ADA PINPOINT PACKS

0_to_52_Percent_Pinpoint_AI_Pack

Made for Grade1to2_Paper3

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): 89% of students got this right

2. Nathan thinks of a number.
He doubles the number.
He adds 5

His answer is 17

What number does Nathan think of?

.....

(Total 3 marks)

Question 2 (AO1): 86% of students got this right

8. Here are the first five terms of a sequence.

14 11 8 5 2

(i) Write down the next term of this sequence.

.....

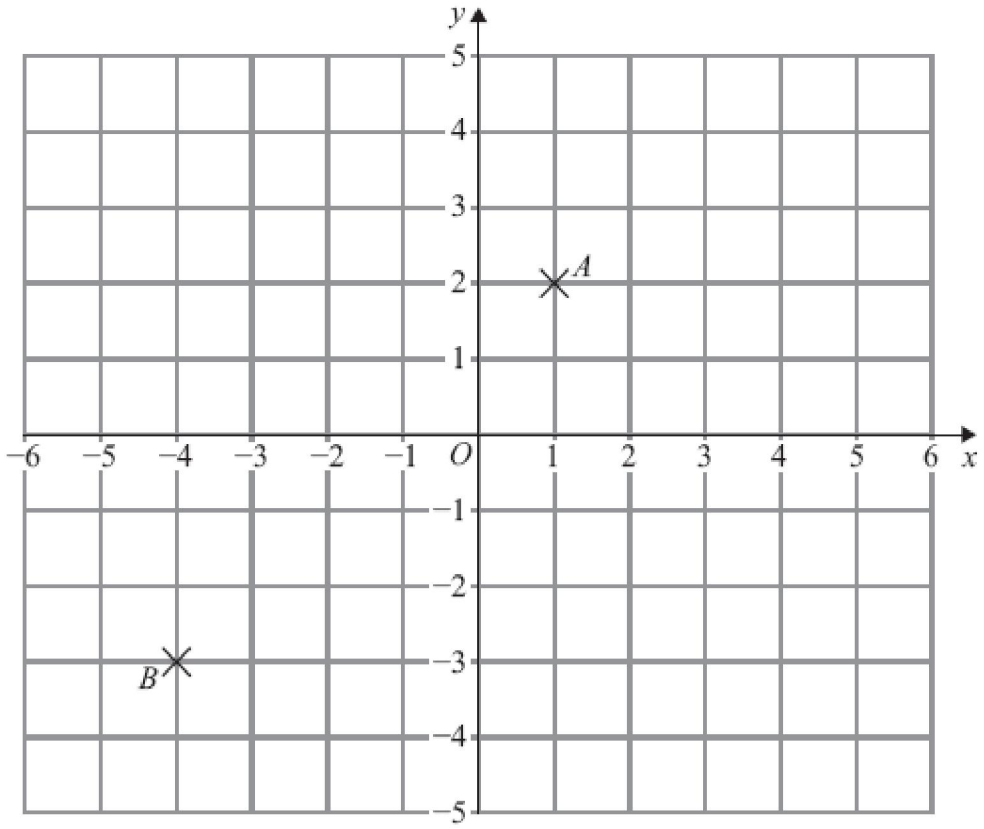
(ii) Explain how you got your answer.

.....

(Total for Question 8 is 2 marks)

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

3.



(*a*) (i) Write down the coordinates of the point *A*.

(..... , ...)

(ii) Write down the coordinates of the point *B*.

(..... , ...)

(2)

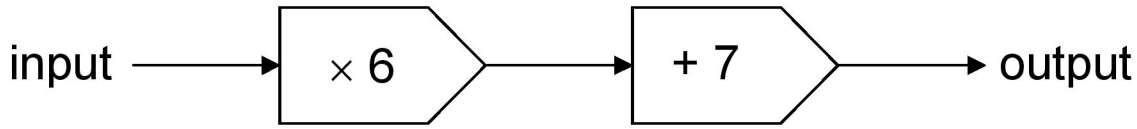
(*b*) On the grid, plot the point (5, −1).
Label this point *C*.

(1)

(Total 3 mark)

Question 4 (AO1): 82% of students got this right

9 Here is a number machine.



(*a*) Find the output when the input is 6

Question 5 (AO1): 81% of students got this right

3. Write 40 out of 50 as a fraction.
Give your fraction in its simplest form.

.....

(Total 2 marks)

Question 6 (AO1): 79% of students got this right

7. Here is a solid prism made from centimetre cubes.

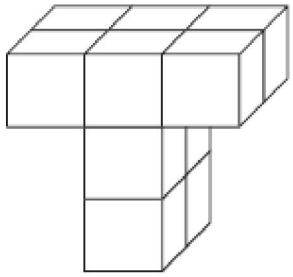


Diagram **NOT** accurately drawn

1 cm^3

Find the volume of the prism.

..... cm^3

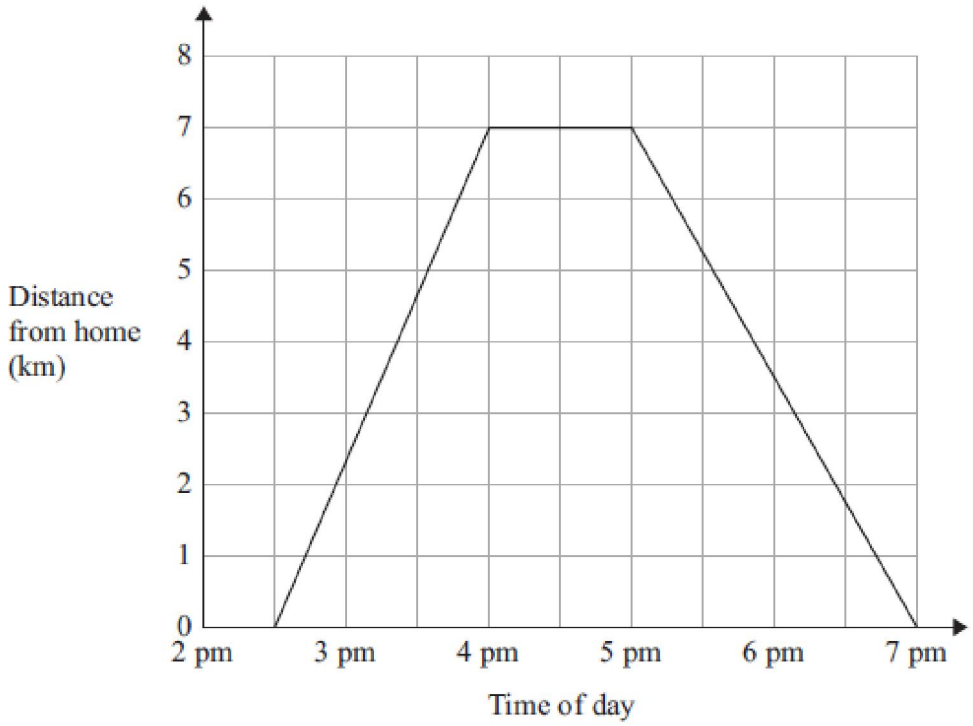
(Total 1 mark)

Question 7 (AO1): 77% of students got this right

15. Suha walked 7 km from her home.

She then had a rest.
Suha then walked home.

Here is Suha's travel graph.



(a) What time did Suha leave home?

(b) How long did Suha rest for?

(c) What time did Suha start to walk home?

(d) Work out the total time that Suha was away from home.

Question 8 (AO2): 75% of students got this right

2. A film starts at 1830.
The film ends at 2050.

(*a*) How long does the film last?

.....

(2)

Jan watches this film and then catches a bus home.

The bus leaves the bus stop 18 minutes after the film ends.
The bus takes 24 minutes to get to Jan's home.

(*b*) Will Jan be home before 2130?
You must show all your working.

(3)

(Total 5 marks)

Question 9 (AO1): 73% of students got this right

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

Work out the average speed of the sprinter.

Question 10 (AO1): 72% of students got this right

15 (*a*) Work out $\frac{4}{5}$ of 210 cm.

Question 11 (AO1): 71% of students got this right

3 Here is a list of fractions.

$$\frac{3}{9} \quad \frac{5}{15} \quad \frac{7}{21} \quad \frac{9}{30} \quad \frac{15}{45}$$

One of these fractions is **not** equivalent to $\frac{1}{3}$

Which fraction?

Question 12 (AO1): 70% of students got this right

3 Write 0.21 as a fraction.

Question 13 (AO3): 69% of students got this right

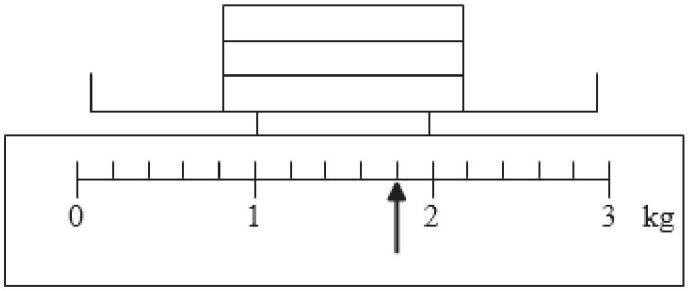
13 Here are the first three terms of a sequence.

32 26 20

Find the first two terms in the sequence that are less than zero.

Question 14 (AO1): 67% of students got this right

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 15 (AO1): 65% of students got this right

5 Write $\frac{3}{5}$ as a percentage

Question 16 (AO1): 65% of students got this right

10. Vicky counts the number of birds in her garden at 8 am on each of 10 days.

5 3 3 2 0 2 4 2 4 15

(*a*) Write down the mode.

.....

(1)

(*b*) Work out the mean.

.....

(2)

Question 17 (AO1): 63% of students got this right

12 A rule to change a UK shoe size to a European shoe size is

multiply the UK shoe size by 1.25 and then add 32

European shoe sizes are given as whole numbers.

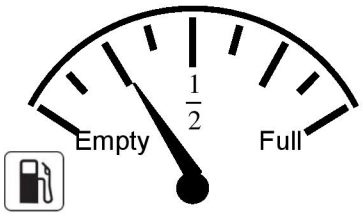
Katie's UK shoe size is 5.

Gustav's European shoe size is 42.

(*b*) Work out Gustav's UK shoe size.

Question 18 (AO1): 62% of students got this right

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

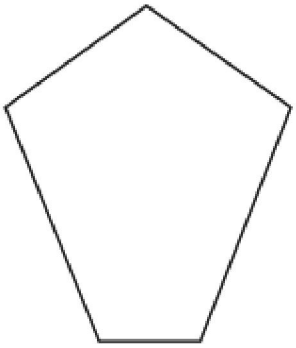


The scale shows information about how much petrol there is in the petrol tank.

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

Question 19 (AO1): 60% of students got this right

8. (a) Write down the special names of each of these polygons.



(i) ..... (ii) .....

(Total 2 marks)

Question 20 (AO1): 59% of students got this right

1. Write 0.013 as a fraction.

.....

(Total 1 mark)

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

7 Mary, Bianka and Steve are picking apples.
Mary picks 264 apples.
$\frac{1}{6}$ of these apples are green.

Bianka picks 150 apples.
28% of these apples are green.

Steve picks 340 apples.
15% of these apples are green.

Who picks the most green apples?
You must show all of your working.

Question 22 (AO1): 56% of students got this right

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

Question 23 (AO1): 54% of students got this right

11. In August 2008, Eddie hired a car in Italy.

The cost of hiring the car was £620
The exchange rate was £1 = €1.25

(a) Work out the cost of hiring the car in euros (€).

€ .....
(2)

Eddie bought some perfume in Italy.

The cost of the perfume in Italy was €50
The cost of the same perfume in London was £42

The exchange rate was still £1 = €1.25

(b) Work out the difference between the cost of the perfume in Italy and the cost of the perfume in London.
Give your answer in pounds (£).

£ .....
(3)

(Total 5 marks)

Question 24 (AO1): 54% of students got this right

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 (AO1): 53% of students got this right

9 Here is a map of an island.

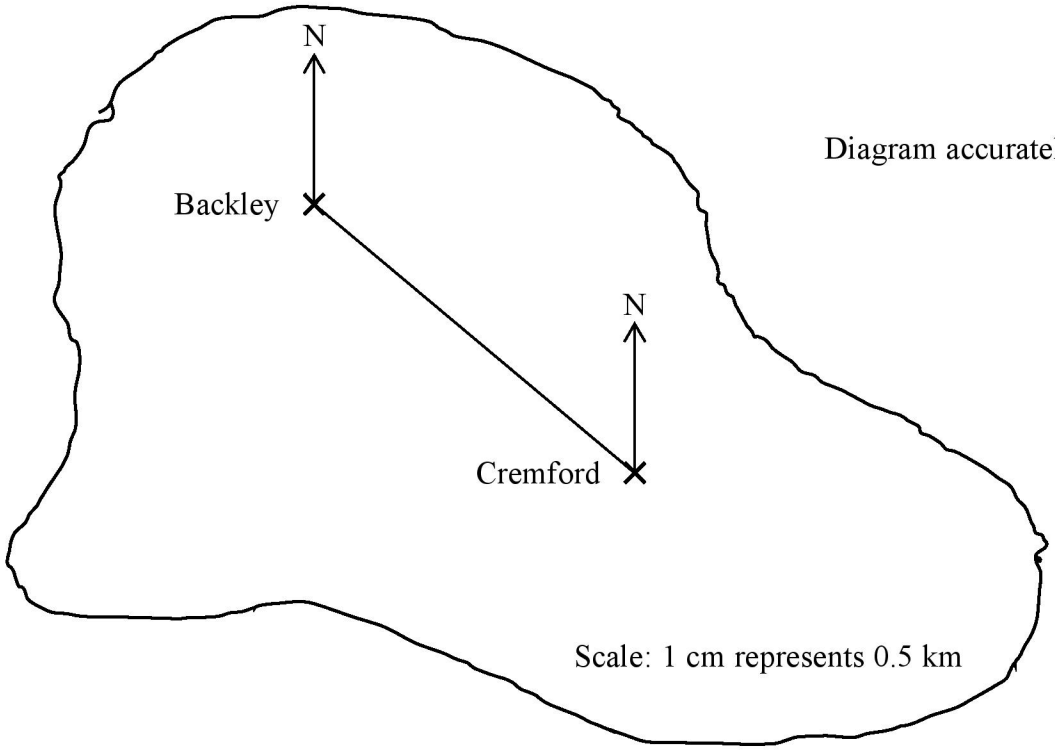


Diagram accurately drawn

A straight road joins the two villages, Backley and Cremford.

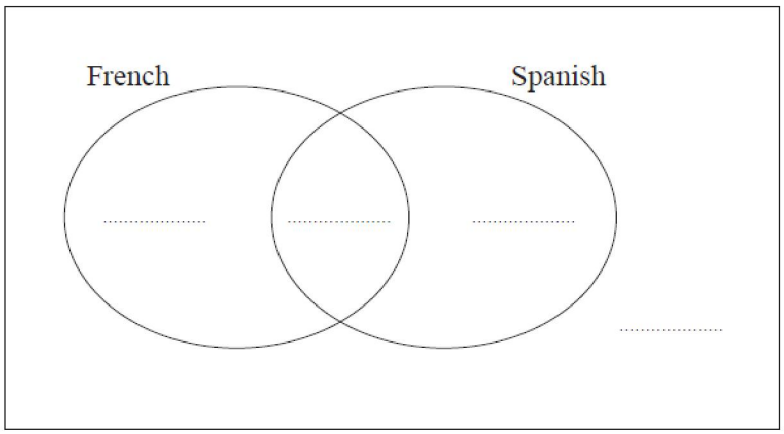
(*a*) Work out the real distance between the two villages.

Question 26 (AO1): 51% of students got this right

23a 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.



(3)

Question 27 (AO2): 50% of students got this right

6 Coffee is sold in jars.
There are 200 g of coffee in each jar.

Ben makes 8 cups of coffee each day.
He thinks he uses 2 g of coffee to make each cup of coffee.

Ben wants to buy enough coffee for 28 days.

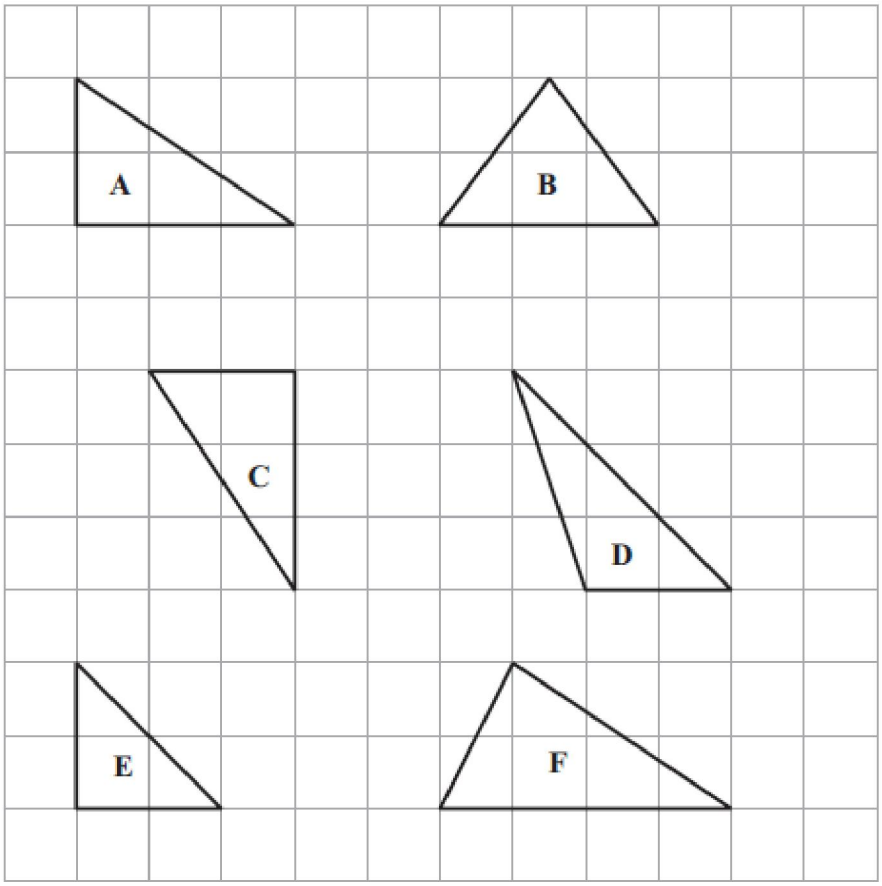
(*a*) How many jars of coffee does Ben need to buy?

Ben finds that he uses 2.5 g of coffee to make each cup of coffee.

(*b*) How does this affect the number of jars of coffee he needs to buy?
You must give a reason for your answer.

Question 28 (AO1): 49% of students got this right

17. Here are 6 triangles drawn on a grid of centimetre squares.



(c) Find the area of triangle **E**.

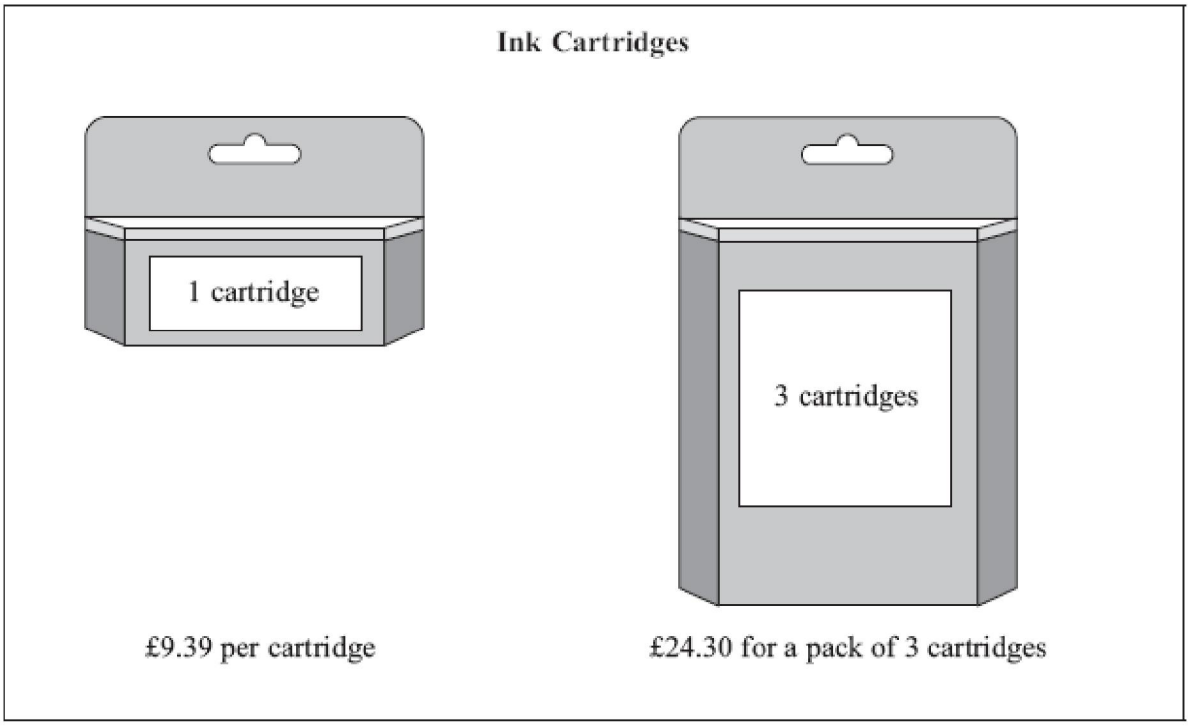
..... cm^2

(1)

(Total 3 marks)

Question 29 (AO2): 49% of students got this right

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



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

.....

(Total 5 marks)

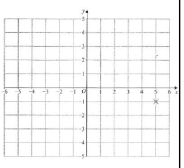
Answers to Qn 1 (AO1): 89% of students got this right

2.		$17 - 5 = 12$ $12 \div 2 =$ $2x + 5 = 17$ $2x = 17 - 5$	6	3	M1 $17 \div 2$ (= 8.5) or $17 - 5$ (= 12) M1 for correct order of operations –5 then ÷ 2 A1 cao **Alternative** M1 for forming the equation $2x + 5 = 17$ M1 for attempt to subtract 5 from both sides or divide both sides by 2 as the first step A1 cao **NB** For solutions involving trial and improvement award 3 marks (B3) for the correct answer of 6 but 0 marks for method; embedded solutions get 2 marks as long as the equation or working is complete.

Answers to Qn 2 (AO1): 86% of students got this right

8(i)		–1	B1	cao
(ii)		explanation	C1	explanation, e.g. by subtracting 3

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

3.	(*a*) (i)		(1, 2)	2	B1 (allow ($x = 1, y = 2$)
	(ii)		(−4, −3)		B1 (allow ($x = -4$, $y = -3$))
	(*b*)		plot(5, −1) on grid 	1	B1 for plotting at (5, −1)

Answers to Qn 4 (AO1): 82% of students got this right

Question	Working	Answer	Mark	Notes
9 (a)		43	B1	cao

Answers to Qn 5 (AO1): 81% of students got this right

Question		Working	Answer	Mark	Notes
3			$\frac{4}{5}$	2	M1 for $\frac{40}{50}$ oe , A1 cao

Answers to Qn 6 (AO1): 79% of students got this right

	7.	5 × 2	10	1	B1 cao

Answers to Qn 7 (AO1): 77% of students got this right

Question		Working	Answer	Mark	Notes
15	(a)		2.30 pm	1	B1 cao
	(b)		1 hour	1	B1 for 1 hour or 60 minutes
	(c)		5 pm	1	B1 cao
	(d)		4.5	1	B1 for 4.5 hours oe

Answers to Qn 8 (AO2): 75% of students got this right

Question		Working	Answer	Mark	Notes
2.	(a)		2 hours 20 minutes	2	M1 for a full method to find the difference between the two times or 2.2 hours A1 2 hours and 20 minutes or 140 minutes
	(b)		No with supporting calculations	3	M1 for adding 18 and 24 to 20 50 A1 21 32 C1 (dep M1) correct conclusion from the comparison of their figure with 21 30 **Or** M1 for subtracting 18 and 24 from 21 30 A1 20 48 C1 (dep M1) correct conclusion from the comparison of their figure with 20 50 **Or** M1 for finding the time differences A1 for 40 minutes and 42 minutes C1 (dep M1) correct conclusion from the comparison of their time durations

Answers to Qn 9 (AO1): 73% of students got this right

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

Answers to Qn 10 (AO1): 72% of students got this right

Paper 1MA1: 2F			
Question	**Working**	**Answer**	**Notes**
15 a		168	B1

Answers to Qn 11 (AO1): 71% of students got this right

Question	Working	Answer	Mark	Notes
3		$\frac{9}{30}$	B1	cao

Answers to Qn 12 (AO1): 70% of students got this right

Paper 1MA1: 2F			
Question	**Working**	**Answer**	**Notes**
3		$\frac{21}{100}$	B1

Answers to Qn 13 (AO3): 69% of students got this right

Paper 1MA1: 3F			
Question	**Working**	**Answer**	**Notes**
13		– 4 and –10	M1 for repeated subtraction of 6 oe A1 – 4 A1 –10

Answers to Qn 14 (AO1): 67% 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 15 (AO1): 65% of students got this right

Paper 1MA1: 3F			
Question	**Working**	**Answer**	**Notes**
5		60	B1 cao

Answers to Qn 16 (AO1): 65% of students got this right

Question		Working	Answer	Mark	Notes
10.	(a)		2	1	B1 cao
	(b)		4	2	M1 for showing a clear intention to add all ten numbers **and** to divide by 10 A1 cao

Answers to Qn 17 (AO1): 63% of students got this right

Question	Working	Answer	Mark	Notes
12 (b)		8	M1	for use of inverse operations, e.g. (42 – 32) ÷ 1.25 or presentation as an equation e.g. $1.25 \times x + 32 = 42$
			A1	cao

Answers to Qn 18 (AO1): 62% of students got this right

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

Answers to Qn 19 (AO1): 60% of students got this right

Question		Working	Answer	Mark	Notes
8			pentagon	2	B1
			hexagon		B1

Answers to Qn 20 (AO1): 59% of students got this right

1MA1 Practice papers Set 2: Paper 2F (Regular) mark scheme – Version 1.0					
Question		**Working**	**Answer**	**Mark**	**Notes**
1.			$\frac{13}{1000}$	1	B1 cao

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

Question	Working	Answer	Mark	Notes
7		Steve with correct figures	P1	for a process to find the number of green apples for one person, e.g. 264 ÷ 6 (= 44) **or** 0.28 × 150 (= 42) **or** 0.15 × 340 (= 51)
			P1	for a process that would lead to the number of green apples for two people, e.g. two of: 264 ÷ 6 (= 44) **or** 0.28 × 150 (= 42) **or** 0.15 × 340 (= 51)
			P1	for a process that would lead to the number of green apples for all three people, e.g. 264 ÷ 6 (= 44) **and** 0.28 × 150 (= 42) **and** 0.15 × 340 (= 51)
			C1	44, 42, 51 with a correct conclusion

Answers to Qn 22 (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 23 (AO1): 54% of students got this right

11.	(a)	1.25 × 620	775	2	M1 for 1.25× 620 (or equivalent) A1 cao
	(b)	50 ÷1.25 = 40 42 − 40 or 42 × 1.25 = 52.5 52.5 −50 = 2.50	2	3	M1 for 50 ÷1.25 (= 40) (or equivalent) M1 (dep) for 42 − "40" or "40" − 42 A1 cao for £2 OR M1 for 42 × 1.25 (= 52.5) oe M1 (dep) for "52.5"-50 or 50 – "52.5" A1 cao for £2

Answers to Qn 24 (AO1): 54% 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 (AO1): 53% of students got this right

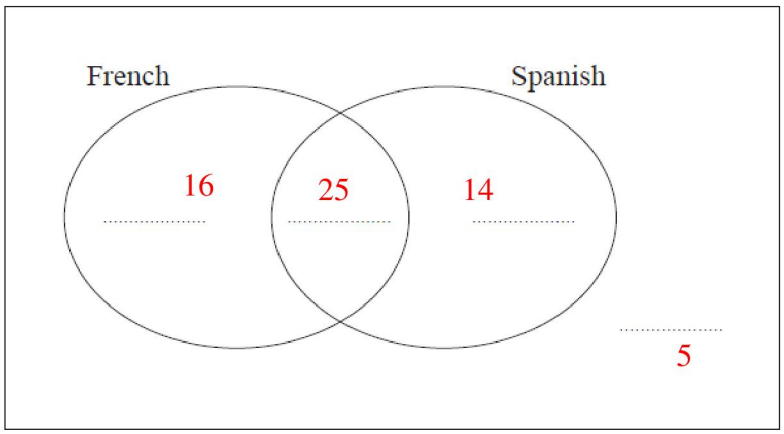
Part	Working or answer an examiner might expect to see	Mark	Notes
9 (a)	5.5 cm	1	This mark is given for accurately measuring the distance between Backley and Cremford (within the range 5.3cm to 5.7 cm)
	2.75	1	The mark is given for a correct answer in the range 2.65 to 2.85

Answers to Qn 26 (AO1): 51% of students got this right

23a 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.



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Answers to Qn 27 (AO2): 50% of students got this right

Paper 1MA1: 3F			
Question	**Working**	**Answer**	**Notes**
6 (a)		3	P1 start of process eg 8×2×28 (= 448) P1 eg '448' ÷ 200 (= 2.24) or build up method A1 cao
(b)		No change with reason	P1 process to evaluate effect of 2.5g C1 explanation that number of jars is unchanged

Answers to Qn 28 (AO1): 49% of students got this right

Question		Working	Answer	Mark	Notes
17	(c)		2	1	B1 cao

Answers to Qn 29 (AO2): 49% of students got this right

Question		Working	Answer	Mark	Notes
14.		9.39 × 10 24.30 × 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