

Please check the examination details below before entering your candidate information

Candidate surname

Other names

**Pearson Edexcel**  
**Level 1/Level 2 GCSE (9–1)**

Centre Number

--	--	--	--	--

Candidate Number

--	--	--	--

Time 1 hour 30 minutes

Paper  
reference

**1MA1/2F**

**Mathematics**  
**PAPER 2 (Calculator)**  
**Foundation Tier**

\* SOLUTIONS \*

**You must have:** Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser, calculator, Formulae Sheet (enclosed). 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 be used.**
- If your calculator does not have a  $\pi$  button, take the value of  $\pi$  to be 3.142 unless the question instructs otherwise.



### 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.
- Try to answer every question.
- Check your answers if you have time at the end.
- Good luck with your examination.

Turn over ►

P66304A

©2021 Pearson Education Ltd.

1/1/1/1



  
**Pearson**

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

- 1 Write 1476 to the nearest 10

$$\begin{array}{r} \text{H} \quad \text{T} \quad | \quad \text{O} \\ 1 \quad 4 \quad 7 \quad | \quad 6 \end{array}$$

1480

(Total for Question 1 is 1 mark)

- 2 Write a fraction in the box to make the calculation correct.

$$1 - \frac{3}{10} = \boxed{\frac{7}{10}}$$

(Total for Question 2 is 1 mark)

- 3 Here is a list of numbers.

3 3 3 3 4 4 5 7 8

Write down the mode of the numbers.

(most common)

3

(Total for Question 3 is 1 mark)

- 4 Write down a 3 digit number that is a multiple of 5

eg. 415 (ends in 5 or 0)

(Total for Question 4 is 1 mark)

- 5 Write 0.4 as a percentage.

$$\begin{array}{l} \downarrow \\ \frac{4}{10} \end{array} \begin{array}{l} \xrightarrow{\times 10} \\ = \\ \xrightarrow{\times 10} \end{array} \frac{40}{100} = 40\%$$

40

%

(Total for Question 5 is 1 mark)



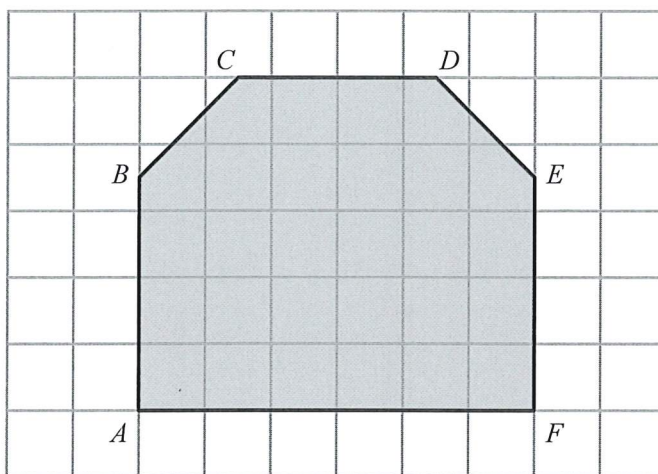
- 6 Write the following numbers in order of size.  
Start with the smallest number.

-11    -2    8    -7    3    10

-11, -7, -2, 3, 8, 10

(Total for Question 6 is 1 mark)

- 7 Here is polygon  $ABCDEF$  on a square grid.



- (a) Write down the mathematical name of the polygon.

(6 sides) hexagon  
(1)

- (b) Which side of the polygon is parallel to the side CD?

AF (or FA)  
(1)

- (c) Write down a side of the polygon that is perpendicular to the side  $AF$ .

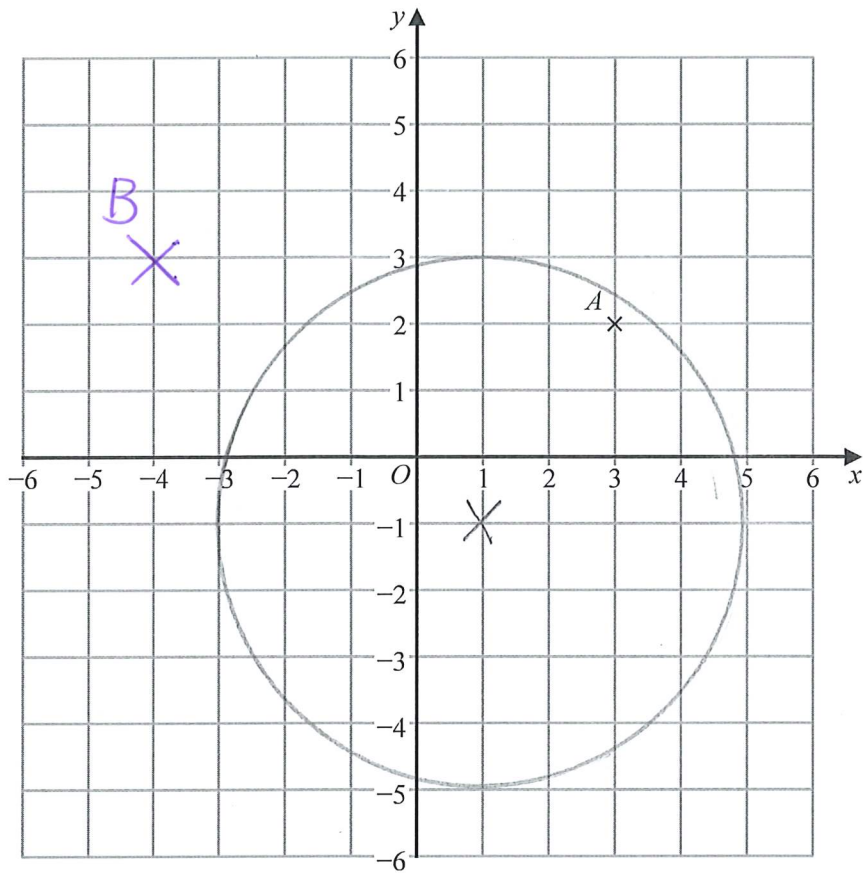
(right angles) AB or EF  
(1)

(Total for Question 7 is 3 marks)



P 6 6 3 0 4 A 0 3 2 0

8 Here is a centimetre grid.



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

(3, 2)  
(1)

(b) On the grid, mark with a cross (×) the point with coordinates (−4, 3)  
Label this point *B*.

(1)

(c) On the grid, draw the circle with  
centre (1, −1)  
and radius 4 cm.

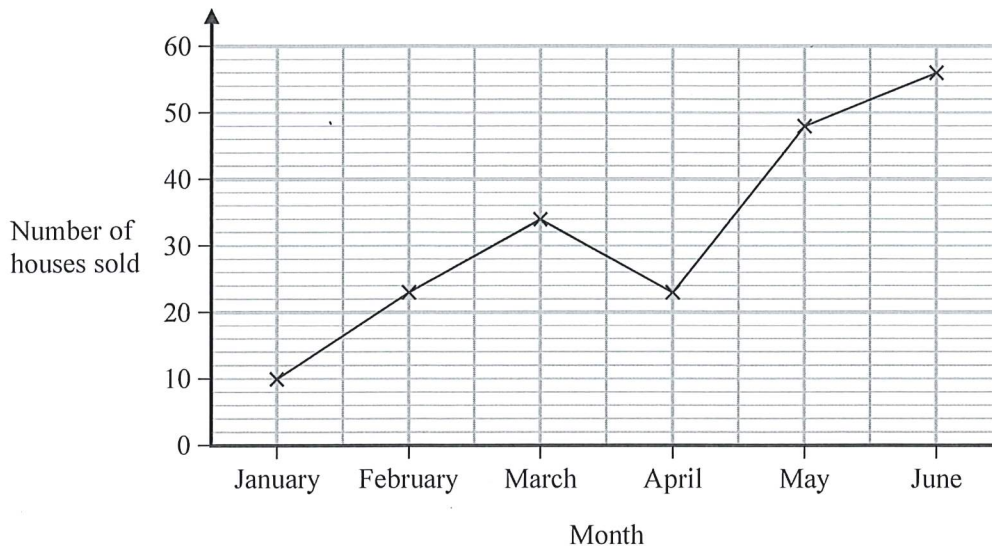


(2)

(Total for Question 8 is 4 marks)



- 9 The graph shows information about the number of houses sold by an estate agent in each of six months last year.



- (a) How many houses were sold by the estate agent in February?

23

(1)

- (b) For this estate agent, write down the ratio of the number of houses sold in January to the number of houses sold in June.

(or 5 : 28)

10 : 56

(2)

(Total for Question 9 is 3 marks)



10 Sonia wants to book a holiday.  
The holiday will cost £1428

Sonia will pay a deposit of £150  
She will then pay the rest of the cost in 6 equal monthly payments.

How much is each monthly payment?

$$1428 - 150 = 1278$$

$$1278 \div 6 = 213$$

£ 213

(Total for Question 10 is 3 marks)

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

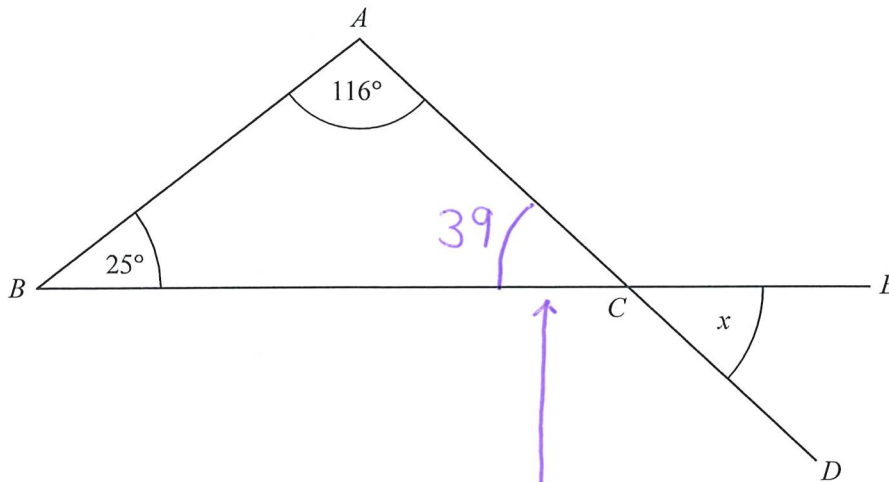
DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



11 The diagram shows a triangle  $ABC$ .



$ACD$  and  $BCE$  are straight lines.

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

(angle rule)

$$116 + 25 = 141$$

$$180 - 141 = 39$$

angles in a triangle add up to  $180^\circ$ .

$$x = 39$$

(vertically) opposite angles are equal

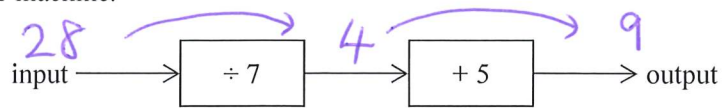
39

(Total for Question 11 is 3 marks)



P 6 6 3 0 4 A 0 7 2 0

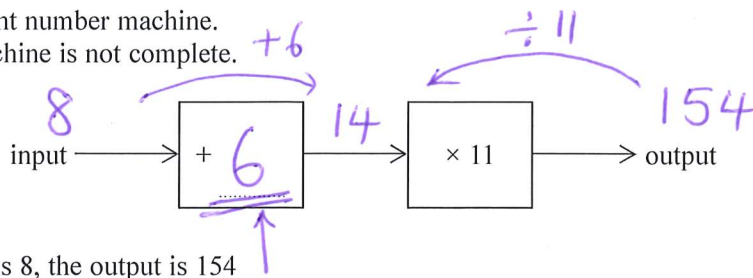
12 Here is a number machine.



(a) Work out the output when the input is 28

9  
-----  
(1)

Here is a different number machine.  
The number machine is not complete.



When the input is 8, the output is 154

(b) Complete the number machine.

(2)

(Total for Question 12 is 3 marks)



DO NOT WRITE IN THIS AREA

13 Sophie works in a bed shop.  
During the last three months she sold 198 beds.

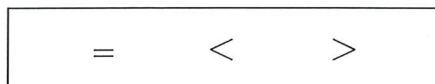
- 59 beds were sold without a mattress.
- 45 beds were double beds.
- 17 of the single beds were sold without a mattress.
- 67 of the 83 king size beds were sold with a mattress.

Use this information to complete the two-way table.

	Single	Double	King size	Total
With mattress	53	19	67	139
Without mattress	17	26	16	59
Total	70	45	83	198

(Total for Question 13 is 3 marks)

14 The box below contains three mathematical symbols.



From the box, choose a symbol to make each of the following statements correct.

(i)  $\frac{5}{8} > \frac{2}{8}$  (1)

(ii)  $-2 \times -3 = -3 + 9$  (1)  
           6                                  6

(Total for Question 14 is 2 marks)



P 6 6 3 0 4 A 0 9 2 0

15 The table shows information about the number of social media accounts used by each of 300 students.

Number of social media accounts		Frequency
0	X	3
1	X	57
2	X	84
3	X	75
4	X	81

	CF
0	3
57	60
168	144
225	219
324	300
<u>774</u>	

(a) Work out the total number of social media accounts used by these students.

774  
(2)

(b) Find the median number of social media accounts used by these students.

$\frac{300+1}{2} = 150.5$   
(between 144 & 219  
in 'CF' column)

3  
(2)

(Total for Question 15 is 4 marks)

16 On a scale drawing, a building has length 12.4 cm and width 9.4 cm. The real length of the building is 62 metres.

Work out, in metres, the real width of the building.

$\begin{array}{r} L \\ 12.4 \\ \times 5 \downarrow \\ 62 \end{array}$ 
 $\begin{array}{r} W \\ 9.4 \\ \times 5 \downarrow \\ 47 \end{array}$

$62 \div 12.4 = 5$   
 $9.4 \times 5 = 47$

47 metres

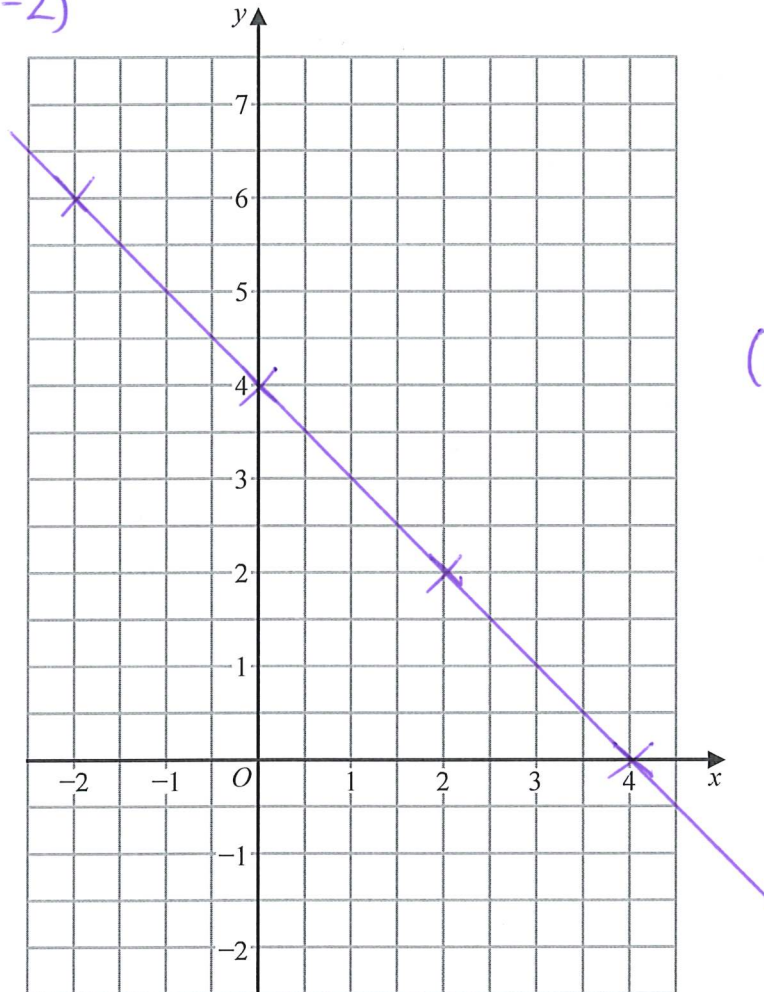
(Total for Question 16 is 3 marks)



17 On the grid below, draw the graph of  $y = 4 - x$  for values of  $x$  from  $-2$  to  $4$

$x$	$-2$	$0$	$2$	$4$
$y$	$6$	$4$	$2$	$0$

$(4 - -2)$  →



(Join with ruler)

(Total for Question 17 is 3 marks)

[A table is one possible way to do this.]



P 6 6 3 0 4 A 0 1 1 2 0

18 This sign was in a doctor's waiting room.

115 appointments were missed last month.  
These missed appointments were a total of 25.3 hours.

Work out the mean length of time for each missed appointment.  
Give your answer in minutes.

$$25.3 \div 115 = 0.22 \text{ hours}$$

↓ × 60

$$13.2 \text{ mins}$$

(~~13~~ 13 min 12 sec) ..... 13.2 ..... minutes

(Total for Question 18 is 3 marks)

DO NOT WRITE IN THIS AREA



19 Nimra buys a 3 kg box of sweets for £17.60

She puts the sweets into bags to sell.  
Each bag contains 150 g of sweets.

Nimra fills as many bags as possible.  
She will sell each bag for the same price.

Nimra wants to make a profit of at least 35%

Assuming she sells all the bags,  
what is the lowest price Nimra should charge for each bag?

$$3000 \div 150 = 20 \text{ bags}$$

$$1.35 \times 17.60 = \pounds 23.76$$

$$23.76 \div 20 = 1.188$$

total income  
needed

per bag  
needed

£ 1.19

(Total for Question 19 is 5 marks)



P 6 6 3 0 4 A 0 1 3 2 0



21 (a) Simplify  $(x^3)^5$

multiply powers

$$x^{15}$$

(1)

(b) Expand and simplify  $4(x + 3) + 7(4 - 2x)$

$$4 \begin{array}{|c|c|} \hline x & +3 \\ \hline 4x & 12 \\ \hline \end{array}$$

$$7 \begin{array}{|c|c|} \hline 4 & -2x \\ \hline 28 & -14x \\ \hline \end{array}$$

$$4x + 12 + 28 - 14x$$

$$-10x + 40$$

$$\text{or } 40 - 10x$$

(2)

(c) Factorise fully  $15x^3 + 3x^2y$

(put into brackets)

$$3x^2 \begin{array}{|c|c|} \hline 5x & y \\ \hline 15x^3 & 3x^2y \\ \hline \end{array}$$

$$3x^2(5x + y)$$

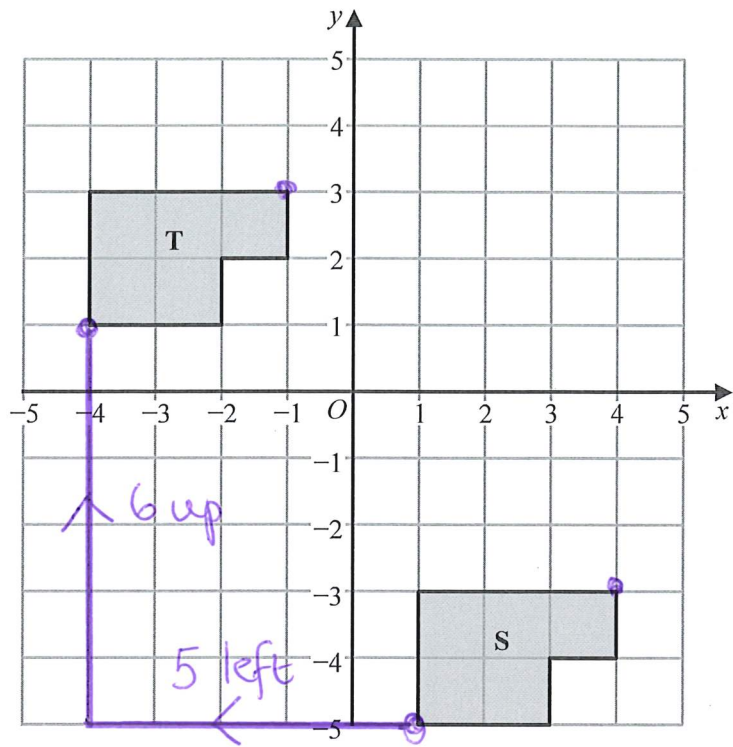
(2)

(Total for Question 21 is 5 marks)



P 6 6 3 0 4 A 0 1 5 2 0

22



Describe fully the single transformation that maps shape S onto shape T.

translation  
by  $\begin{pmatrix} -5 \\ 6 \end{pmatrix}$

(Total for Question 22 is 2 marks)

23 The length of a football pitch is 90 metres, correct to the nearest metre.

Complete the error interval for the length of the football pitch.

$89.5$  m  $\leq$  length  $<$   $90.5$  m

(Total for Question 23 is 2 marks)



DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

24 Festival A will be in a rectangular field with an area of  $80\,000\text{ m}^2$   
The greatest number of people allowed to attend Festival A is 425

Festival B will be in a rectangular field  $700\text{ m}$  by  $2000\text{ m}$ .  
The greatest number of people allowed to attend Festival B is 6750

The area per person allowed for Festival B is greater than the area per person allowed for Festival A.

$\text{area} \div \text{people}$

(a) How much greater?

Give your answer correct to the nearest whole number.

$$A: 80\,000 \div 425 = 188.2352941$$

$$B: \text{area} = 700 \times 2000 = 1\,400\,000$$

$$1\,400\,000 \div 6750 = 207.4074074$$

$$207.4074074 - 188.2352941 \\ = 19.17211331$$

19 m<sup>2</sup>  
(4)

Callum says,

“ $300\text{ cm}^2$  is the same as  $3\text{ m}^2$  because there are  $100\text{ cm}$  in  $1\text{ m}$  so you divide by  $100$ ”

Callum's method is wrong.

(b) Explain why.

eg.  $3\text{ m}^2 = 3 \times 100 \times 100 = 30\,000\text{ cm}^2$   
(not 300)

(1)

(Total for Question 24 is 5 marks)



P 6 6 3 0 4 A 0 1 7 2 0

25 The points  $L$ ,  $M$  and  $N$  are such that  $LMN$  is a straight line.

The coordinates of  $L$  are  $(-3, 1)$

The coordinates of  $M$  are  $(4, 9)$

Given that  $LM : MN = 2 : 3$ ,

find the coordinates of  $N$ .

$$\begin{aligned} \vec{LM} &= 7 \text{ right \& 8 up} \\ &\quad \div 2 \downarrow \qquad \qquad \qquad \downarrow \div 2 \\ &\quad 3.5 \text{ right \& 4 up} \\ &\quad \quad \quad \times 3 \downarrow \qquad \qquad \qquad \downarrow \times 3 \\ \vec{MN} &= 10.5 \text{ right \& 12 up} \\ \\ 4 + 10.5 &= 14.5 \\ 9 + 12 &= 21 \end{aligned}$$

$(14.5, 21)$   
(.....,.....)

(Total for Question 25 is 4 marks)

26 A new phone cost £679

The value of the phone decreases at a rate of 4% per year.

Work out the value of the phone at the end of 3 years.

$$679 \times 0.96^3 = 600.735744$$

↑  
(100% - 4%  
= 96%)

£ 600.74

(Total for Question 26 is 3 marks)



27 In Spain, Sam pays 27 euros for 18 litres of petrol.  
In Wales, Leo pays £40.80 for 8 gallons of the same type of petrol.

1 euro = £0.85  
4.5 litres = 1 gallon

Sam thinks that petrol is cheaper in Spain than in Wales.

Is Sam correct?  
You must show how you get your answer.

Spain,  $\times 4 \downarrow$  4.5L = 1 gallon  $\downarrow \times 4$   
18L = 4 gallons

eg.

$\times 2 \downarrow$  4 gallons = 27 euros  $\downarrow \times 2$   
8 gallons = 54 euros

$$54 \times 0.85 = \pounds 45.90$$

more than £40.80  
for the same amount

He's incorrect.

[You must compare  
like-for-like:  
lots of ways to  
do this]

(Total for Question 27 is 4 marks)



P 6 6 3 0 4 A 0 1 9 2 0

28 Solve the simultaneous equations

$$5x + 2y = 27 \quad \textcircled{1}$$

$$6x + 4y = 28 \quad \textcircled{2}$$

eg.  $10x + 4y = 54$   
 $6x + 4y = 28$

subtract,

$$4x = 26$$
$$x = 6.5$$

sub. into  $\textcircled{1}$

$$5 \times 6.5 + 2y = 27$$

$$32.5 + 2y = 27$$

$$2y = -5.5$$

$$y = -2.75$$

[Check:

$$\textcircled{2} \quad 6 \times 6.5 + 4 \times -2.75 = 28 \checkmark]$$

$$x = 6.5$$

$$y = -2.75$$

(Total for Question 28 is 3 marks)

TOTAL FOR PAPER IS 80 MARKS

