PINPOINT LEARNING

PAPER THREE REVISION PACKS

44_to_61_Percent_Pinpoint_AI_Pack

Time Allocation = 99mins , Max = 88 Marks

Calculated Grade Boundaries:

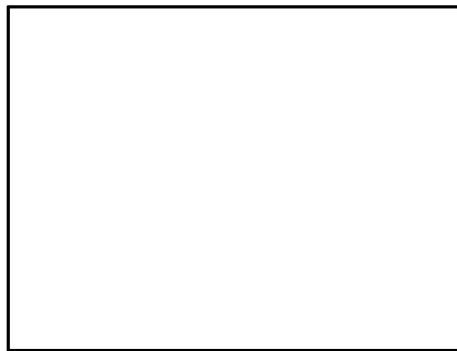| Grade	Marks
1+	15
2-	30
2	44
2+	59
3-	74
3	88

Question 1 (AO2): 55% of students got this right (2 marks)
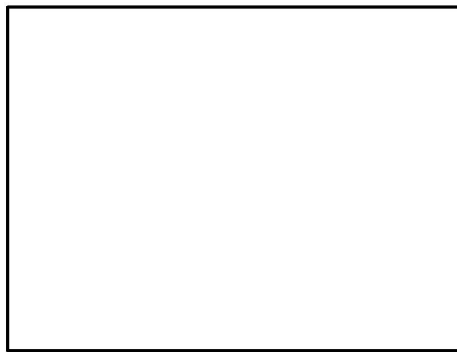
10   Draw **two** straight lines inside the rectangle to split it into

         1 trapezium

         and

         2 right-angled triangles.

[2 marks]

Practise on this diagram.

Put your answer on this diagram.

Question 2 (AO2): 53% of students got this right (4 marks)

10 Suha is going to buy 150 envelopes.

Here is some information about the cost of envelopes in two shops.

Letters2send	Stationery World
Pack of 25 envelopes for £3.49	Pack of 10 envelopes for £2.10 Buy 2 packs get 1 pack free

Suha wants to buy the envelopes as cheaply as possible.
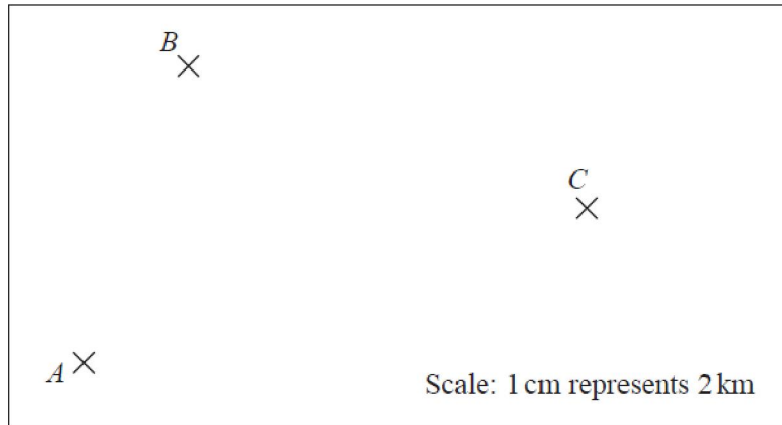
Which shop should Suha buy the 150 envelopes from?
You must show how you get your answer.

(Total for Question 10 is 4 marks)

_____

Question 3 (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 4 (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
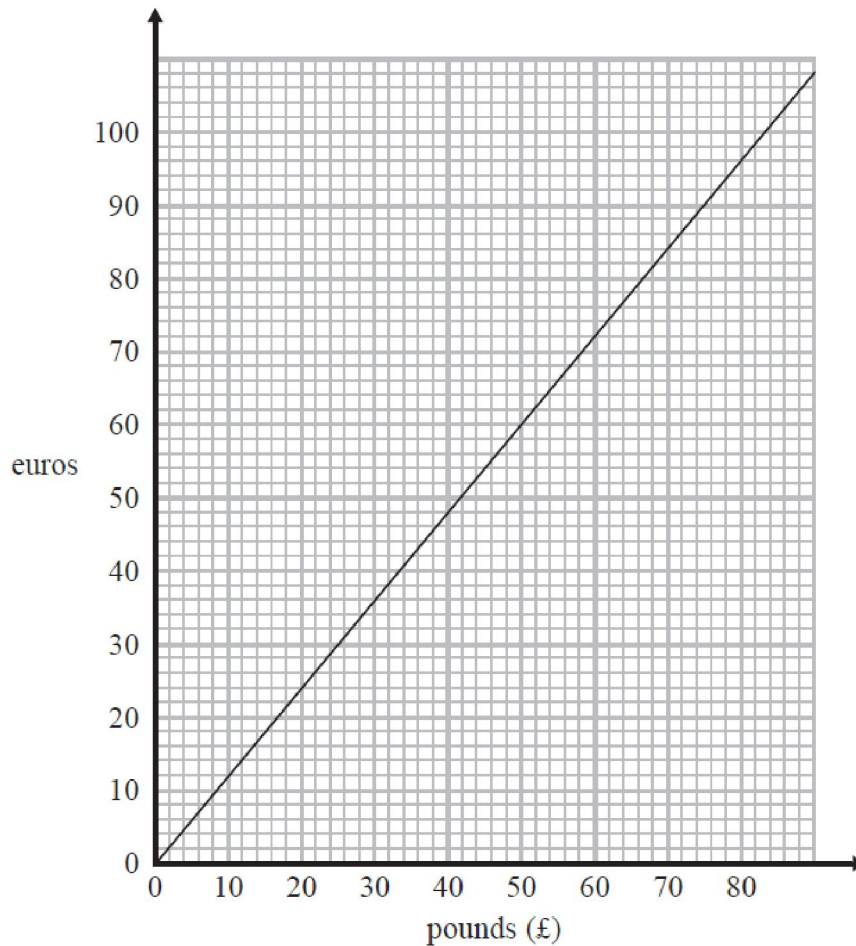 3 peaches weighing 135 g each

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 5 (AO1): 51% of students got this right (2 marks)

5. You can use this conversion graph to change between pounds (£) and euros.

Change 150 euros into pounds (£).

£...

(Total 2 marks)

_____

Question 6 (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.

.... cm^3

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

2. Write down an even cube number.

....

(Total for Question 2 is 1 mark)

_____

Question 8 (AO1): 49% of students got this right (3 marks)

11. Here are the speeds, in kilometres per hour, of 15 cyclists.

16	22	34	18	24
22	33	28	19	41
23	25	31	40	23

Show this information in a stem and leaf diagram.

(Total for Question 11 is 3 marks)

Question 9 (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 10 (AO2): 49% of students got this right (1 marks)

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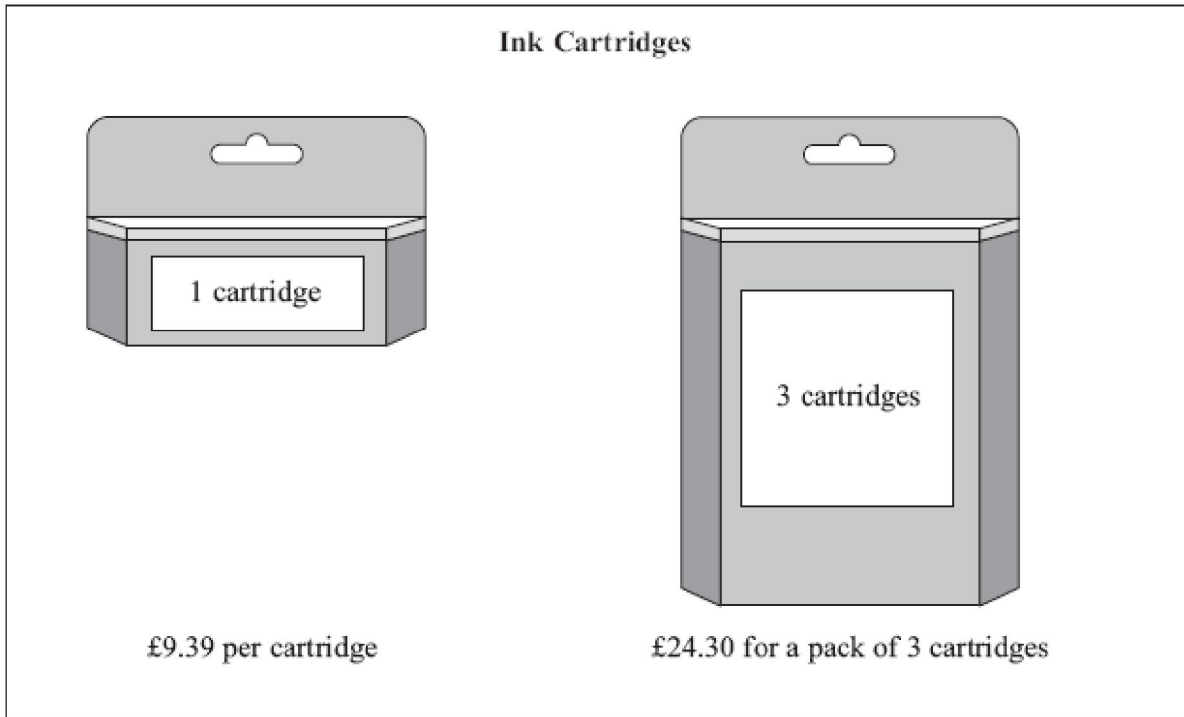The triangle is enlarged by scale factor 3.

Ben says,

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

Is Ben right?
Explain your answer.

Question 11 (AO2): 48% of students got this right (5 marks)

14. George is going to buy exactly 10 ink cartridges.

Ink Cartridges

1 cartridge

3 cartridges

£9.39 per cartridge

£24.30 for a pack of 3 cartridges

Find the difference in cost between the cheapest way and the most expensive way to buy the 10 ink cartridges.

Question 12 (AO1): 48% of students got this right (3 marks)

7 Jaroslav puts some items into his rucksack.

The table shows the weight of each item.

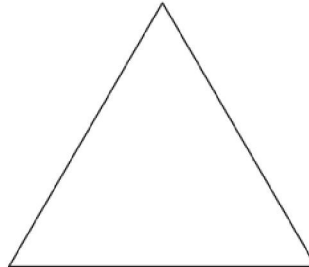| Item	Weight
2 apples	120 g each
2 bottles of water	524 g each
camera	474 g
map	86 g
mobile phone	214 g
umbrella	339 g

The rucksack has a weight of 275 g.

Work out the total weight of the rucksack and all the items.

Give your answer in kilograms.

Question 13 (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.
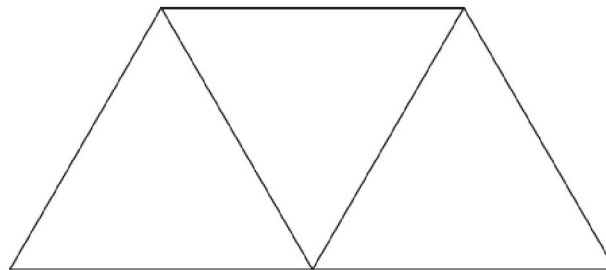
Work out the perimeter of the trapezium.

.... cm

(Total 3 marks)

_____

Question 14 (AO1): 48% of students got this right (1 marks)

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

    (*a*) Find the value of *x*.

Question 15 (AO1): 47% of students got this right (1 marks)

1   Circle the cube number.

[1 mark]

         4   8   25   9

Question 16 (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 17 (AO2): 47% of students got this right (4 marks)

17. A machine makes 36 trophies every hour.

The machine makes trophies for $8\frac{1}{2}$ hours each day, on 5 days of the week.

The trophies are packed into boxes.
Each box holds 8 trophies.

How many boxes are needed for all the trophies made each week?

Question 18 (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 19 (AO1): 46% of students got this right (2 marks)

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

....

(2)

_____

Question 20 (AO1): 45% of students got this right (1 marks)

7   The probability that a new fridge has a fault is 0.015.

What is the probability that a new fridge does **not** have a fault?
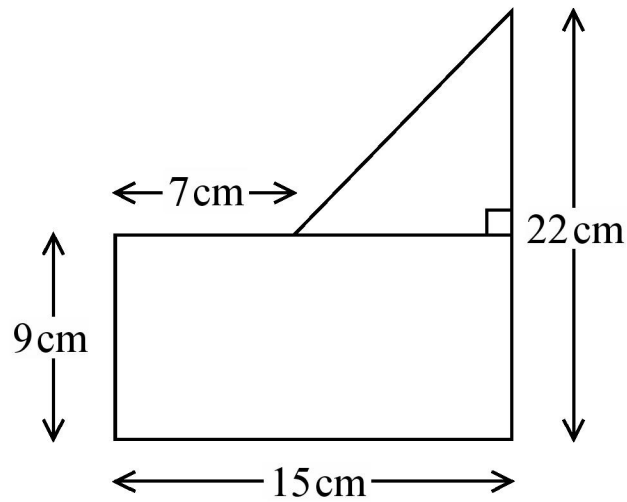
....

(Total for Question 7 is 1 mark)

Question 21 (AO1): 44% of students got this right (3 marks)

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

Work out the total area of the shape.

Question 22 (AO3): 44% of students got this right (3 marks)

8   There are 258 pupils at a school.
135 of the pupils are boys.

$\dfrac{3}{5}$ of the boys walk to school.

$\dfrac{2}{3}$ of the girls walk to school.

Work out how many pupils walk to school.

....

(Total for Question 8 is 3 marks)

Question 23 (AO1): 44% of students got this right (2 marks)

17. Here are 6 triangles drawn on a grid of centimetre squares.
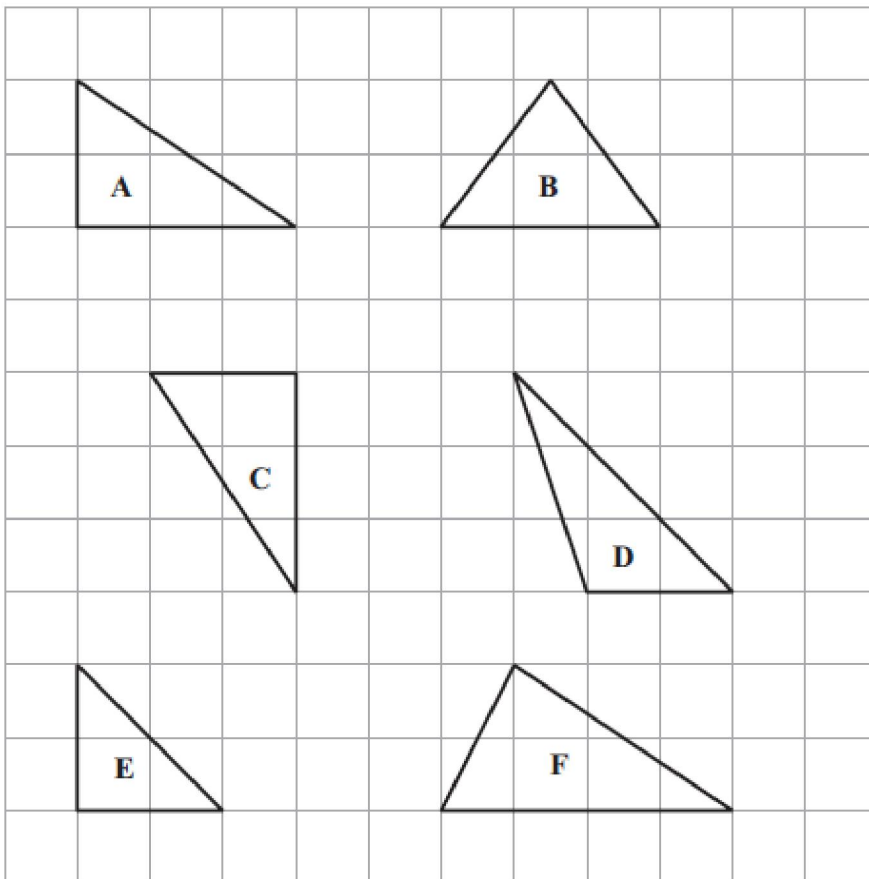
(a) Write down the letters of the two congruent triangles.

....
(1)

(b) Write down the letter of an isosceles triangle.

....
(1)

Question 24 (AO2): 43% of students got this right (2 marks)

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

pattern number 1   pattern number 2   pattern number 3
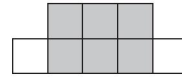
Aqsa says,

"The total number of squares needed to make pattern number 20 is double the total number of squares needed to make pattern number 10"

(c) Is Aqsa correct?
Give a reason for your answer.

....

....

....

(2)

Question 25 (AO1): 43% of students got this right (5 marks)

11. Here is a number machine.

Input $\longrightarrow$ $\boxed{\times 4}$ $\longrightarrow$ $\boxed{+3}$ $\longrightarrow$ Output

(*a*) Work out the output when the input is 5.

....

(1)

(*b*) Work out the input when the output is –5.

....

(2)

The input is *x* and the output is *y*.

(*c*) Write *y* in terms of *x*.

....

(2)

(Total 5 marks)

_____

Question 26 (AO2): 43% of students got this right (1 marks)

8   Here are the first five numbers in a sequence.

<div align="center">

47   41   35   29   23

</div>

Sarah says,

" –100 is **not** a number in this sequence."

(*b*) Is Sarah correct?
       Explain why.

Question 27 (AO1): 43% of students got this right (2 marks)

17   (*c*)   Solve $9(c - 6) = 63$

Question 28 (AO1): 41% of students got this right (2 marks)

4 $\dfrac{4}{5}$ of a number is 32.
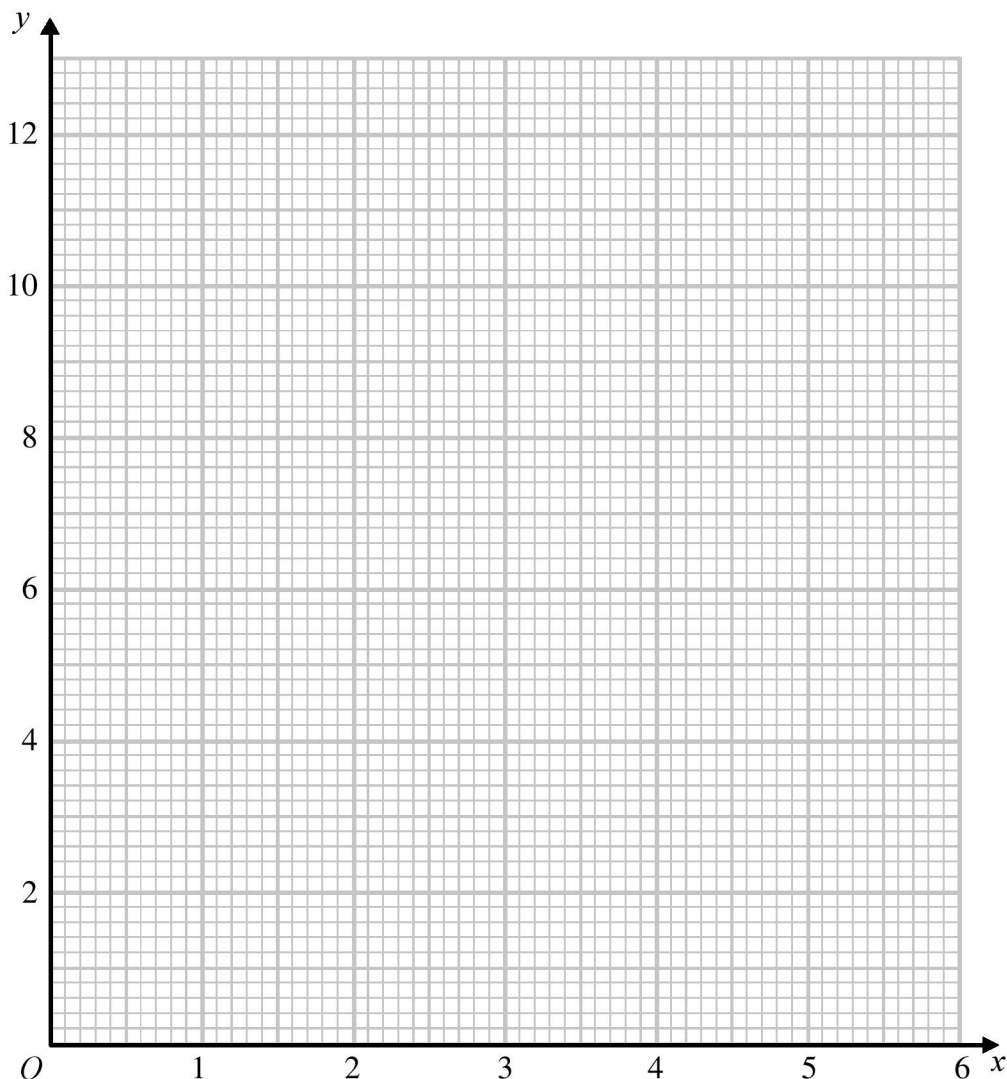
Find the number.

(Total for Question 4 is 2 marks)

_____

Question 29 (AO1): 41% of students got this right (4 marks)

22   (*a*) Complete the table of values for $y = \dfrac{6}{x}$

x	0.5	1	1.5	2	3	4	5	6
y		6		3		1.5		

(2)

(*b*) Draw the graph of $y = \dfrac{6}{x}$ for values of *x* from 0.5 to 6.

(2)

Question 30 (AO3): 41% of students got this right (3 marks)

19. Eric travels from the UK to India every year.

    In 2010, the exchange rate was £1 = 67.1 rupees.
    In 2012, the exchange rate was £1 = 82.5 rupees.

    In 2010 Eric changed £600 into rupees.

    How many pounds (£) did Eric have to change to rupees in 2012 to get the same number of rupees as he did in 2010?

Question 31 (AO1): 40% of students got this right (2 marks)

6   Katy is facing North.

She does a three-quarter turn anti-clockwise.

She then turns 45° clockwise.
What direction is she facing now?

[2 marks]

N
↑

Question 32 (AO1): 40% of students got this right (4 marks)

8. *T* is an integer such that $7 < T < 15$

(a) Write down the greatest number *T* can be.

....
(1)

f and *g* are both integers.

$$f + g = 500$$

f is 160 greater than *g*

(b) Calculate the value of *f* and the value of *g*.

f = ...

g = ...
(3)

(Total for Question 8 is 4 marks)

_____

Question 33 (AO2): 39% of students got this right (2 marks)

13. (*b*)   Show that $\dfrac{1}{3} + \dfrac{4}{15} = \dfrac{3}{5}$

(2)

(Total 4 marks)

_____

Question 34 (AO1): 39% of students got this right (2 marks)

16   The table shows information about the number of children in each of 40 families.

Number of children	Frequency
0	6
1	13
2	12
3	7
4	2
5 or more	0

(b) Work out the total number of children.

Ext Qn1 (AO2): Only 32% of students got this right(1 marks)

1   Write down the value of the 3 in 16.35.

Ext Qn2 (AO2): Only 32% of students got this right(4 marks)

17   *ABC* is an isosceles triangle.
When angle $A = 70°$, there are 3 possible sizes of angle *B*.

(*a*) What are they?

When angle $A = 120°$, there is only one possible size of angle *B*.

(*b*) Explain why.

Ext Qn3 (AO2): Only 32% of students got this right(2 marks)

17.   (a) Expand and simplify $(x + 9)(x - 3)$
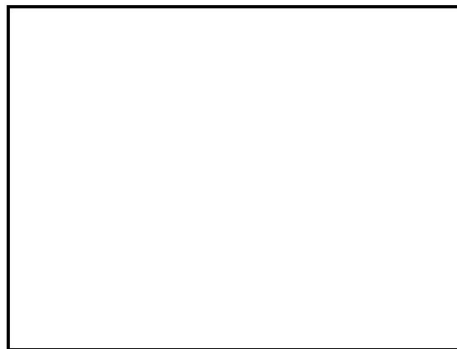
....

(2)

Answers to Qn 1 (AO2): 55% of students got this right
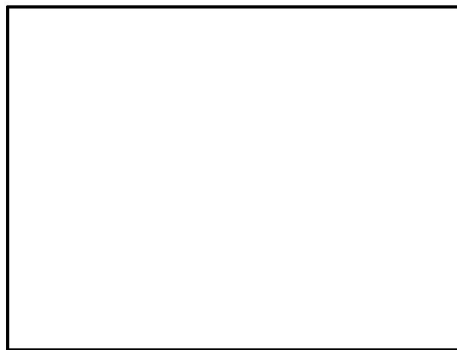
10 Draw **two** straight lines inside the rectangle to split it into
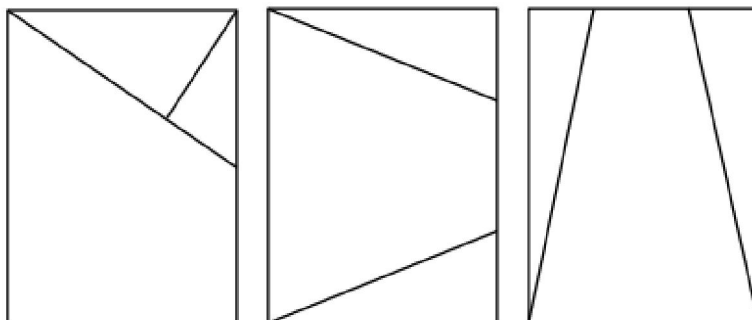1 trapezium

and

2 right-angled triangles.

[2 marks]

Practise on this diagram.

Put your answer on this diagram.

Solutions (One of the following):

Answers to Qn 2 (AO2): 53% of students got this right

Question 10 (Total 4 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	Letters2send: $150 \div 25 = 6$ Stationery World: $150 \div 10 = 15$, so only 10 packs to be paid for	P1	This mark is given for the start of a process to find comparable costs at each shop
	Letters2send: $6 \times 3.49 = 20.94$	P1	This mark is given for a process to find the cost of envelopes from Letters2send
	Stationery World: $10 \times 2.10 = 21.00$	P1	This mark is given for a process to find the cost of envelopes from Stationery World
	Suha should buy envelopes from Letters2send	C1	This mark is given for a correct conclusion with correct supporting values

Answers to Qn 3 (AO2): 53% of students got this right

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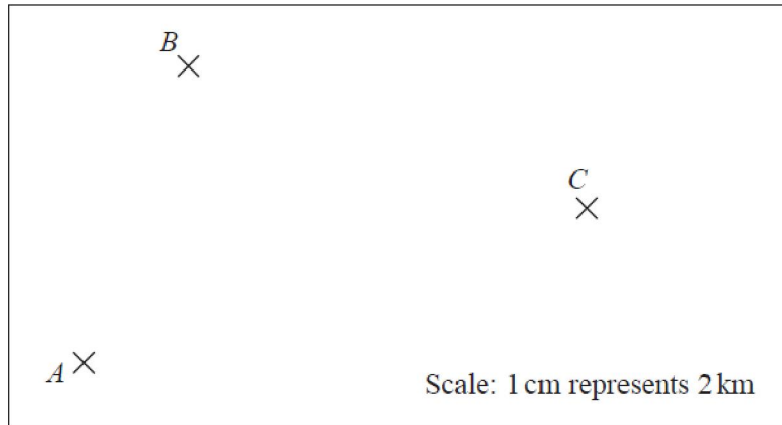
Scale: 1 cm represents 2 km

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?

AB + BC – AC = 4.5 + 6 – 7.5 = 3 cm

3 × 2 **= 6 km**

Answers to Qn 4 (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 5 (AO1): 51% of students got this right

Question	Working	Answer	Mark	Notes
5		125	2	M1 for complete method using graph eg 50 euros = £42; 42 × 3 A1 for 122 – 128

Answers to Qn 6 (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. 20×3 (= 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 7 (AO1): 49% of students got this right

2		Any even cube	B1	for any even cube number

2

Answers to Qn 8 (AO1): 49% of students got this right

11	1 6 8 9	Diagram	B2	for a fully correct diagram
	2 2 2 3 3 4 5 8		(B1)	for an ordered diagram with one error or omission or for an unordered diagram)
	3 1 3 4			
	4 0 1		B1	for an appropriate key
	key 41 is 41			

Answers to Qn 9 (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 10 (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 11 (AO2): 48% of students got this right

Question	Working	Answer	Mark	Notes
14.	9.39×10 $24.30 \times 3 + 9.39$ $93.90 - 82.29$	£11.61	5	M1 for a correct method to find the most expensive way to buy the 10 cartridges (= 93.90) M1 for a correct method to find the least expensive way to buy the 10 cartridges (= 82.29) M1 (dep on M1 scored) for a correct method to find the difference between their least and their most expensive way, provided that both totals are for the cost of exactly 10 cartridges A1 for 11.61 B1 (indep) for correct units

Answers to Qn 12 (AO1): 48% of students got this right

Question	Working	Answer	Mark	Notes
7		2.676	M1	for method to find total weight of at least 4 items, e.g. $2 \times 120 + 2 \times 524 + 474 + 86 + 214 + 339 + 275$
			B1	for change in units, e.g. $2676 \div 1000$
			A1	cao

Answers to Qn 13 (AO3): 48% of students got this right

Question	Working	Answer	Mark	Notes
4.		40	3	M1 for $24 \div 3$ (= 8)
				M1 for "8"$\times 5$
				A1 cao
				OR
				M1 for 3×24 (= 72)
				M1 for "3×24" $- 8 - 8 - 8 - 8$
				A1 cao

Answers to Qn 14 (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 15 (AO1): 47% of students got this right

1   Circle the cube number.

[1 mark]

4   8   25   9

Answers to Qn 16 (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 17 (AO2): 47% of students got this right

Question		Working	Answer	Mark	Notes
17		$36 \times 8.5 \times 5 = 1530$ $1530 \div 8 = 191.25$ or could plan for 191, 191, 191 then 192	191 or 192	4	M2 $36 \times 8.5 \times 5$ (M1 for the product of any two of these terms) M1 (dep on at least M1 achieved) ÷ 8 A1 cao

Answers to Qn 18 (AO1): 46% of students got this right

16		219.60	M1	180×1.22 oe
			A1	Accept 219.6

19

Answers to Qn 19 (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

Answers to Qn 20 (AO1): 45% of students got this right

Question 7 (Total 1 mark)

Part	Working or answer an examiner might expect to see	Mark	Notes
	$1 - 0.015 = 0.985$	B1	This mark is given for the correct answer only

Answers to Qn 21 (AO1): 44% of students got this right

Question	Working	Answer	Mark	Notes
13		187	M1	for a method to find a missing length, e.g. 15 – 7 (= 8) **or** 22 – 9 (= 13) (may be seen on the diagram)
			M1	for a method to find the area of the triangle, e.g. ((15 – 7) × (22 – 9)) ÷ 2 (= 52) **or** to find the area of the rectangle, e.g. 9 × 15 (= 135)
			A1	cao

Answers to Qn 22 (AO3): 44% of students got this right

8 There are 258 pupils at a school.
135 of the pupils are boys.

$\dfrac{3}{5}$ of the boys walk to school.

$\dfrac{2}{3}$ of the girls walk to school.

Work out how many pupils walk to school.

$\dfrac{3}{5} \times 135 = 81$ boys walk to school

$258 - 135 = 123$ girls

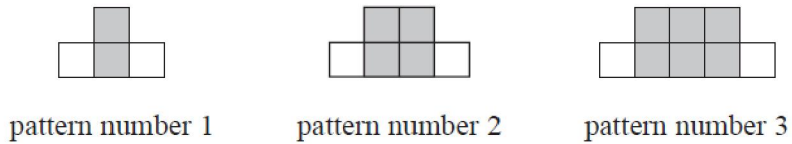$\dfrac{2}{3} \times 123 = 82$ girls walk to school

$81 + 82 = \textbf{163 pupils}$ walk to school.

Answers to Qn 23 (AO1): 44% of students got this right

Question		Working	Answer	Mark	Notes
17	(a)		A and C	1	B1 for A and C (no extras)
	(b)		B or E	1	B1 for B or E (or both) (no extras)

Answers to Qn 24 (AO2): 43% of students got this right

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

pattern number 1   pattern number 2   pattern number 3

Aqsa says,

"The total number of squares needed to make pattern number 20 is double the total number of squares needed to make pattern number 10"

(c) Is Aqsa correct?
Give a reason for your answer.

Nth term: $2n + 2$
$n = 10$ $(2(10) + 2) = 22$

$n = 20$ $(2(20) + 2) = 42$

Pattern number 20 is not double Pattern number 10

Answers to Qn 25 (AO1): 43% of students got this right

Question	Working	Answer	Mark	Notes
11. (a)		23	1	B1
(b)	$(-5-3) \div 4$	-2	2	M1 A1
(c)		$y = 4x + 3$	2	B2 for $y = 4x + 3$ oe If not B2 then B1 for $4x + 3$ **or** $x = (y - 3) \div 4$

Answers to Qn 26 (AO2): 43% of students got this right

Question	Working	Answer	Mark	Notes
8 (b)		Yes (supported)	B1	Yes, with explanation, e.g. (–)100 is even but all other numbers are odd oe

Answers to Qn 27 (AO1): 43% of students got this right

Question	Working	Answer	Mark	Notes
17 (c)		13	M1	for correct expansion of the bracket, **or** for intention to divide both sides by 9 as the first step
			A1	cao

Answers to Qn 28 (AO1): 41% of students got this right

Paper: 1MA1/3F				
Question	**Working**	**Answer**	**Mark**	**Notes**
4		40	M1	for 32 ÷ 4 (= 8) or 32 × 5 (= 160) or complete method eg 32 ÷ 4 × 5 oe (= 40)
			A1	Cao

Answers to Qn 29 (AO1): 41% of students got this right

Paper: 1MA1/3F				
Question	Working	Answer	Mark	Notes
22 (a)		12, 4, 2, 1.2, 1	B2	for fully correct table (allow fractions or decimals)
			(B1)	for 3 or 4 of 12, 4, 2, 1.2, 1
(b)		Correct curve	M1	ft (dep on B1 in (a)) for plotting at least 6 points from their table correctly
			A1	for a fully correct curve

Answers to Qn 30 (AO3): 41% of students got this right

Question	Working	Answer	Mark	Notes
19		488	3	M1 600 × 67.1 (= 40260) or 67.1 ÷ 82.5 (= 0.813…) M1 (dep) "40260" ÷ 82.5 or "0.813.." × 600 A1 cao SC: B2 for 712

Answers to Qn 31 (AO1): 40% of students got this right

6   Katy is facing North.

She does a three-quarter turn anti-clockwise.

She then turns 45° clockwise.
What direction is she facing now?

[2 marks]

N
↑
|
•

Three-quarter turn anti-clockwise = quarter turn clockwise (90°)

90 + 45

Answer   135°

Answers to Qn 32 (AO1): 40% of students got this right

8	(a)		14	B1	cao
	(b)		330,170	P1	for a correct first step, e.g. 500 – 160 or two integers that add to 500 or two integers (below 500) with a difference of 160
				P1	for a complete process to find either *f* or *g*
				A1	for both values

Answers to Qn 33 (AO2): 39% of students got this right

| 13. | (b) | $\frac{5}{15}+\frac{4}{15}$ or $\frac{5+4}{15}$ | $\frac{9}{15}$ | 2 | M1 for 2 fractions equivalent to $\frac{1}{3}$ and $\frac{4}{15}$ with a common denominator e.g. $\frac{15}{45}+\frac{12}{45}$ **or** $\frac{15+12}{45}$

 A1 dep on M1 for fraction equivalent to $\frac{9}{15}$ (but not $\frac{3}{5}$) produced directly from M1 |

Answers to Qn 34 (AO1): 39% of students got this right

Question	Working	Answer	Mark	Notes
16 (b)		66	M1	for method for calculating at least 4 values fx values correctly
			A1	cao

Ext ANSWERS 1 (AO2): Only 32% of students got this right(1 mark

Paper 1MA1: 2F			
Question	**Working**	**Answer**	**Notes**
1		3 tenths or $\frac{3}{10}$	B1

Ext ANSWERS 2 (AO2): Only 32% of students got this right(4 mark

Paper 1MA1: 3F			
Question	Working	Answer	Notes
17(a)		70, 40 and 55	P1 for a method to find one of angles eg (180 - 70) ÷ 2 or 70 stated as the equal or $180 - 2 \times 70$ P1 for a method to find a angle A1 for 70, 40 and 55 (any order)
17(b)		Explanation	C1 Explanation eg only one option once an obtuse angle given

Ext ANSWERS 3 (AO2): Only 32% of students got this right(2 mark

17.	(a)	$x^2 + 9x - 3x - 27$	$x^2 + 6x - 27$	2	M1 for 3 out of 4 terms correct or 4 terms correct ignoring signs A1