ADA PINPOINT PACKS

32_to_66_Percent_Pinpoint_AI_Pack

Made for Grade2to4

AO1,2_and_3

ALL_Strands

Calc_Only

Created by A.D.A:

Pinpoints Automatic Differention Algorithmn
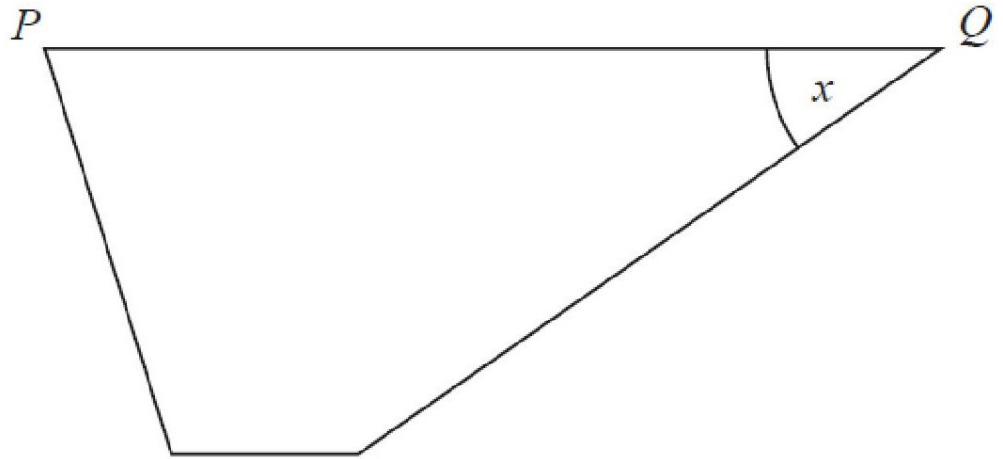
Designed and Programmed by

Tom Quilter, Anne Mcateer + Jon Hargreaves ... All maths teachers.

Question 1 (AO1): 66% of students got this right

6 Here is a trapezium.

This diagram is accurately drawn.

(*a*) Measure the length of the line *PQ*.

(*b*) Measure the size of the angle marked *x*.

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

15. Henri and Ray buy some flowers for their mother.
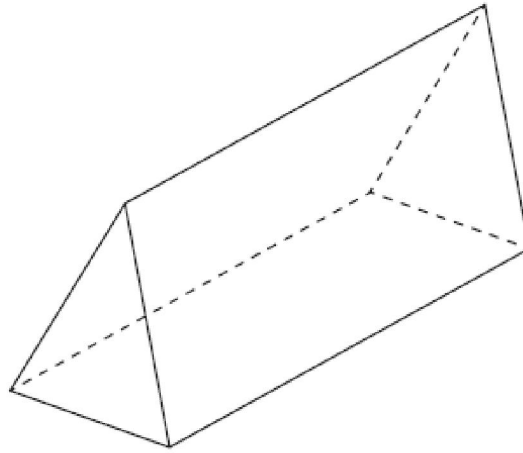
They buy

3 bunches of roses for £6.99
1 bunch of roses and 2 bunches of tulips for £4.45

(a) Work out the cost of one bunch of tulips.

£...
(3)

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

9. The diagram shows a solid prism.

Write down

(i)   the number of vertices

....

(ii) the number of faces

....

(iii) the number of edges

....

(Total 3 marks)
_____

Question 4 (AO2): 62% of students got this right

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 5 (AO1): 61% of students got this right

5. (a) Solve $2(x + 1) = 8$

$x = $ ....

(2)

(b) Solve $3y + 7 = 19$

$y = $ ....

(2)

Question 6 (AO1): 60% of students got this right

6. (ii) Change 2.5 kilograms to grams.

.... grams

(1)

Question 7 (AO3): 59% of students got this right

14. Sal asked 60 adults if they liked Chinese food best or Italian food best or Thai food best.

    29 of the adults were women.
    6 of the women liked Thai food best.
    10 of the men liked Chinese food best.
    8 of the 13 adults who liked Italian food best were women.

    Work out the number of men who liked Thai food best.

    ....

    (Total 4 marks)

    _____

Question 8 (AO1): 57% of students got this right

15 (*a*) Work out $\dfrac{4.36 + 2.8^3}{6.8 - 5.42}$

Give your answer as a decimal.
Write down all the digits on your calculator display.

Question 9 (AO1): 56% of students got this right

15 (b) Work out $(6 - 2.5)^2 + \sqrt{9.34 - 2.58}$

Question 10 (AO1): 55% of students got this right

11. Barbara has a tube of sweets.

There are 5 sweets in the tube.

There is one sweet of each of these colours in the tube.

     red   blue   green   yellow   pink

Barbara takes two sweets at random from the tube.

(a) Write down all the possible combinations of colours she can take.

....

....

....

(2)

(b) What is the probability that Barbara takes a red sweet and a yellow sweet from the tube?

....

(1)

(Total 3 marks)

Question 11 (AO3): 54% of students got this right

7   Write down three different factors of 18 that add together to give a prime number.

Question 12 (AO2): 53% of students got this right

16. Brian wants to go on holiday.
He is going to take out a loan of £500 to help pay for the holiday.

Brian will have to pay back the £500 plus 20% interest over 12 months.
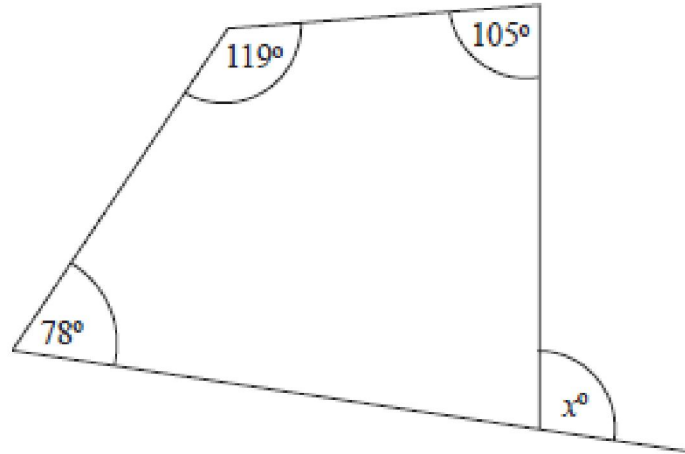He will pay back the same amount of money each month.

How much money will he need to pay back each month?

£ ....

(Total 4 marks)

Question 13 (AO1): 52% of students got this right

14.

Work out the value of *x*.

Question 14 (AO1): 51% of students got this right

18. Fleur is a gardener in a park.
    She buys trays of plants to plant in the park.
    The plants will have flowers that are red or yellow or white or blue.

    The table gives the probabilities that a flower will be red or yellow or blue.

Colour	red	yellow	white	blue
Probability	0.2	0.3		0.1

(a) What is the probability that a flower will be white?

....
(2)

There are 120 plants in a tray.

(b) Work out an estimate for the number of these plants that will have red flowers.

....
(2)

Question 15 (AO1): 50% of students got this right

5.   Here are four numbers.

$$0.43 \qquad \frac{3}{7} \qquad 43.8\% \qquad \frac{7}{16}$$

(*b*) Write these numbers in order of size.
Start with the smallest number.

....

(2)
_____

Question 16 (AO1): 49% of students got this right

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 17 (AO1): 47% of students got this right

1   Circle the cube number.

[1 mark]

4   8   25   9

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

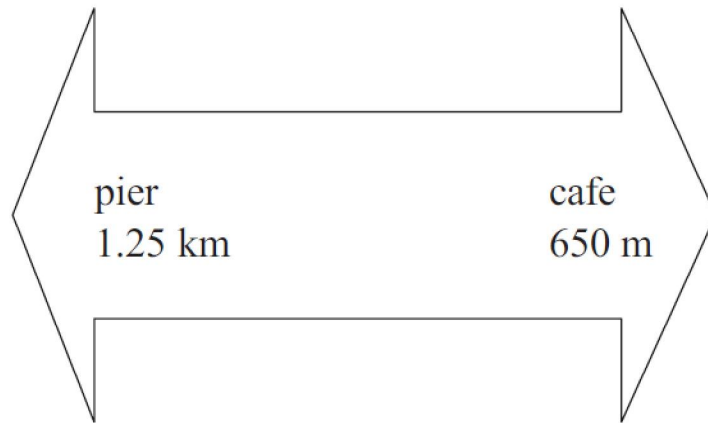**13.**   The table shows some information about the ages of 60 teachers.

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 19 (AO1): 45% of students got this right

13. John is walking along a path.
He sees this sign.

How far is it from the pier to the cafe along the path?

....

(Total 3 marks)

_____

Question 20 (AO1): 44% of students got this right

12   Martin has 8 pints of soup in a pan.
He also has 24 soup bowls.
He puts 0.3 pints of soup into each bowl.

How much soup has Martin left over?

Question 21 (AO1): 43% of students got this right

18   Andy flies from the UK to Japan.
     His plane ticket costs £554.

     Andy then flies from Japan to Australia.
     His plane ticket costs 70 140 Japanese Yen.
     The exchange rate is £1 = 140 Japanese Yen.

     Leila flies from the UK to Australia.
     Her plane ticket costs 1860 Australian dollars.
     The exchange rate is 1 Australian dollar = £0.62.

     Who pays more to fly from the UK to Australia, Andy or Leila?

     You must show clearly how you get your answer.

Question 22 (AO1): 42% of students got this right

6 There are 495 coins in a bottle.

$\dfrac{1}{3}$ of the coins are £1 coins.

124 of the coins are 50p coins.

The rest of the coins are 20p coins.

Work out the total value of the 495 coins.

£..
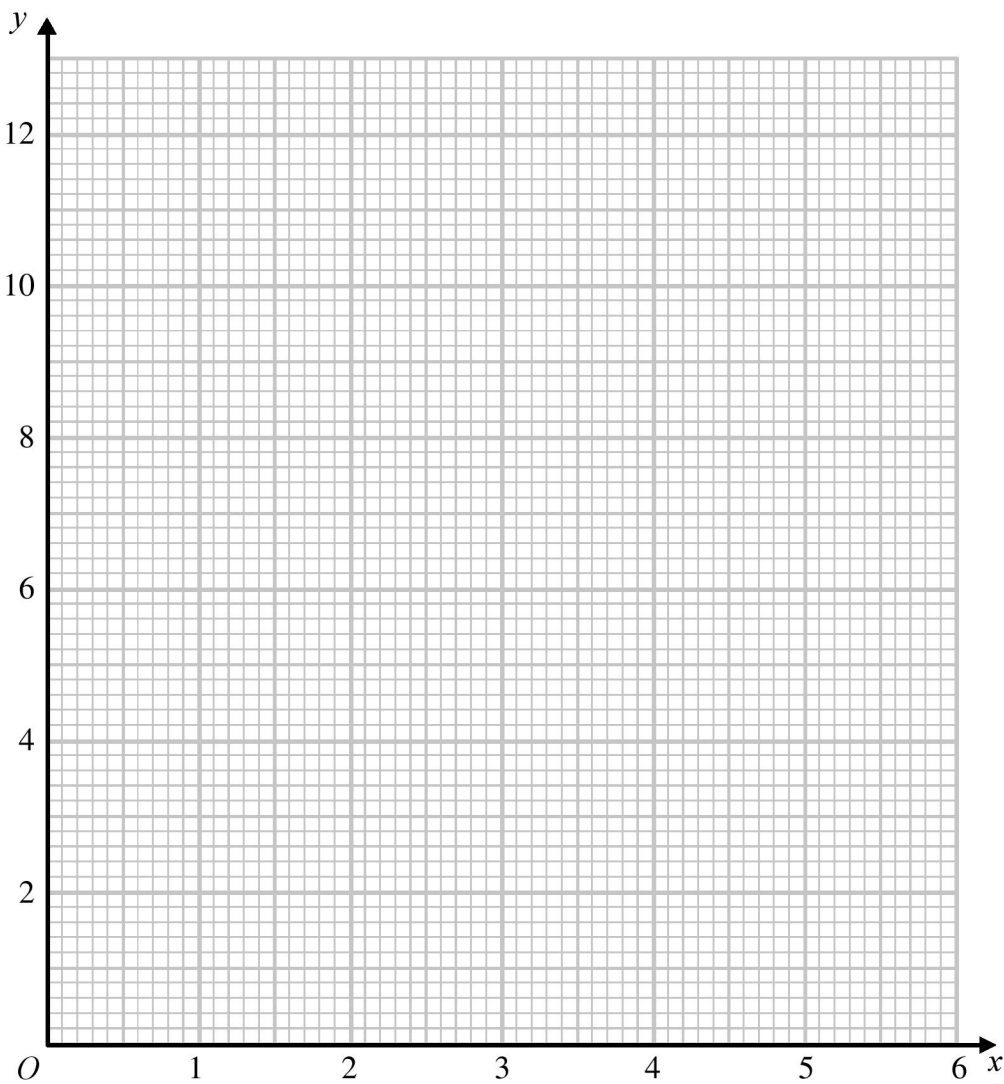
(Total for Question 6 is 4 marks)

_____

Question 23 (AO1): 41% of students got this right

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)

(Total for Question 22 is 4 marks)

Question 24 (AO1): 40% of students got this right

7. The length of a bus is 10 metres.

Gurjeet makes a model of the bus.
He uses a scale of 1 cm to 40 cm.

Work out the length of the model of the bus.
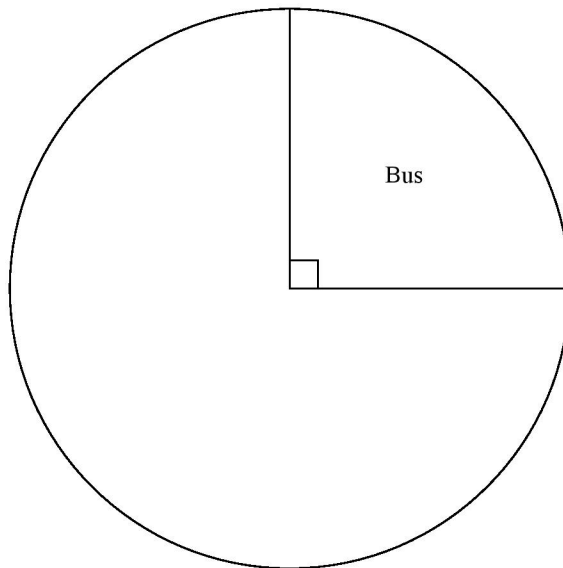Give your answer in centimetres.

.... cm

(Total 2 marks)

_____

Question 25 (AO1): 39% of students got this right

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.

Question 26 (AO2): 38% of students got this right

7   Steve says,

            "There are more prime numbers between 20 and 30
            than there are between 10 and 20"

     Is Steve right?
     You must show how you get your answer.

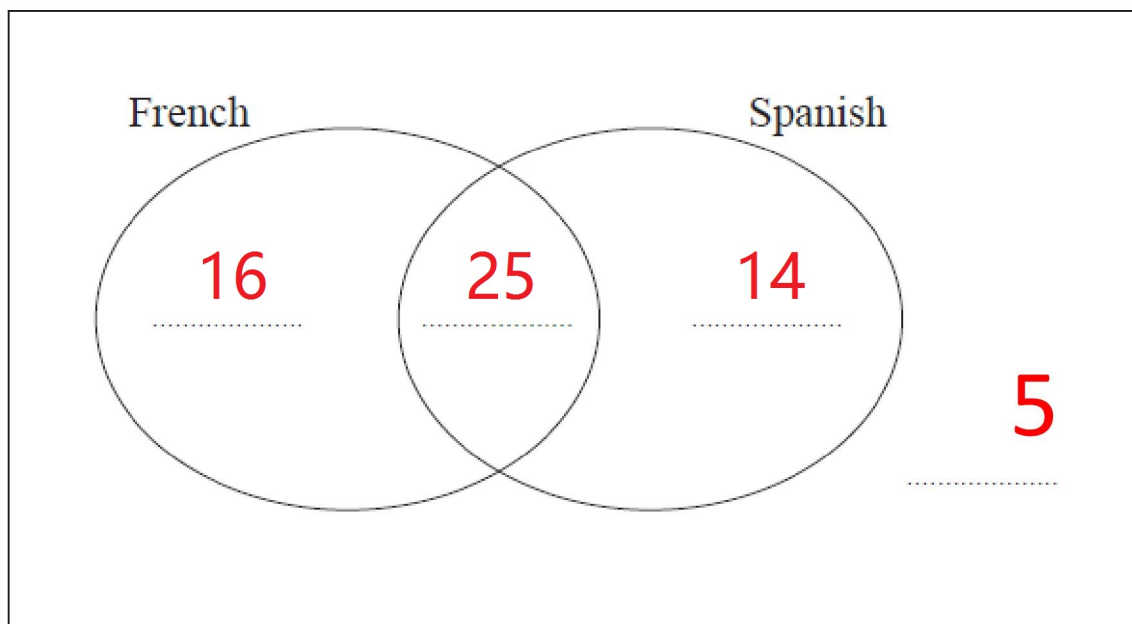# Question 27 (AO1): 37% of students got this right

23b   There are 60 students at a college.

25 students study both French and Spanish.
16 students study French but not Spanish.
A total of 39 students study Spanish.

Here is the Venn diagram for this information.

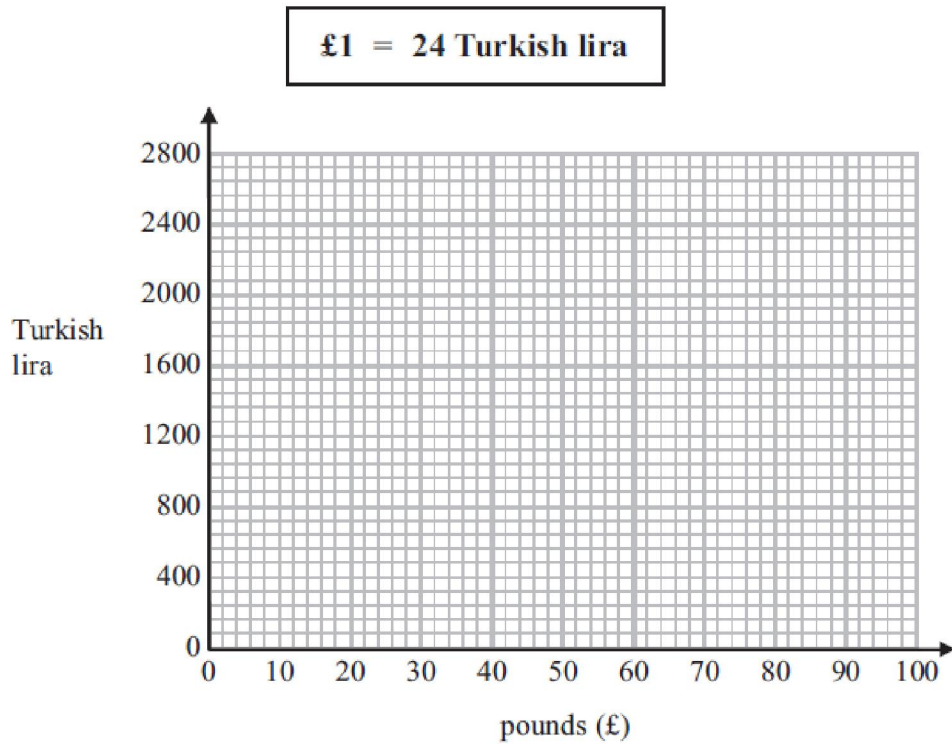One of the students at the college is to be selected at random.

(b) Write down the probability that this student studies neither French nor Spanish.

....

(1)

Question 28 (AO1): 35% of students got this right

7.   Mary goes on holiday to Turkey.
     Mary needs to change between pounds (£) and Turkish lira.

£1 = 24 Turkish lira

Mary changes 1800 Turkish lira into pounds.

(b) Use your graph to change 1800 Turkish lira into pounds.

£..

(2)

(Total 4 marks)

Answers to Qn 1 (AO1): 66% of students got this right

Paper 1MA1: 3F			
Question	Working	Answer	Notes
6(a)		8	B1 8 ±2mm
6(b)		35	B1 35 ±2°

Answers to Qn 2 (AO1): 65% of students got this right

Question		Working	Answer	Mark	Notes
15.	(a)		1.06	3	M1 for $6.99 \div 3$ (= 2.33) or $3r + 6t = 13.35$ M1 for $\frac{1}{2}$ (4.45 – "2.33") or $6t =$ "13.35" – 6.99 A1 cao

Answers to Qn 3 (AO1): 64% of students got this right

Question		Working	Answer	Mark	Notes
9.	(i)		6	3	B1 cao
	(ii)		5		B1 cao
	(iii)		9		B1 cao

Answers to Qn 4 (AO2): 62% 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 5 (AO1): 61% of students got this right

5	(a)		3	M1	for expanding the bracket or the intention to divide both sides by 2 as the first step oe
				A1	cao
	(b)		4	M1	for an intention to subtract 7 from both sides or intention to divide both sides by 3 as the first step oe
				A1	cao

Answers to Qn 6 (AO1): 60% of students got this right

Question		Working	Answer	Mark	Notes
6.	(a)		2500		B1 cao
	(ii)				

Answers to Qn 7 (AO3): 59% of students got this right

Question	Working	Answer	Mark	Notes
14	60 – 29 = 31 13 – 8 = 5 31 – 10 – 5 = 16 (table below)	16	4	M1 for calculation of total Men 60 – 29 (= 31 Men) M1 for calculation for Men who like Italian 13 – 8 (= 5 Men like Italian) M1 for calculation for Men who liked Thai '31' – 10 – '5' A1 for 16 **OR** M1 for a 2-way table or diagram with clear labelling showing at least 3 pieces of the given information correctly placed M1 for correct method for one calculated entry in diagram: Men 60–29(=31) or Women and Chinese 29–8–6 (= 15) or Men and Italian 13–8 (= 5) M1 for 3 correct entries for Men or 2 correct entries for Thai that with correct arithmetic would lead to 16 (Men and Thai) A1 for 16

Table in working column:

	Th	C	It	
W	6	**15**	8	29
M	**16**	10	**5**	**31**
	22	**25**	13	60

Answers to Qn 8 (AO1): 57% of students got this right

Question	Working	Answer	Mark	Notes
15 (a)		19.0$\dot{6}$	M1	for 7.84 **or** 12.2 **or** 1.38
			A1	for 19.066 (66666…) or 19.06 with some indication that the 6 is recurring

Answers to Qn 9 (AO1): 56% of students got this right

Paper 1MA1: 2F			
Question	**Working**	**Answer**	**Notes**
15 b		14.85	M1 for 12.25 or 2.6 A1

Answers to Qn 10 (AO1): 55% of students got this right

| 11. | (a) | RB, RG, RY, RP
BG, BY, BP
GY, GP
YP

(RR, BB, GG, YY, PP) | Correct 10
outcomes | 2 | B2 for all 10 correct outcomes with no incorrect pairs or repeats or additional reversed pairs condone replacement

(B1 for at least 6 pairs ignoring any incorrect pairs, repeats or additional reversed pairs) |
| | (b) | | $\dfrac{1}{10}$ | 1 | B1 for $\dfrac{1}{10}$
or ft from their incorrect number of outcomes from part (a) |

Answers to Qn 11 (AO3): 54% of students got this right

Paper 1MA1: 3F			
Question	**Working**	**Answer**	**Notes**
7		1,3,9 or 2,6,9 or 2,3,6 or 2,3,18 or 2,9,18	M1 3 factors of 18 or 3 numbers with prime total A1 eg 2, 3, 6

Answers to Qn 12 (AO2): 53% of students got this right

Question	Working	Answer	Mark	Notes
16.	500×1.2 (oe) = 600 $600 \div 12 =$	50	4	M2 for 500×1.2 (= 600) (oe) (M1 for 500×0.2 (= 100) (oe) M1 for $600 \div 12$ or $100 \div 12$ or $1.2 \div 12$ or $500 \div 12$ A1 cao

Answers to Qn 13 (AO1): 52% of students got this right

Question		Working	Answer	Mark	Notes
14		78 + 119 + 105 = 302 360 – 302 =58 180–58	122	3	M1 360 – (78 + 119 + 105) or 360 – 302 or 58 seen M1 (indep) 180 – "58" where the "58" must be < 90° and not 78° from the diagram. A1 cao

Answers to Qn 14 (AO1): 51% of students got this right

Question		Working	Answer	Mark	Notes
18.	(a)		0.4	2	M1 for $1 - (0.2 + 0.3 + 0.1)$ oe
					A1 for 0.4 oe
	(b)		24	2	M1 for 120×0.2 oe or $\dfrac{24}{120}$
					A1 for 24

Answers to Qn 15 (AO1): 50% of students got this right

5.	(b)	43%, 42.8.%, 43.8%, 43.75%	$\frac{3}{7}$ 0.43 $\frac{7}{16}$ 43.8%	2	M1 Convert at least 2 of the 3 correctly to percentages or decimals
					A1 correct order. Accept written in any correct form.
					SC: Award B1 (1 mark only) if ordered largest to smallest

Answers to Qn 16 (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 17 (AO1): 47% of students got this right

1   Circle the cube number.

[1 mark]

4   8   25   9

Answers to Qn 18 (AO1): 46% 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 19 (AO1): 45% of students got this right

				13.	1.9 km or 1900 m	3	M1 for 1.25 × 1000 (= 1250) **or** 650 ÷ 1000 (= 0.65)
							M1 for "1250" + 650 or 1.25 +"0.65"
							A1 for 1.9 km or 1900 m

Answers to Qn 20 (AO1): 44% of students got this right

Paper 1MA1: 2F			
Question	Working	Answer	Notes
12		0.8	P1 for process to find amount of soup put in bowls, eg 24 × 0.3 or amount of soup when 8 pints are shared between 24 bowls, eg 24 ÷ 8 P1 for complete process to find amount of soup left over A1

Answers to Qn 21 (AO1): 43% of students got this right

Question	Working	Answer	Mark	Notes
18		Leila from correct figures	P1	for process to change 70 140 Yen e.g. to £ by 70 140 ÷ 140 (= 501)
			P1	for complete process to find total cost of Andy's tickets, e.g. 70 140 ÷ 140 + 554 (= 1055)
			P1	for process to change 1860 dollars to £, e.g. 1860 × 0.62 (= 1153.2) or a method to change Andy's cost to dollars
			A1	for Leila with comparative figures of 1055 and 1153.2(0) [or 1701.61 dollars; or 147700 & 161448 Yen]

Answers to Qn 22 (AO1): 42% of students got this right

Question 6 (Total 4 marks)

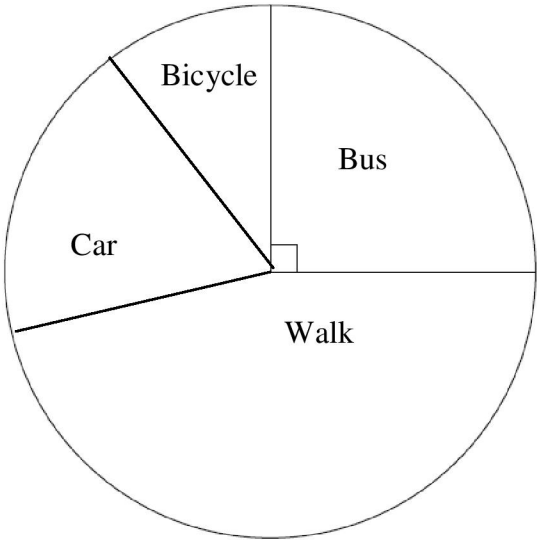| Part	Working or answer an examiner might expect to see	Mark	Notes
	$495 \div 3 = 165$	P1	This mark is given for a process find the value of the £1 coins
	$124 \times 0.50 = 62$	P1	This mark is given for a process to find the value of the 50p coins
	$495 - 165 - 124 = 206$ $206 \times 0.20 = 41.20$	P1	This mark is given for a process to find the value of the 20p coins
	$165 + 62 + 41.20 = 268.20$	A1	This mark is given for the correct answer only

Answers to Qn 23 (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 24 (AO1): 40% of students got this right

Question	Working	Answer	Mark	Notes
7.		25	2	M1 for $10 \div 40$ (= 0.25) or $10 \times 100 \div 40$ A1 cao

Answers to Qn 25 (AO1): 39% of students got this right

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

Answers to Qn 26 (AO2): 38% of students got this right

Part	Working or answer an examiner might expect to see	Mark	Notes
7	11, 13, 17, 19; 23, 29	1	This mark is given for listing any of the numbers 11, 13, 17, 19, 23, 29 as prime numbers
	No; 11, 13, 17 and 19 are between 10 and 20, and 23 and 29 are between 20 and 30	1	This mark is given for the correct conclusion with supporting lists

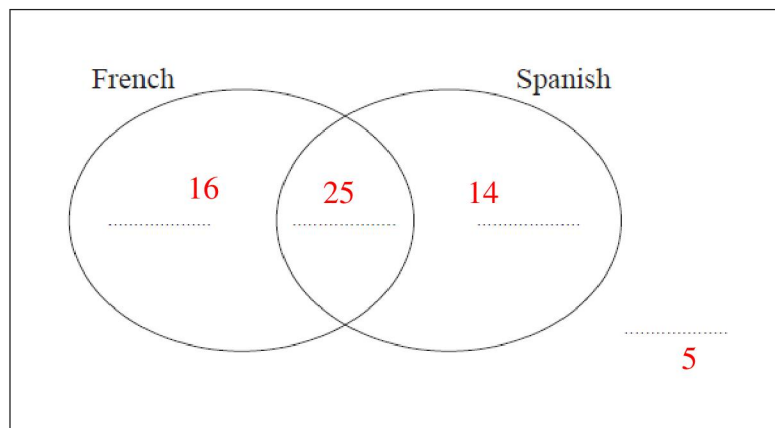# Answers to Qn 27 (AO1): 37% of students got this right

23b There are 60 students at a college.

25 students study both French and Spanish.
16 students study French but not Spanish.
A total of 39 students study Spanish.

(a) Complete the Venn diagram for this information.

One of the students at the college is to be selected at random.

(b) Write down the probability that this student studies neither French nor Spanish.

$\dfrac{5}{60}$

Answers to Qn 28 (AO1): 35% of students got this right

Question		Working	Answer	Mark	Notes
7.	(b)	Line from 1800 lira to graph and down	73 – 77	2	M1for line drawn from 1800 lira to their graph A1 ft for '75' ± £2