35

On 16th June, Brian wants to know how much money there is in his bank account.

Work out how much money there is in his bank account.

Question 4 (AO1): 73% of students got this right (1 marks)

16 A sprinter runs a distance of 200 metres in 25 seconds.

Work out the average speed of the sprinter.

Question 5 (AO1): 73% of students got this right (5 marks)

12. George and Harry work in a factory.

They use this rule to calculate their total pay in pounds.

Total pay = 8 × number of hours worked + bonus

George worked 30 hours.
He was paid a bonus of £20

(a) Work out George's total pay.

Harry worked 34 hours.
His total pay was £300

(b) Work out the bonus that Harry was paid.

Question 6 (AO1): 72% of students got this right (2 marks)

5 A bowl contains

       1 apple
      1 banana
      1 orange
   and 1 peach

Jess takes 3 pieces of fruit from the bowl.

Write down all the possible combinations of fruit that Jess can take.

....

....

....

....

(Total for Question 5 is 2 marks)

Question 7 (AO1): 70% of students got this right (2 marks)

5   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?

Question 8 (AO2): 69% of students got this right (1 marks)

14   What is the **maximum possible** order of rotational symmetry of a quadrilateral?

Circle your answer.

[1 mark]

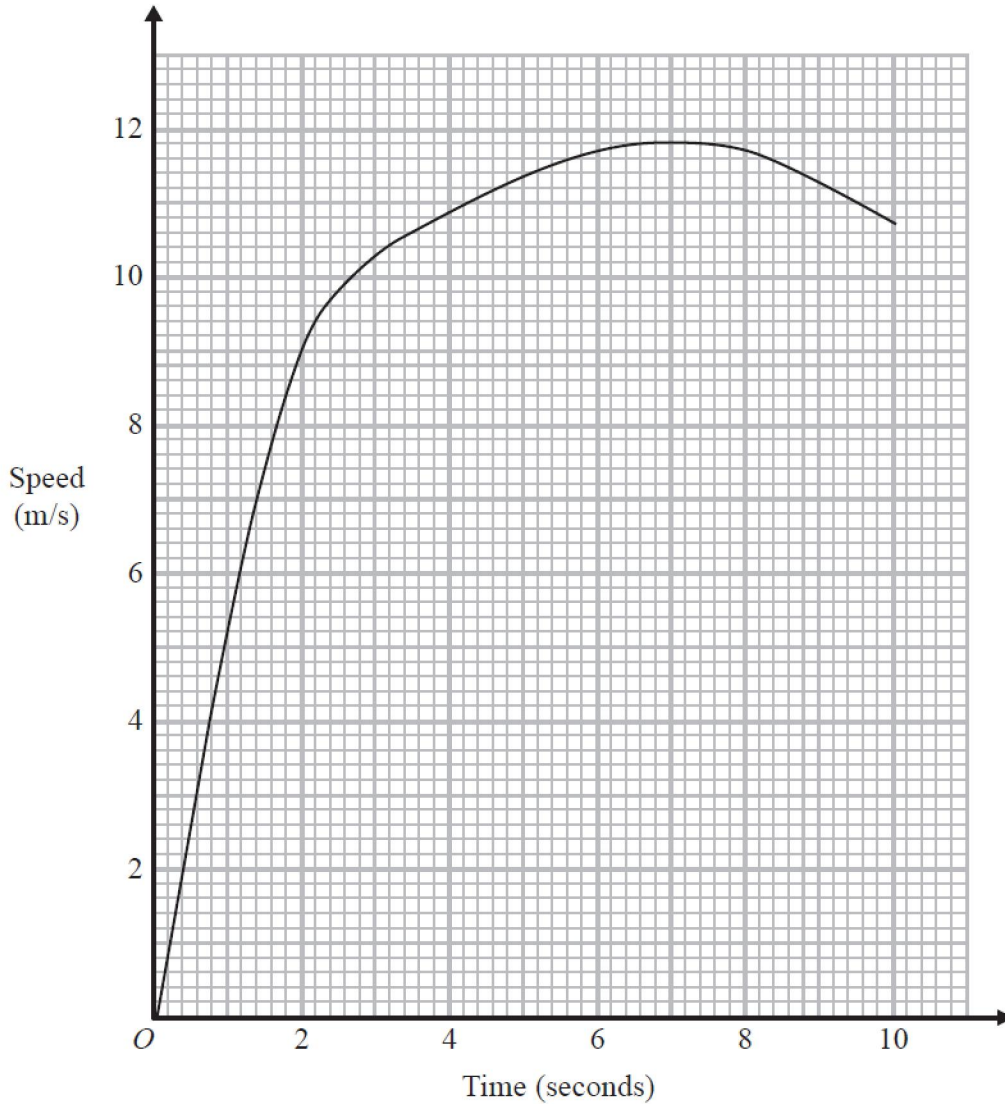1   2   4   8

Question 9 (AO1): 68% of students got this right (3 marks)

8. Usain runs in a race.
    The graph shows his speed, in metres per second (m/s), during the first 10 seconds of the race.

(*a*) Write down Usain's speed at 2 seconds.

.... m/s
(1)

(*b*) Write down Usain's greatest speed.

.... m/s
(1)

(*c*) Write down the time at which Usain's speed was 7 m/s.

.... seconds
(1)

(Total 3 marks)

Question 10 (AO1): 66% of students got this right (3 marks)

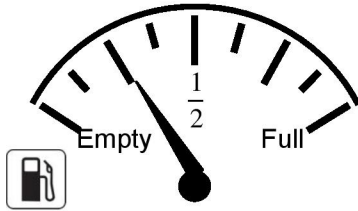4. The scale shows the total weight of 3 boxes.
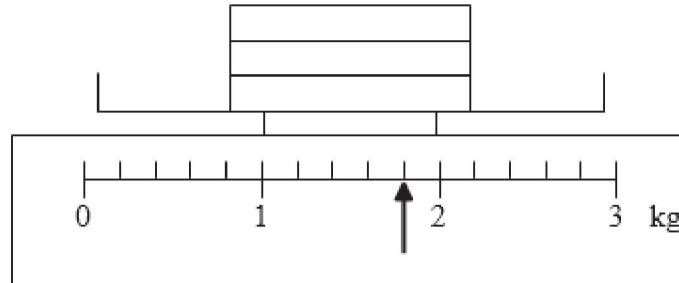
Each box is the same weight.

Work out the weight of one box.

.... kg

(Total 3 mark)

_____

Question 11 (AO1): 65% of students got this right (2 marks)

5.   A petrol tank holds 48 litres of petrol when it is full.

The scale shows information about how much petrol there is in the petrol tank.

Work out the number of litres of petrol in the petrol tank.

Question 12 (AO1): 64% of students got this right (3 marks)

11   The first three terms of a number pattern are   1   2   4

Hester says the first five terms of this number pattern are   1   2   4   8   16

(*a*) Write down the rule Hester could have used to get the 4th and 5th terms.

(*b*) Write down the 6th term of Hester's number pattern.

Jack uses a different rule.

He says the first six terms of the number pattern are   1   2   4   7   11   16

(*c*) Write down the 7th and 8th terms of Jack's number pattern.

Question 13 (AO1): 64% of students got this right (2 marks)

8. Noah got 8 out of 20 in a test.

Write 8 out of 20 as a percentage.

.... %

(Total 2 marks)

_____

Question 14 (AO2): 63% of students got this right (4 marks)

7. Jane wants to buy some compost.
    Both Suttons Shop and Greens Garden Shop sell compost.

Suttons Shop

Bags of compost

20 litres

£2.25 each bag
£3.25 for 2 bags

Greens Garden Shop

Bags of compost

70 litres

£4.99 each bag

Jane needs 140 litres of compost.
She wants to buy all the compost from the same shop.
She wants to buy the compost as cheaply as possible.

Which shop should Jane buy the compost from?
You must show all your working.

(Total 4 marks)
_____

Question 15 (AO1): 63% of students got this right (2 marks)

6   1 kg = 2.2 pounds

Change 319 pounds to kg.

Question 16 (AO1): 62% of students got this right (1 marks)

2   Here is a list of numbers.
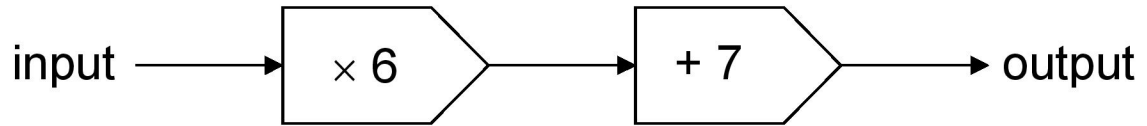
$$10 \qquad 16 \qquad 21 \qquad 28 \qquad 43$$

One of these numbers is a power of 2.

Which number?

Question 17 (AO1): 62% of students got this right (2 marks)

9 Here is a number machine.

input ⟶ ×6 ⟶ +7 ⟶ output

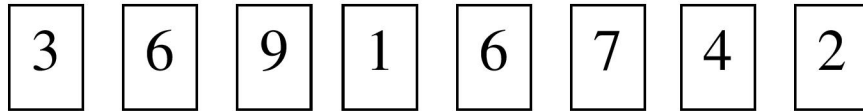*(c)* Find the input when the output is 79

Question 18 (AO1): 61% of students got this right (1 marks)

7a Matthew has eight cards.
There is a number on each card.

| 3 | 6 | 9 | 1 | 6 | 7 | 4 | 2 |

(a) Work out the range of the numbers on the cards.

....

(1)

Question 19 (AO2): 59% of students got this right (3 marks)

11 Jack's driving school has two offers.

| **Offer 1**	**Offer 2**
First driving lesson free	All driving lessons
All other driving lessons normal price	5% off the normal price

The normal price of a driving lesson is £24.

Douglas is going to have 12 driving lessons.

Which is the cheaper offer for 12 driving lessons, Offer 1 or Offer 2?
You must show how you get your answer.

Question 20 (AO1): 58% of students got this right (5 marks)

14. John cleans carpets of different areas.
He uses this graph to work out the cost of cleaning a carpet.
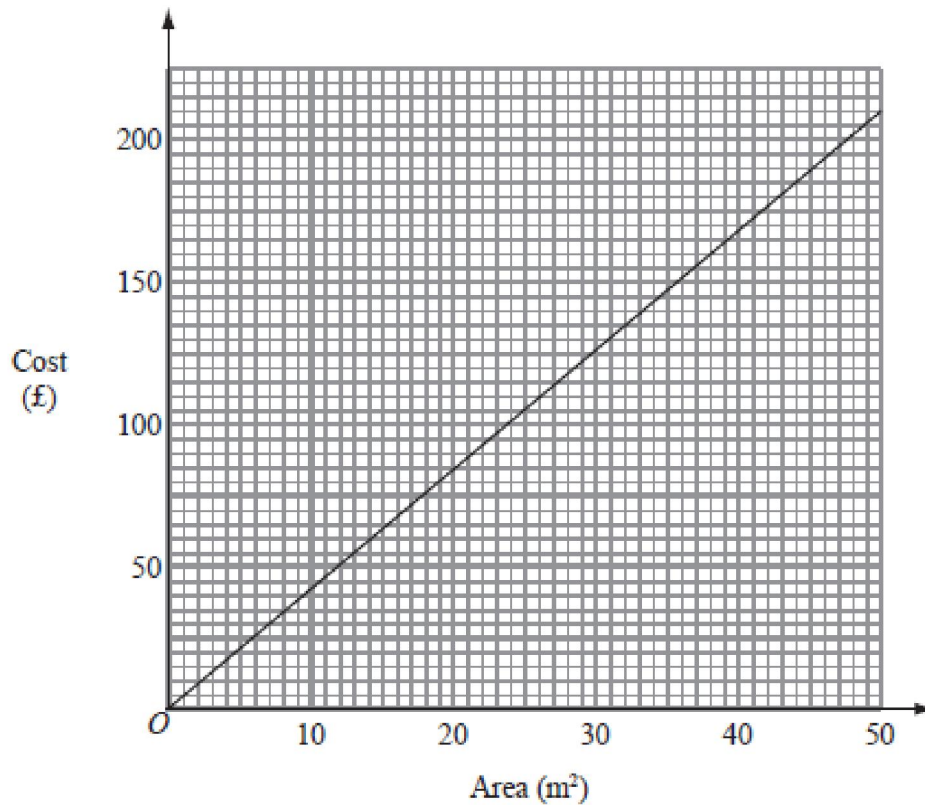
A carpet has an area of 30 m^2.

(a) Use the graph to find the cost of cleaning this carpet.

It costs £150 to clean another carpet.

(b) Use the graph to find the area of this carpet.

A rectangular carpet has a length of 8.6 m.
It has a width of 5 m.

(c) Work out the cost of cleaning this carpet.

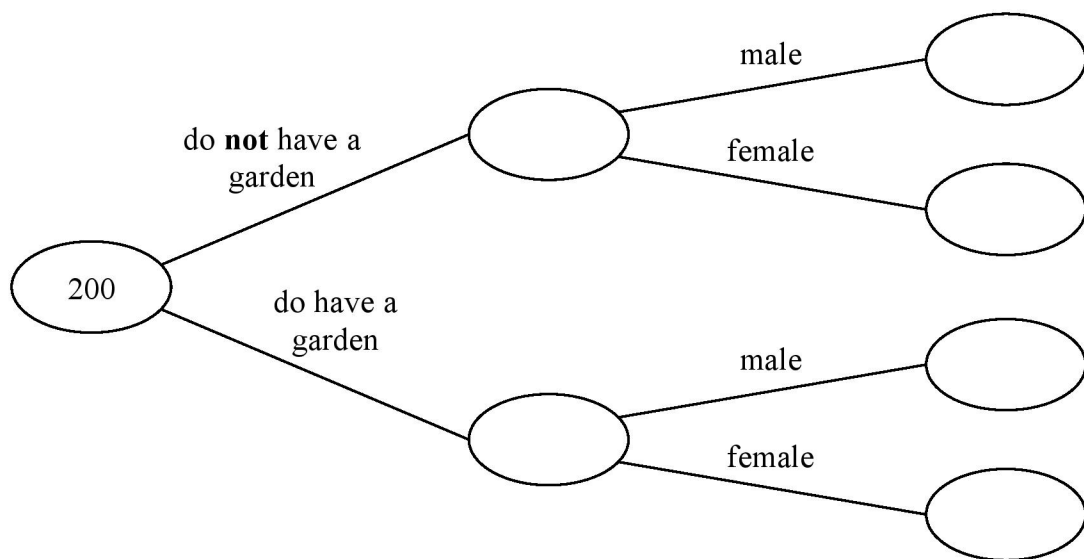# Question 21 (AO2): 57% of students got this right (2 marks)

12 200 people live in a village.

23 people do **not** have a garden.
10 males do **not** have a garden.
95 people are male.

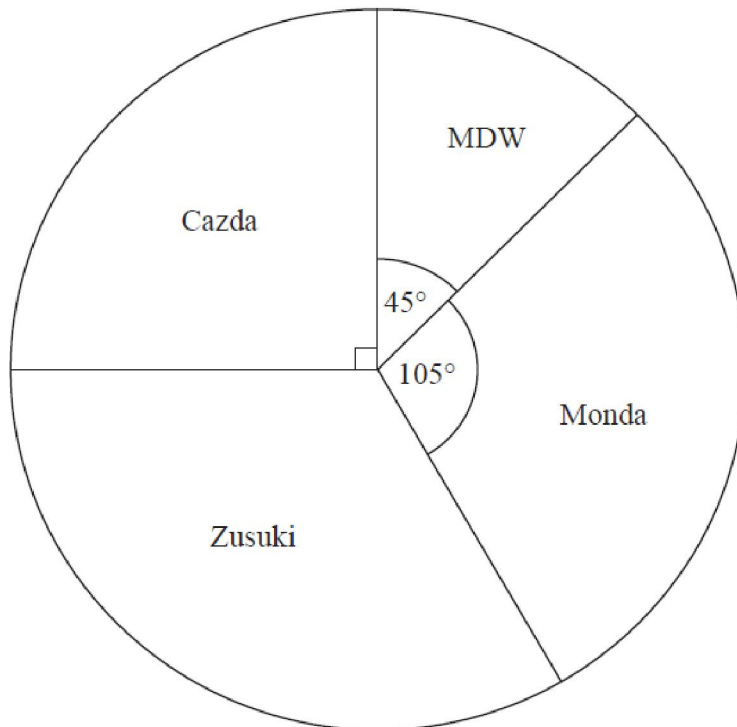Use this information to complete the frequency tree.

One of the people who does **not** have a garden is chosen at random.

(*b*) Write down the probability that this person is female.

Question 22 (AO1): 57% of students got this right (4 marks)

6. Some drivers are asked which make of car they like best.

    The pie chart and table show some information about their answers.

    Complete the table.

Make of car	Number of drivers	Angle of sector
MDW	18	45°
Cazda	....	90°
Zusuki	48	....
Monda	....	105°

(Total 4 marks)

_____

Question 23 (AO2): 53% of students got this right (3 marks)

10   This accurate scale drawing shows the positions of three villages, *A*, *B* and *C*.
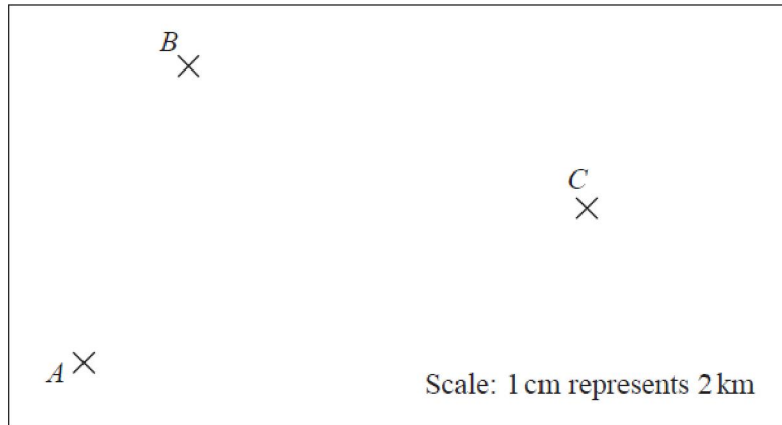
Scale: 1 cm represents 2 km

Tom walks from *A* to *B*.
He then walks from *B* to *C*.

Amy walks from *A* to *C*.

Tom walks more kilometres than Amy walks.

How many more?

....

(Total for Question 10 is 3 marks)

Question 24 (AO1): 52% of students got this right (3 marks)

4 Ken buys some fruit.

He buys apples, bananas, peaches and oranges.
Ken buys

      4 apples   weighing 125 g each
      2 bananas   weighing 170 g each
      3 peaches   weighing 135 g each

Each orange has a weight of 90 g.

The fruit has a total weight of 1.785 kg.

(*a*) Work out how many oranges Ken buys.

Question 25 (AO2): 49% of students got this right (5 marks)

11. Here is a rule for working out the volume of a pyramid.

> Multiply the base area by the height and
>
> then divide by 3

A pyramid has a base area of 9 cm² and a height of 4 cm.

(*a*) Use the rule to work out the volume of this pyramid.

.... cm³

(2)

A different pyramid has a volume of 20 cm³.
The base area of this pyramid is 10 cm².

(*b*) Work out the height of this pyramid.

.... cm

(3)

(Total 5 marks)

Question 26 (AO1): 49% of students got this right (1 marks)

2. Write down an even cube number.

....

(Total for Question 2 is 1 mark)

_____

Question 27 (AO1): 49% of students got this right (3 marks)

18 Claire buys a new car for £5700.

She pays a deposit of 12%

She then pays the rest of the cost in 15 equal monthly payments.

How much is each monthly payment?

Question 28 (AO2): 49% of students got this right (1 marks)

9 The smallest angle of a triangle is 25°.
The triangle is enlarged by scale factor 3.

Ben says,

"The smallest angle of the enlarged triangle is 75° because 25 × 3 = 75"

Is Ben right?
Explain your answer.

Question 29 (AO1): 48% of students got this right (1 marks)

13. The table shows some information about the ages of 60 teachers.

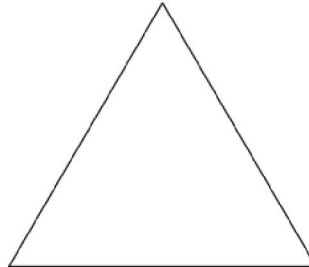| Age (*a* years)	Frequency
$20 < a \leq 30$	6
$30 < a \leq 40$	16
$40 < a \leq 50$	14
$50 < a \leq 60$	22
$60 < a \leq 70$	2

(*a*) Write down the modal class interval.

....

(1)

Question 30 (AO3): 48% of students got this right (3 marks)

4.   Here is an equilateral triangle.

The equilateral triangle has a perimeter of 24 cm.

Three of these equilateral triangles are used to make this trapezium.
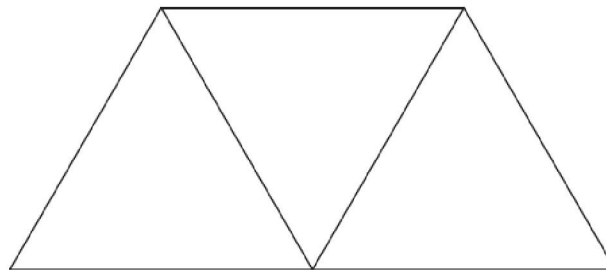
Work out the perimeter of the trapezium.

.... cm

(Total 3 marks)

_____

Question 31 (AO1): 48% of students got this right (1 marks)

21 $p^3 \times p^x = p^9$

(*a*) Find the value of x.

Question 32 (AO2): 47% of students got this right (2 marks)

14 a and b are odd numbers.

(a) Give an example to show that the value of $2(a + b)$ is a multiple of 4.

Question 33 (AO2): 47% of students got this right (2 marks)

10. Jim says,

"When you subtract a number from 10, the answer will always be less than 10"

(a) Is Jim correct?
You must give a reason with you answer.

Lucy says,

"When you halve a whole number that ends in 4, you always get a number that ends in 2"

(b) Write down an example to show that Lucy is wrong.

Question 34 (AO1): 46% of students got this right (2 marks)

16. Fayyaz bought a mobile phone for £180
    He sold it at a profit of 22%

    How much money did Fayyaz sell the mobile phone for?

    ....

    (Total for Question 16 is 2 marks)

_____

Question 35 (AO1): 46% of students got this right (2 marks)

9.   (*d*) Expand and simplify $(x + 4)(x + 7)$

....

(2)

_____

Ext Qn1 (AO1): Only 38% of students got this right(4 marks)

5   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

(*b*) Complete the pie chart for the information in the table.
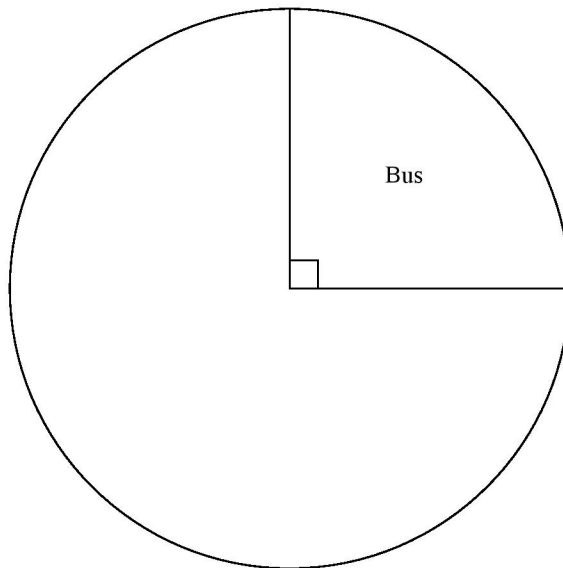
Ext Qn2 (AO1): Only 38% of students got this right(2 marks)

23   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.

Ext Qn3 (AO1): Only 38% of students got this right(2 marks)

21   Here are the first five terms of an arithmetic sequence.

$$-3 \qquad 1 \qquad 5 \qquad 9 \qquad 13$$

Find an expression, in terms of n, for the nth term of this sequence.

Answers to Qn 1 (AO1): 75% of students got this right

1   Write 35 835 correct to the nearest 1000

36 000

Answers to Qn 2 (AO1): 74% of students got this right

5b Here is a sequence of patterns made from grey squares and white squares.

pattern number 1   pattern number 2   pattern number 3
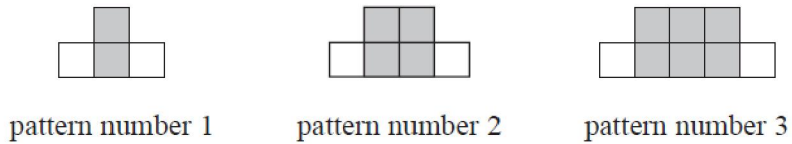
(b) Work out the total number of squares needed to make pattern number 7

4, 6, 8, 10, 12, 14, 16

16

Answers to Qn 3 (AO1): 74% of students got this right

Question		Working	Answer	Mark	Notes
9		Balance = £312 + £145 = £457 Sum of items = £450.32 Final balance = £6.68	6.68	4	M1 adding the items (= 450.32) M1 312 + 120 + 25 M1 "312 + 120 + 25"-"450.32" A1 cao

Answers to Qn 4 (AO1): 73% of students got this right

Paper 1MA1: 2F			
Question	Working	Answer	Notes
16		8	B1　cao

Answers to Qn 5 (AO1): 73% of students got this right

Question		Working	Answer	Mark	Notes
12	(a)	8 ✕ 30 + 20	260	2	M1 for 8 ✕ 30 + 20
					A1 cao
	(b)	34 ✕ 8 = 272	28	3	M1 for 34 ✕ 8 or 272 or forming equation
		300 – 272			M1 dep for 300 – "272"
					A1 cao
		OR			**OR**
		34 ✕ 8 + b = 300			M1 300 = 34 × 8+b
		272 + b = 300			M1 300 –"34×8"=b
		b = 300–272			A1 cao

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

5 A bowl contains

> 1 apple
> 1 banana
> 1 orange
> and 1 peach

Jess takes 3 pieces of fruit from the bowl.

Write down all the possible combinations of fruit that Jess can take.

ABO, ABP, AOP, BOP

Answers to Qn 7 (AO1): 70% of students got this right

Part	Working or answer an examiner might expect to see	Mark	Notes
5 (a)	60 − 27 = 33	1	This mark is given for finding the number of students who did not walk to school
	$\dfrac{33}{60}$	1	This mark is given for the answer shown or an equivalent fraction

Answers to Qn 8 (AO2): 69% of students got this right

14   What is the **maximum possible** order of rotational symmetry of a quadrilateral?

Circle your answer.

[1 mark]

1   2   (4)   8

Answers to Qn 9 (AO1): 68% of students got this right

Question		Working	Answer	Mark	Notes
8.	(a)		9 to 9.1	1	B1
	(b)		11.8	1	B1
	(c)		1.4	1	B1

Answers to Qn 10 (AO1): 66% of students got this right

4.			0.6	3	B1 for 1.8 seen (accept 1800)
					M1 for "1.8" ÷ 3
					A1 for 0.6 oe

Answers to Qn 11 (AO1): 65% of students got this right

Question	Working	Answer	Mark	Notes
5		12	2	M1 for $48 \div 4$ or $48 \times \dfrac{1}{4}$ oe A1 cao

Answers to Qn 12 (AO1): 64% of students got this right

Paper 1MA1: 2F			
Question	**Working**	**Answer**	**Notes**
11 (a)		rule stated	C1 for rule stated, eg number doubles
(b)		32	B1 cao
(c)		22, 29	B1 cao

Answers to Qn 13 (AO1): 64% of students got this right

Question	Working	Answer	Mark	Notes
8.	$8 \div 20 \times 100$	40	2	M1 for $8 \div 20 \times 100$ or $\dfrac{8}{20} = \dfrac{8 \times 5}{20 \times 5}$ oe or $\dfrac{40}{100}$ A1 cao

Answers to Qn 14 (AO2): 63% of students got this right

Question	Working	Answer	Mark	Notes
7		Jane should buy Greens Garden Shop + costs	4	M1 for Suttons: 140 ÷ 20 (= 7) bags of compost needed M1 for 3 × 3.25 (= 9.75) + 1 × 2.25 (=<u>12</u>) M1 for Greens: cost of 2 bags eg × 4.99 (= <u>9.98</u>) , 2 × 5 (=10) C1 for correct conclusion from a comparison of correct appropriate figures

Answers to Qn 15 (AO1): 63% of students got this right

Question	Working	Answer	Mark	Notes
6		145	M1	for $319 \div 2.2$
			A1	cao

Answers to Qn 16 (AO1): 62% of students got this right

Question	Working	Answer	Mark	Notes
2		16	B1	cao

Answers to Qn 17 (AO1): 62% of students got this right

Question	Working	Answer	Mark	Notes
9 (c)		12	M1	for $(79 - 7) \div 6$; condone missing brackets
			A1	cao

Answers to Qn 18 (AO1): 61% of students got this right

7a   Matthew has eight cards.
There is a number on each card.

| 3 | 6 | 9 | 1 | 6 | 7 | 4 | 2 |
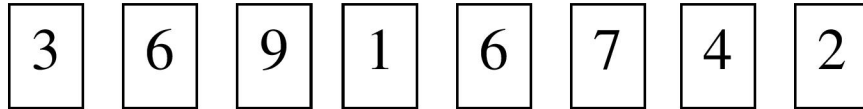
(a) Work out the range of the numbers on the cards.

$9 - 1 = 8$

Answers to Qn 19 (AO2): 59% of students got this right

Part	Working or answer an examiner might expect to see	Mark	Notes
11	$(12 - 1) \times 24 = 264$	1	This mark is given for finding the total cost of Offer 1
	$24 \times 0.05 = 1.20$ $24 - 1.20 = 22.80$ $12 \times 22.80 = 273.60$	1	This mark is given for finding the total cost of Offer 2
	Offer 1 is the cheapest	1	This mark is given for a correct conclusion supported by working

Answers to Qn 20 (AO1): 58% of students got this right

Question		Working	Answer	Mark	Notes
14	(a)		£123-£127	1	B1 £123-£127 inclusive
	(b)		35-36	1	B1 35-36 inclusive
	(c)	8.6 × 5 = 43 → "£180"	£175-£185	3	M1 8.6×5
					A1 43
					A1 answers in the range £175-£185
					SC: B2 for 43

Answers to Qn 21 (AO2): 57% of students got this right

Part	Working or answer an examiner might expect to see	Mark	Notes
12 (b)		1	This mark is given for either a numerator of 13 or a denominator of 23
	$\dfrac{13}{23}$	1	This mark is given for the correct answer only

Answers to Qn 22 (AO1): 57% of students got this right

Question	Working	Answer	Mark	Notes
6		36	1	B1 cao for Cazda
		120°	1	B1 cao for Zusuki
		42	2	M1 for correct method from using 105°
				e.g. 18 ÷ 45 × 105, "36" ÷ 90 × 105 or from table, e.g. Cazda "36" × 4−(18+36+48)
				A1 for 42 or ft values from their table.

Answers to Qn 23 (AO2): 53% of students got this right

10   This accurate scale drawing shows the positions of three villages, *A*, *B* and *C*.
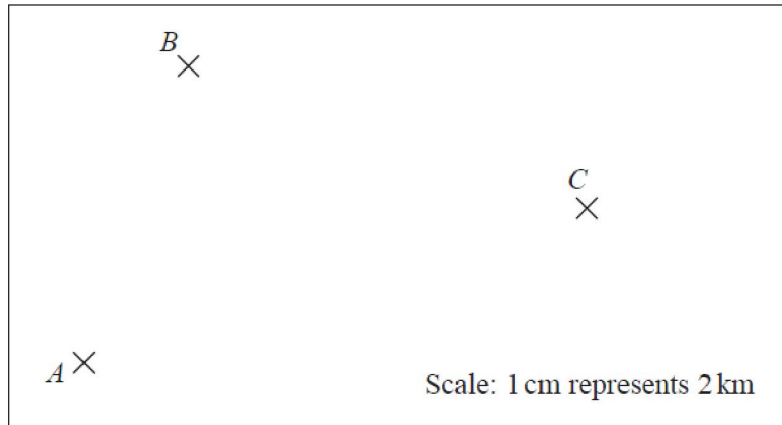
Tom walks from *A* to *B*.
He then walks from *B* to *C*.

Amy walks from *A* to *C*.

Tom walks more kilometres than Amy walks.

How many more?

AB + BC – AC = 4.5 + 6 – 7.5 = 3 cm

3 × 2 **= 6 km**

Answers to Qn 24 (AO1): 52% of students got this right

Part	Working an or answer examiner might expect to see	Mark	Notes
4 (a)	$4 \times 125 = 500$ or $2 \times 120 = 340$ or $3 \times 135 = 405$	1	This mark is given for finding the total weight of one type of fruit eg
	$1785 - (500 + 340 + 405) = 540$	1	This mark is given for finding the total weight of the oranges
	$540 \div 90 = 6$	1	This mark is given for the correct answer only

Answers to Qn 25 (AO2): 49% of students got this right

11.	(a)		12	2	M1 for $9 \times 4 \div 3$ oe
					A1 cao
	(b)		6	3	M1 for a correct first step e.g. $20 \times 3 \ (= 60)$ or $20 \div 10 \ (= 2)$ or giving equation e.g. $10h \div 3 = 20$
					M1 for complete method to give height e.g. '60' $\div$ 10 or '2' $\times$ 3 or $h = 20 \times 3 \div 10$ oe
					A1 cao

Answers to Qn 26 (AO1): 49% of students got this right

2		Any even cube	B1	for any even cube number

2

Answers to Qn 27 (AO1): 49% of students got this right

Question	Working	Answer	Mark	Notes
18		334.4(0)	P1	for process to find 12% of 5700 **or** 88% of 5700, e.g. 0.12 × 5700 (= 684) **or** 0.88 × 5700 (= 5016)
			P1	(dep on P1) for a complete process to find the value of each payment, e.g. (5700 – "684") ÷ 15 or "5016" ÷ 15
			A1	cao; condone missing 0

Answers to Qn 28 (AO2): 49% of students got this right

Paper 1MA1: 2F			
Question	Working	Answer	Notes
9		No + explanation	C1 No, with explanation, eg the angle will still be 25°

Answers to Qn 29 (AO1): 48% of students got this right

Question		Working	Answer	Mark	Notes
13	(a)		$50 < a \leq 60$	1	B1 for correctly identifying the modal class interval e.g. 50 – 60 oe

Answers to Qn 30 (AO3): 48% of students got this right

Question	Working	Answer	Mark	Notes
4.		40	3	M1 for 24 ÷ 3 (= 8)
				M1 for "8"× 5
				A1 cao
				OR
				M1 for 3 × 24 (= 72)
				M1 for "3 × 24" − 8 − 8 − 8 − 8
				A1 cao

Answers to Qn 31 (AO1): 48% of students got this right

Part	Working or answer an examiner might expect to see	Mark	Notes
21 (a)	6	1	This mark is given for the correct answer only

Answers to Qn 32 (AO2): 47% of students got this right

Part	Working or answer an examiner might expect to see	Mark	Notes
14 (a)	$a = 1, b = 3$, then $2 \times (1 + 3) = 8$	1	This mark is given for choosing two odd numbers and working out $2(a = b)$
	$8 \div 4 = 2$, so 8 is a multiple of 4	1	This mark is given for a correct statement

Answers to Qn 33 (AO2): 47% of students got this right

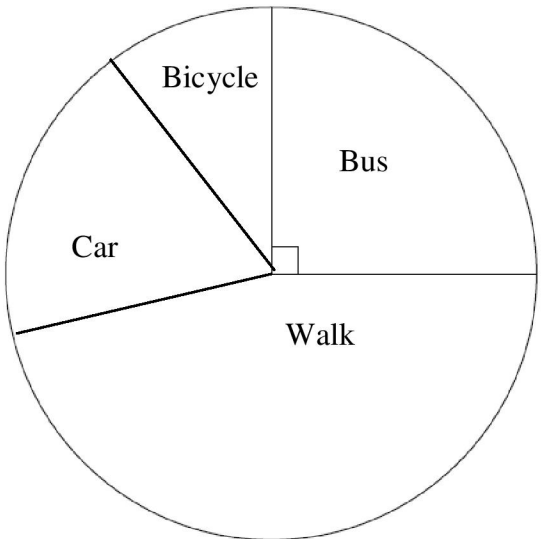| Question	Working	Answer	Mark	Notes
10		conclusion	1	C1 for No and example, e.g. "10 – –2 = 12" or statement, e.g. "If you subtract a negative number the answer will be greater than 10"
		example	1	C1 for appropriate example, e.g. $14 \div 2 = 7$

Answers to Qn 34 (AO1): 46% of students got this right

16		219.60	M1	180×1.22 oe
			A1	Accept 219.6

Answers to Qn 35 (AO1): 46% of students got this right

| | | | | 9. (d) | $x^2 + 4x + 7x + 28$ | 2 | M1 for 3 correct terms out of 4 or for 4 correct terms, ignoring signs

or for $x^2 + 11x + c$ for any non-zero value of c
or for ... $+ 11x + 28$ |
| | | | | | $x^2 + 11x + 28$ | | A1 |

Ext ANSWERS 1 (AO1): Only 38% of students got this right(4 mark

Part	Working or answer an examiner might expect to see	Mark	Notes
5 (b)	$\dfrac{27}{60} \times 360 = 162°,$ $\dfrac{12}{60} \times 360 = 72°,$ $\dfrac{6}{60} \times 360 = 36°$	1	This mark is given for finding the angle for at least one sector
		1	This mark is given for drawing at least one sector accurately
		1	This mark is given for an accurately drawn pie chart
		1	This mark is given for all sectors accurately labelled

Ext ANSWERS 2 (AO1): Only 38% of students got this right(2 mark

Part	Working or answer an examiner might expect to see	Mark	Notes
23 (a)	$\sqrt{\dfrac{1.0654058}{0.1402633}} = 7.595756$	1	This mark is given for any of 1.0654058, 1.402633 or 7.595756 seen
	2.7560399…	1	This mark is given for the correct answer only

Ext ANSWERS 3 (AO1): Only 38% of students got this right(2 mark

Paper 1MA1: 3F			
Question	Working	Answer	Notes
21		$4n - 7$	M1 method to deduce nth term e.g. $4n + k$ A1 for $4n - 7$ oe