

Expected Answers

Write your name here	
Surname	Other names
Centre Number	
Candidate Number	
Pearson Edexcel Level 1/Level 2 GCSE (9 - 1)	
<b>Mathematics</b> <b>Paper 1 (Non-Calculator)</b>	
<b>Foundation Tier</b>	
Mock Set 2 – Spring 2017 <b>Time: 1 hour 30 minutes</b>	Paper Reference <b>1MA1/1F</b>
<b>You must have:</b> Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser. Tracing paper may be used.	Total Marks

### Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided  
– *there may be more space than you need.*
- You must **show all your working**.
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- **Calculators may not be used.**



### Information

- The total mark for this paper is 80
- The marks for **each** question are shown in brackets  
– *use this as a guide as to how much time to spend on each question.*

### Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ➤

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Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

- 1 (a) Write the following numbers in order of size.  
Start with the smallest number.

-5    0    -7    4    -10

-10, -7, -5, 0, 4

(1)

- (b) Write the following numbers in order of size.  
Start with the smallest number.

0.520   0.200   0.250   0.205  
0.52    0.2    0.25    0.205

0.2, 0.205, 0.25, 0.52

(1)

(Total for Question 1 is 2 marks)

- 2 Write  $\frac{7}{10}$  as a percentage.

70 %

(Total for Question 2 is 1 mark)

- 3 Write 5.5454 correct to 2 decimal places.

5.55

(Total for Question 3 is 1 mark)

- 4 How many minutes are there in  $3\frac{1}{2}$  hours?

210 minutes

(Total for Question 4 is 1 mark)

- 5 Write down the 17th odd number.

33

(Total for Question 5 is 1 mark)

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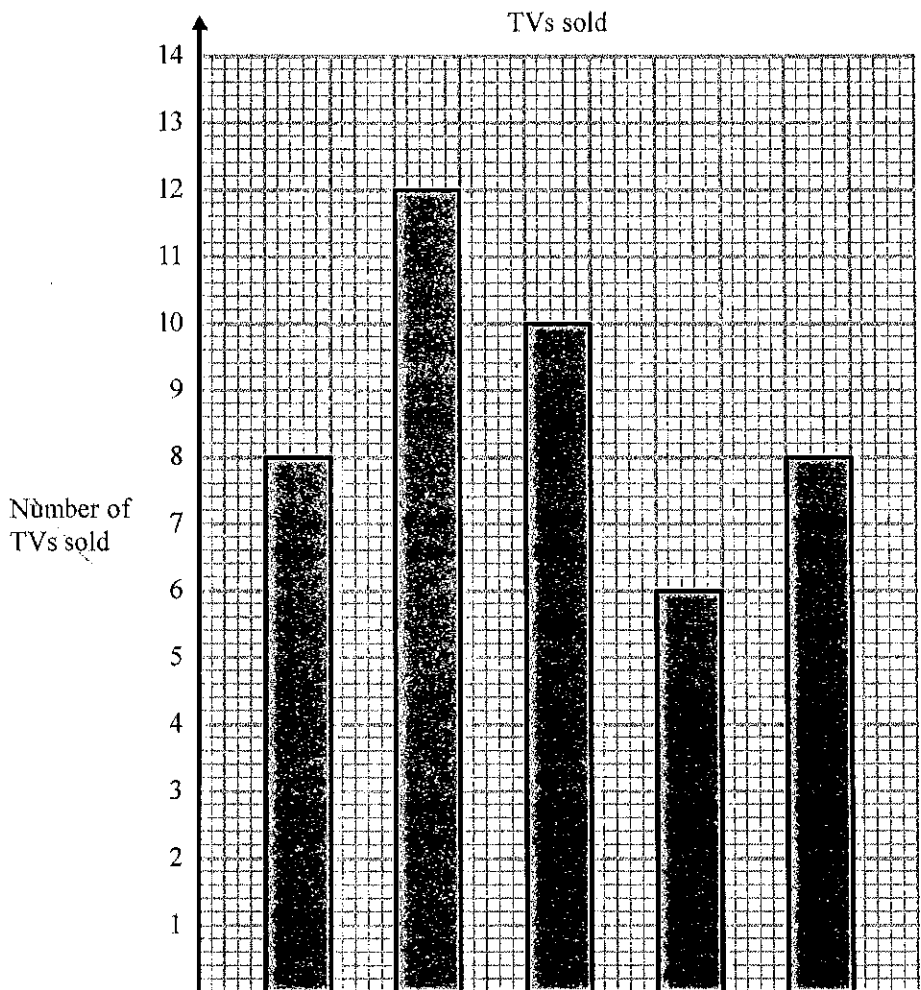
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- 6 The table shows the number of TVs sold in a shop on each of five days.

Day	Mon	Tue	Wed	Thu	Fri
Number of TVs sold	8	12	9	6	8

David uses this information to draw the graph below.



Write down **three** things wrong with this graph.

- 1 No label on x axis
- 2 Wednesday should be 9 high not 10
- 3 No zero on Y axis

(Total for Question 6 is 3 marks)



S 5 3 6 0 2 A 0 3 2 0

- 7 On Monday Alex earned £120  
She worked for 8 hours.

(a) Work out Alex's hourly rate of pay.

$$120 \div 8 =$$

M1

2

£ 15 (2)

On Monday Alex earned £120  
On Tuesday she earned £100

Alex earned the same amount of money on Wednesday, on Thursday and on Friday.  
She earned a total of £550 for these five days.

(b) How much did Alex earn on Wednesday?

M1  $550 - (120 + 100)$   
 $= 330$

M1

$$330 \div 3 =$$

3

£ 110 (3)

(Total for Question 7 is 5 marks)

- 8 Write down an example to show that each of the following statements is **not** correct.

(a) The sum of an odd number and an even number is even.

eg  $3 + 4 = 7$

B1

(1)

(b) The product of two prime numbers is never even.

eg  $2 \times (\text{Any Prime number})$

B1

3

(1)

(c) When you square an integer the result is always an even integer.

eg  $3^2 = 9$

B1

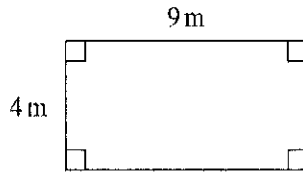
(1)

(Total for Question 8 is 3 marks)



9 Shirley has a garage.

Here is a plan of her garage floor.



Shirley wants to buy enough paint to cover the garage floor as cheaply as possible. She can buy her paint from Decor U or from Paint Store.

**Decor U**  
Floor paint

£3.70 each tin  
1 tin covers 12 m<sup>2</sup>

**Paint Store**  
Floor paint

£3.00 each tin  
1 tin covers 10 m<sup>2</sup>

From which of these two shops should Shirley buy her paint?  
You must show all your working.

Area of garage

$$4 \times 9 = 36 \text{ m}^2$$

Decor U

$$36 \div 12 = 3 \text{ tins}$$

$$3 \times £3.70 = \underline{£11.10}$$

Paint Store

$$36 \div 10 = 3.6$$

needs 4 tins

$$4 \times 3 = \underline{£12.00}$$

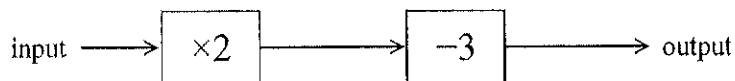
She should buy her paint from  
Decor U

(Total for Question 9 is 4 marks)



S 5 3 6 0 2 A 0 5 2 0

10 Here is a number machine.



(a) What is the **output** when the input is 4?

$$4 \times 2 = 8$$

$$8 - 3 = 5$$

✓ (5)  
(1)

(b) What is the **input** when the output is 11?

$$11 + 3 = 14$$

$$14 \div 2 = 7$$

(11)

✓ (7)  
(2)

(c) Show that there is an input for the machine for which the output is the same as the input.

$$3 \times 2 = 6$$

$$6 - 3 = 3$$

(11)

(3)

(3)

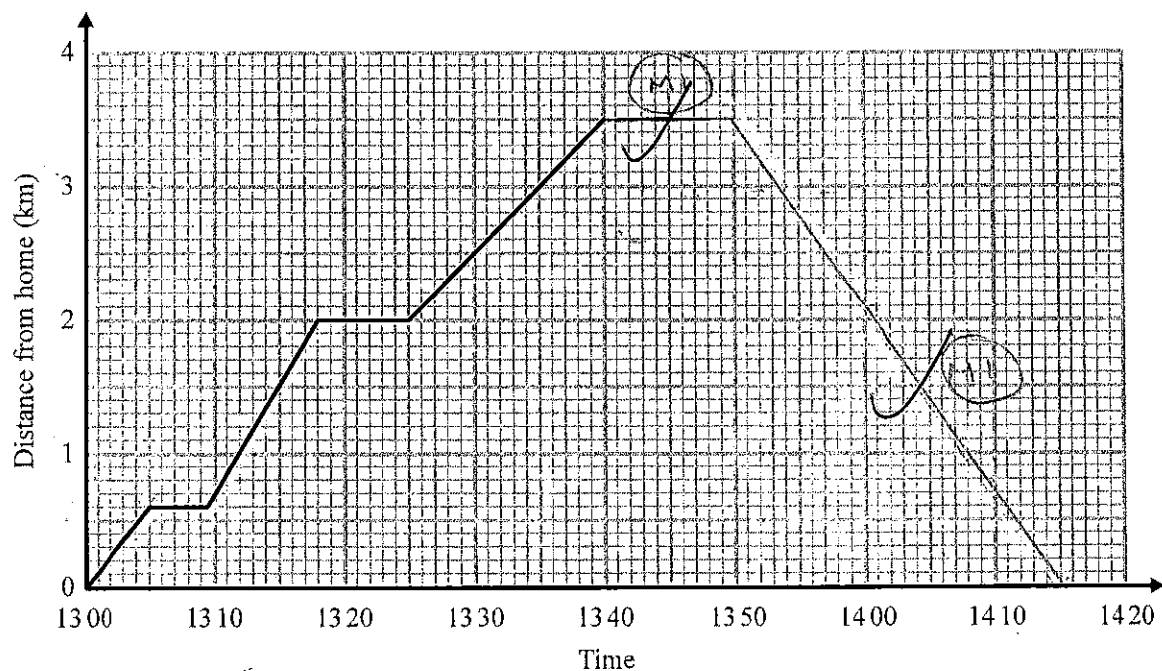
(2)

(Total for Question 10 is 5 marks)



- 11 Arshad delivers parcels on his bike.  
He starts from his home.

Here is the travel graph for the first 40 minutes of Arshad's journey.



- (a) What time did Arshad start his journey?

13:00  
(1)

Arshad had to stop to deliver each parcel.

- (b) How long, in minutes, did his first stop take?

$4\frac{1}{2}$  minutes  
(1)

- (c) What is the distance between the two stops shown on the travel graph?

$$2 - 0.6 = 1.4$$

1.4 km  
(2)

At 13:40, Arshad stopped for 10 minutes to deliver his last parcel.  
He then cycled home at a steady speed.  
Arshad got home at 14:15

- (d) Complete the travel graph to show this information.

(Total for Question 11 is 6 marks)



- 12 Denise wants to give a pen set to every student in her school.  
There are 799 students in the school.

Denise already has 102 pen sets.  
She will need to buy more pen sets.  
Each pen set costs 89 pence.

- (a) Work out an estimate for the total cost of the pen sets Denise needs to buy.

$$800 - 100 = 700 \quad (P1)$$

$$(P1) \quad 90p \times 700 = 63000 \rightarrow £630$$

$$\text{or } £0.9 \times 700 = £630$$

$$(A1) \quad £630$$

(3)

- (b) Is your answer to (a) an underestimate or an overestimate?  
Give a reason for your answer.

Over estimate as price and number of  
Students has been rounded up

(1)

(Total for Question 12 is 4 marks)

- 13 In a year group there are 100 boys and 120 girls.

Write as a ratio the number of boys to the number of girls.  
Give your answer in its simplest form.

$$100 : 120$$

$$10 : 12 \quad (A1)$$

$$5 : 6 \quad (A1)$$

$$2$$

(Total for Question 13 is 2 marks)



- 14 The table below shows some information about the number of times each student in a class was late last week.

Lates	Frequency
0	15
1	8
2	3
3	3
4	1

$fx$

0

8

6

9

4

27

✓

(M1)

Work out the mean number of lates per student.

30

$$27 \div 30 = 0.9$$

✓ (A1)  
0.9

(Total for Question 14 is 3 marks)

- 15 3 jars of paprika and 4 packets of sage have a total weight of 290 grams.  
7 jars of paprika have a total weight of 210 grams.

Work out the total weight of 2 jars of paprika and 2 packets of sage.

$$7P = 210$$

$$P = 30$$

✓ (M1)

$$3P + 4S = 290$$

$$90 + 4S = 290$$

$$4S = 200$$

$$S = 50$$

✓ (M1)

$$30 + 30 + 50 + 50 =$$

160

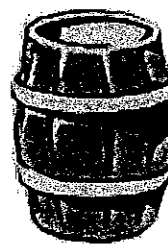
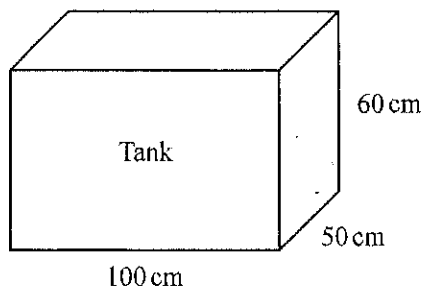
✓ (A1)

(Total for Question 15 is 4 marks)



S 5 3 6 0 2 A 0 9 2 0

16



barrel

The diagram shows the dimensions of a tank in the shape of a cuboid.

The tank is  $\frac{1}{3}$  full of water.

The diagram also shows a barrel that contains water.

Tina is told that there is  $18\,000\text{ cm}^3$  of water in the barrel.

Tina is going to empty all the water from the barrel into the tank.

(a) What will the depth of water in the tank then be?

Vol of tank =  $50 \times 60 \times 100 = 300,000\text{ cm}^3$

Water already in tank =  $100,000\text{ cm}^3$

$100,000 = \text{height of } 20\text{ cm}$

$\therefore 1\text{ cm height} = 5000\text{ cm}^3$

$18\,000 \div 5000 = 3.6\text{ cm}$

Depth will be  $20 + 3.6 =$

$23.6\text{ cm}$   
(4)

Tina finds out that the barrel contains less than  $18\,000\text{ cm}^3$  of water.

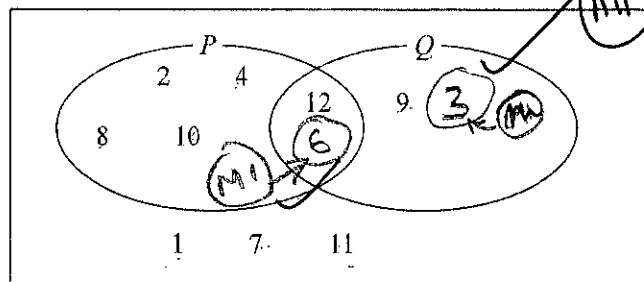
(b) Explain what effect this will have on your answer to part (a).

The height of the water will be less than  $23.6\text{ cm}$ .

(Total for Question 16 is 5 marks)



17 The numbers 1, 2, 4, 7, 8, 9, 10, 11 and 12 are put into a Venn diagram.



The number 3 is in set  $Q$  but not in set  $P$ .  
The number 6 is in both set  $P$  and set  $Q$ .

(a) Complete the Venn diagram.

(2)

A student chooses at random a number in the completed Venn diagram.

(b) Write down the probability that this number is **not** in Set  $Q$ .

$$\frac{7}{11}$$

(2)

(Total for Question 17 is 4 marks)



S 5 3 6 0 2 A 0 1 1 2 0

18 Ali and Beth divide £280 in the ratio 2 : 5

Work out how much each person gets.

$$280 \div (2+5)$$

$$280 \div 7 = 40$$

Ali £ 80  
Beth £ 200

(Total for Question 18 is 2 marks)

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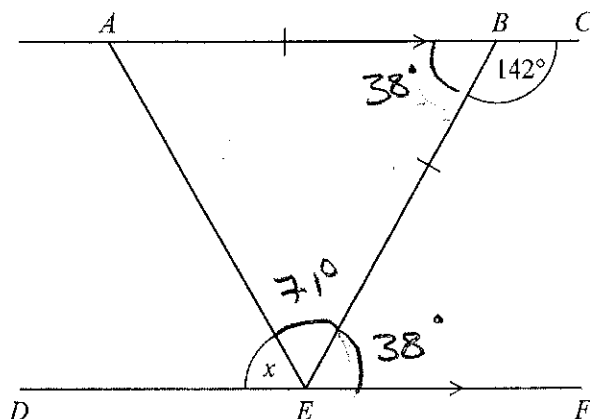
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19



$ABC$  and  $DEF$  are parallel straight lines.  
 $ABE$  is an isosceles triangle with  $AB = BE$ .  
 Angle  $CBE = 142^\circ$

Work out the size of angle  $x$ .  
 Give a reason for each stage in your working.

$\hat{A}BE$  Supplementary to  $142 - 38^\circ$  (M1)  
 $\hat{B}EF$  Alternate to  $\hat{A}BE - 38^\circ$  (A1)  
 $\hat{A}EB$  Equal angle in isosceles -  $71^\circ$  (C1)  
 Angles in a triangle add up to  $180^\circ$  (C1)  
 Angles on straight line add up to  $180^\circ$  (C1)

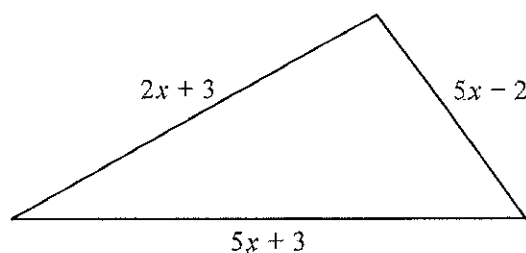
71

(Total for Question 19 is 5 marks)



S 5 3 6 0 2 A 0 1 3 2 0

20 The perimeter of a square has the same length as the perimeter of this triangle.



All measurements are in centimetres.

Find an expression, in terms of  $x$ , for the length of a side of the square.

Give your answer in its simplest form.

$$= 2x + 3 + 5x + 3 + 5x - 2$$

Perimeter of triangle =  $12x + 4$

$$\frac{12x + 4}{4} = 3x + 1$$

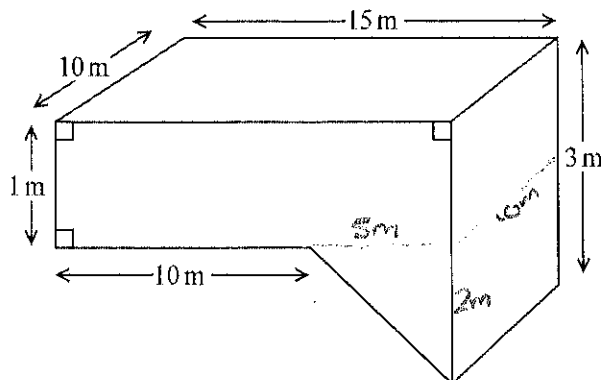
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$$3x + 1$$

(Total for Question 20 is 3 marks)



21



The diagram shows a swimming pool.  
 The swimming pool is in the shape of a prism.  
 The swimming pool is filled with water at a rate of 5 litres per second.

Jeremy has 10 hours to fill the swimming pool.  
 $1 \text{ m}^3 = 1000 \text{ litres}$ .

Will he completely fill the swimming pool in 10 hours?  
 You must show all your working.

• Volume of pool =  $1 \times 10 \times 15 = 150$

+  $5 \times 10 \times 2$

50

200 m<sup>3</sup>

•  $200 \text{ m}^3 = 200,000 \text{ litres}$

• 10 hours =  $10 \times 60 \times 60 = 36000 \text{ Seconds}$

•  $36000 \times 5 = 180,000 \text{ litres}$

• No he will be 20,000 Short.

(Total for Question 21 is 5 marks)



S 5 3 6 0 2 A 0 1 5 2 0

22 It takes 12 men 5 days to complete a job.

(a) Work out how many days it would take 3 men to complete the same job.

12 men = 5 days  
6 men = 10 days  
3 men = 20 days

~~12~~

M1

✓ 20  
(2)

(b) (i) State one assumption you made in working out your answer.

~~Half the men take double the time~~  
Work rate has to be the same ✓ (1)

eg (ii) How will your answer be affected if your assumption is not correct?

Less men may work quicker as they may not chat as much. (0e) (1)

(Total for Question 22 is 4 marks)

Rate of work is slower, it takes longer  
Rate of work is faster, it takes less time.



The blue dice can land on 1, 2, 3, 4, 5, 6, 7 or 8

(a) Complete the probability tree diagram.


$$\frac{5}{6} \times \frac{7}{8} = \frac{35}{48}$$

S 5 3 6 0 2 A 0 1 7 2 0

24 Here are the first 7 terms of a quadratic sequence.

3    6    11    18    27    38    51  
+3   +5   +7   +9   +11   +13

(a) Find the next term in this sequence.

$$51 + 15 = 66$$

✓ (B1)  
~~44~~  
66  
(1)

The  $n$ th term of a different sequence is  $2n^2 + 5$

(b) Work out the 6th term of this sequence.

$$(2 \times 6^2) + 5$$

$$(2 \times 36) + 5$$

$$72 + 5 = 77$$

✓ (B1)  
~~44~~  
77  
(1)

(Total for Question 24 is 2 marks)

25 A metal box has a weight of  $8 \times 10^3$  grams.

Find, in standard form, the weight of 10 of these metal boxes.

$$8 \times 10^3 \times 10^1 =$$

✓ (B1)  
 $8 \times 10^4$  ..... grams

(Total for Question 25 is 1 mark)

TOTAL FOR PAPER IS 80 MARKS

