

# "BETWEEN PAPERS"

# PRACTICE

## SET 2 OF 2 - F&H (MOST QUESTIONS)

## SUMMER 2018

# QUESTIONS

**NOT A "BEST" GUESS PAPER.**

**NEITHER IS IT A "PREDICTION" ... ONLY THE EXAMINERS KNOW WHAT IS GOING TO COME UP! FACT!  
YOU ALSO NEED TO REMEMBER THAT JUST BECAUSE A TOPIC CAME UP ON PAPER 1 OR PAPER 2 IT MAY  
STILL COME UP ON PAPER 3 ...**

**WE KNOW HOW IMPORTANT IT IS TO PRACTICE, PRACTICE, PRACTICE .... SO WE'VE COLLATED A LOAD OF  
QUESTIONS THAT WEREN'T EXAMINED IN THE PEARSON/EDExcel 9-1 GCSE MATHS PAPER 1 OR PAPER 2  
BUT WE CANNOT GUARANTEE HOW A TOPIC WILL BE EXAMINED IN THE NEXT PAPERS ...**

**ENJOY!  
MEL & SEAGER**

**Q1.** A cinema sells adult tickets and child tickets.

The total cost of 3 adult tickets and 1 child ticket is £30

The total cost of 1 adult ticket and 3 child tickets is £22

Work out the cost of an adult ticket and the cost of a child ticket.

**(2)**

**Q2.** Freya thinks of a number.

She multiplies the number by 2 and then subtracts 10

The result is 50

What number did Freya think of ?

**(3)**

**Q3.** Jeremy has 10 socks.

6 of the socks are red

2 of the socks are blue

2 of the socks are green

Jeremy takes at random two of the socks.

Work out the probability that he takes two socks of the same colour.

**(4)**

**Q4.** Lionel recorded the number of typing errors on each page of a letter. Here are his results.

2

5

1

1

3

2

(a) Work out the median.

**(2)**

(b) Work out the range.

**(2)**

Lionel also recorded the number of errors on each page of a book.

The table gives information about his results.

Number of errors on each page	Tally	Frequency
0		
1		
2		
3		
4		

(c) Complete the frequency column in the table.

**(1)**

(d) How many pages are there in the book?

**(1)**

(e) Work out the total number of errors in the book.

**(2)**

**Q5.** Here are the first five terms of an arithmetic sequence.

2    6    10    14    18

(a) Write down an expression, in terms of  $n$ , for the  $n$ th term of this sequence.

**(2)**

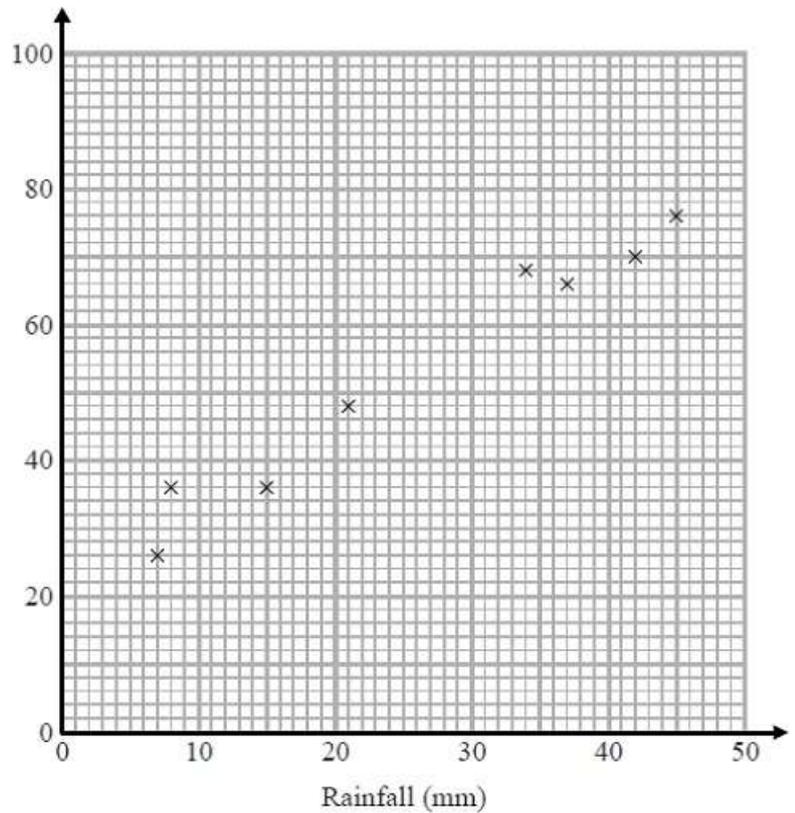
\*(b) Is 86 a term in the sequence?

You must give a reason for your answer.

**(1)**

**Q6.** The scatter graph gives information about the rainfall (mm) and the number of umbrellas sold in a shop for each of eight months last year.

Number of umbrellas sold



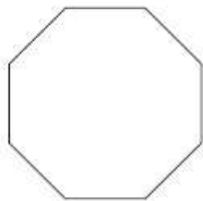
(a) Describe the relationship between the rainfall and the number of umbrellas sold.

**(1)**

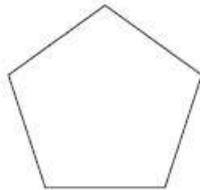
(b) In a different month, the rainfall was 28 mm. Estimate the number of umbrellas sold in the shop that month.

**(2)**

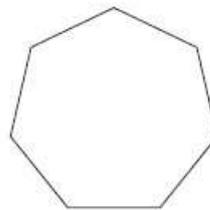
**Q7.** Here are 8 polygons.



A



B



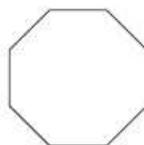
C



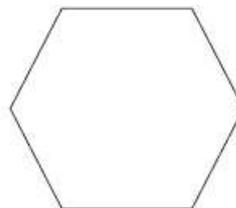
D



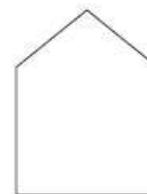
E



F



G



H

(a) Write down the mathematical name for polygon G.

**(1)**

(b) Two of the polygons are congruent. Write down the letters of these polygons.

.....and.....

**(1)**

One of the polygons is similar to polygon F.

(c) Write down the letter of this polygon.

**(1)**

The interior angles of this regular polygon add up to  $540^\circ$ .

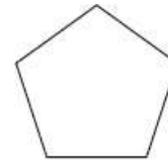
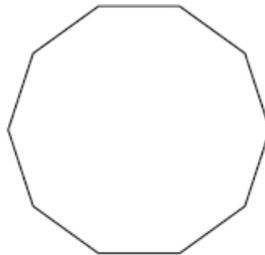


Diagram **NOT**  
accurately drawn

(d) What is the size of one interior angle?

**(2)**

**Q8.** Here is a regular 10-sided polygon.



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

**(1)**

One of the interior angles of this regular polygon is  $144^\circ$

(b) Work out the sum of the interior angles of the polygon.

**(1)**

**Q9.** (a) Work out the reciprocal of 1.25

**(1)**

(b) Work out the value of  $\frac{9.6}{\sqrt{5} - 1.7}$

Give your answer correct to 2 decimal places.

**(2)**

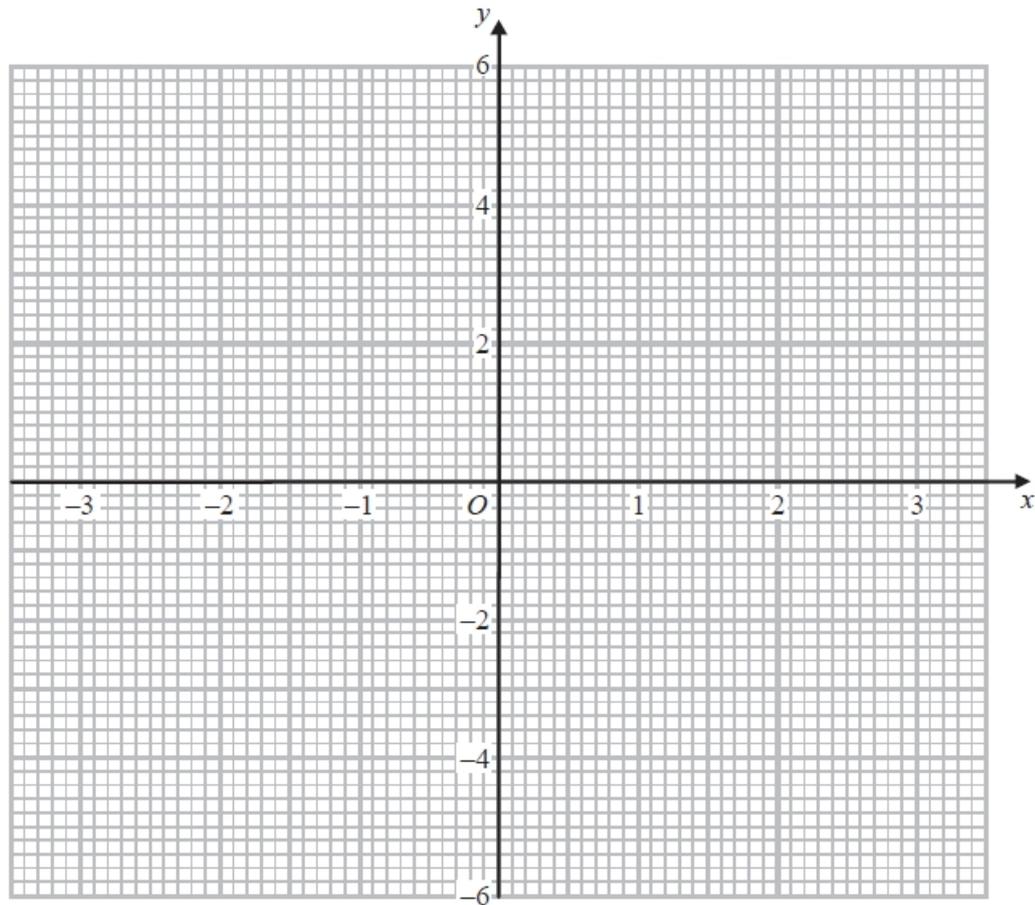
**Q10.** (a) Complete the table of values for  $y = 4 - x^2$

$x$	-3	-2	-1	0	1	2	3
$y$	-5		3			0	

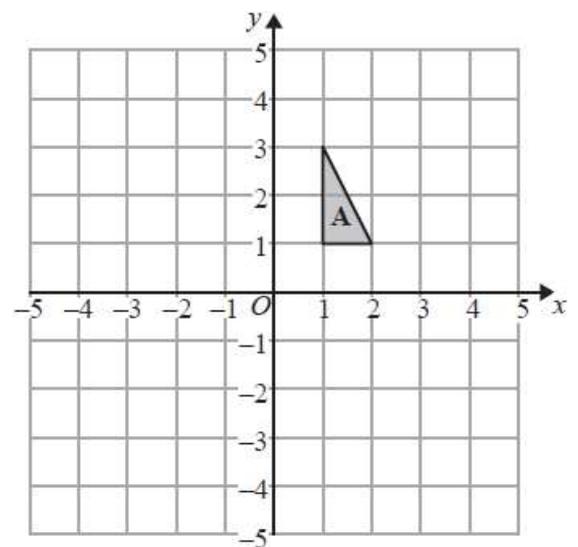
**(2)**

(b) On the grid, draw the graph of  $y = 4 - x^2$  for values of  $x$  from -3 to 3

**(2)**

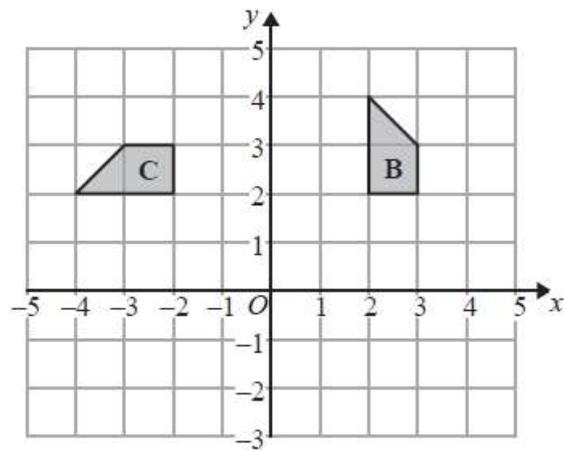


**Q11.**



(a) On the grid above, translate shape **A** by the vector  $\begin{pmatrix} -3 \\ -1 \end{pmatrix}$

**(2)**



(b) Describe fully the single transformation that maps shape **B** onto shape **C**.

**(3)**

**Q12.** There are 8 counters in a box.

The letter A is on 6 of the counters.

The letter B is on the other 2 counters.

Sally takes at random a counter from the box.

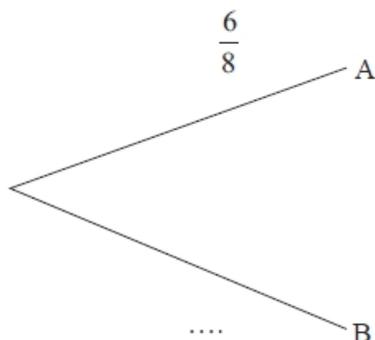
She keeps the counter.

Then Tina takes at random a counter from the box.

(a) Complete the probability tree diagram.

Sally

Tina



**(3)**

(b) Work out the probability that both Sally and Tina take a counter with the letter A on it.

(2)

(c) Work out the probability that at least one counter with the letter A on it is taken.

(3)

**Q13.** 99 children each buy one drink. They each buy cola or juice or water.

45 of these children are girls.

25 boys buy cola.

16 girls buy juice.

17 of the 37 children who buy water are boys.

Work out the number of children who buy cola.

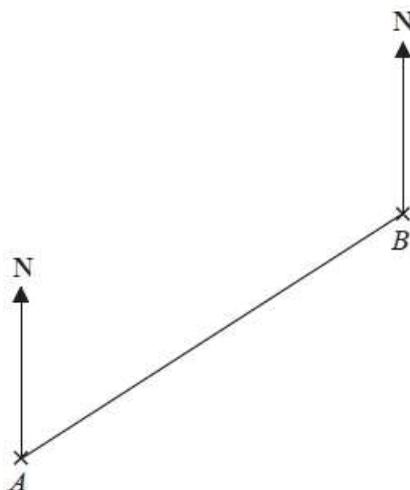
(4)

**Q14.** A number,  $n$ , is rounded to 2 decimal places. The result is 4.76

Using inequalities, write down the error interval for  $n$ .

(2)

**Q15.** The scale diagram shows the positions of two airports,  $A$  and  $B$ .



Scale: 1 cm represents 10 km

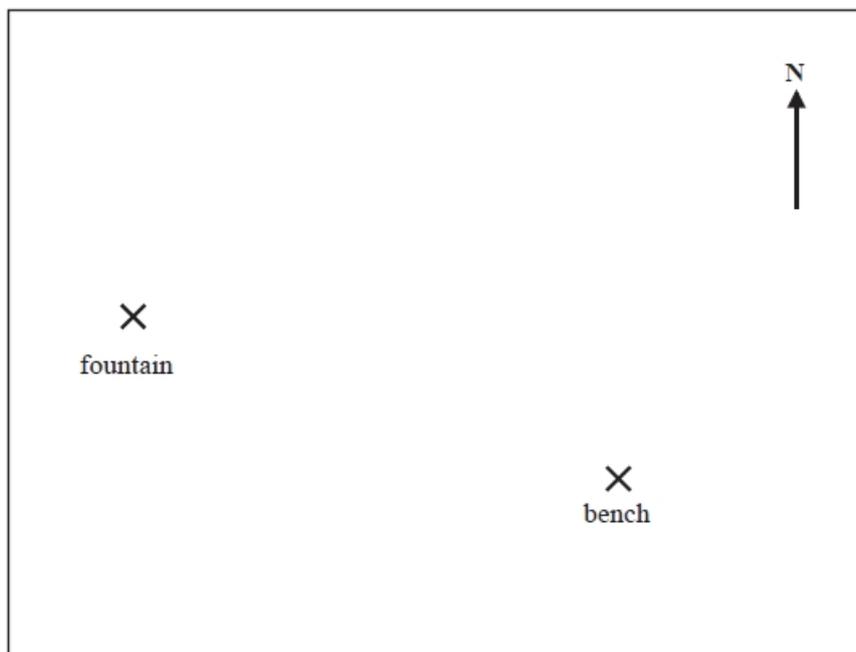
(a) Measure and write down the bearing of airport  $B$  from airport  $A$ .

**(1)**

(b) What is the real distance from airport  $A$  to airport  $B$ ?

**(2)**

**Q16.** The diagram shows a scale drawing of a garden.



Scale: 1 centimetre represents 2 metres

(a) Work out the real distance from the fountain to the bench.

**(1)**

(b) Measure the bearing of the bench from the fountain.

**(2)**

Haavi is going to plant a tree in the garden.

The tree must be

less than 7 metres from the fountain,  
less than 12 metres from the bench.

(c) On the diagram show, by shading, the region in which Haavi can plant the tree.

**(3)**

**Q17.**  $ABCD$  and  $PQRS$  are two rectangles.

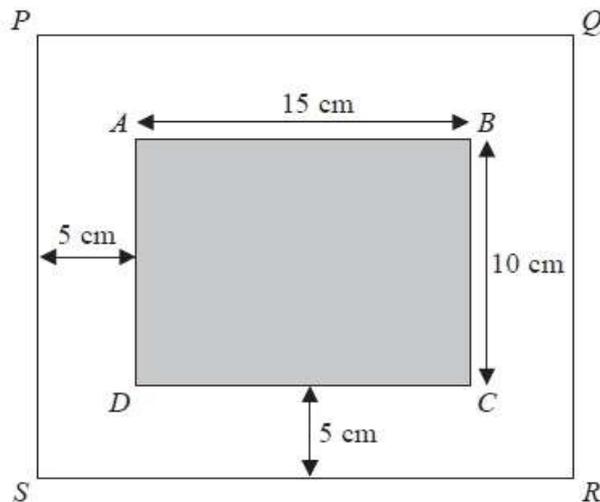


Diagram **NOT**  
accurately drawn

Rectangle  $ABCD$  is 15 cm by 10 cm.

There is a space 5 cm wide between rectangle  $ABCD$  and rectangle  $PQRS$ .

Are rectangle  $ABCD$  and rectangle  $PQRS$  mathematically similar?

You must show how you got your answer.

**(3)**

**Q18.** Ali is  $y$  years old.

Bhavara is twice as old as Ali.

Ceris is 3 years younger than Ali.

The total of their ages is 125 years.

Work out the age of each person.

**(4)**