"Between Papers" Practice

Set 1 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 ...
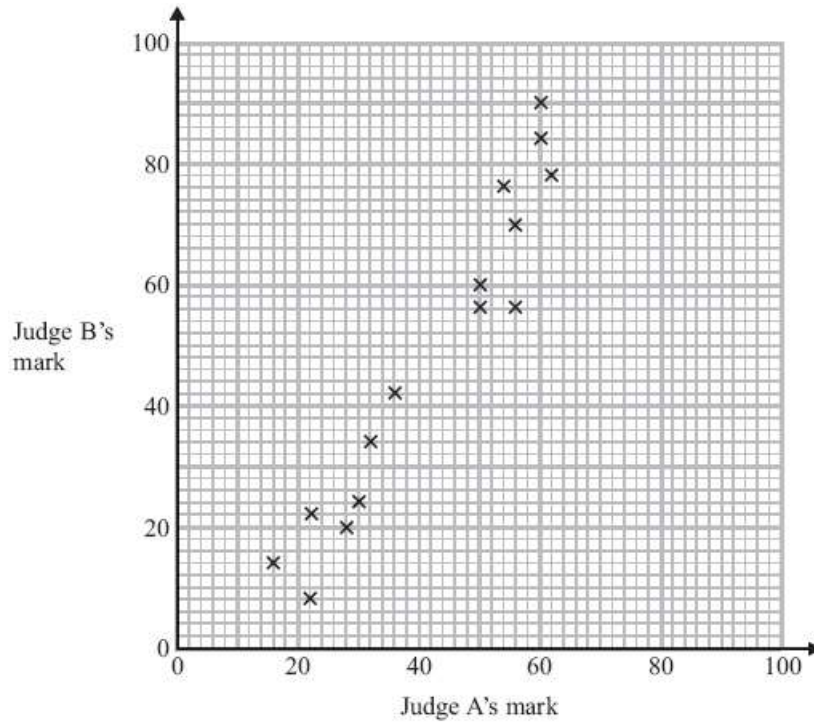
Enjoy!
Mel & Seager

Q1. Use your calculator to work out $\dfrac{\sqrt{40.96}}{7.1 - 2.48}$

Write down all the figures on your calculator display.
You must give your answer as a decimal.

(2)

Q2. Some children took part in a piano competition. Each child was given a mark from Judge A and from Judge B.

The scatter graph below shows some of this information.

(a) Describe the correlation.

(1)

Judge A gives 44 marks to another child.

(b) Use the scatter graph to estimate Judge B's mark for this child.

(2)

Q3. Seven people entered a singing competition. Here are the number of points that each of the first six people scored.

10   8   5   13   18   15

(a) Work out the range for these six people.

(2)

(b) Work out the median for these six people.

(2)

The mean for the **seven** people was 12

(c) Work out how many points the seventh person scored.

(2)

Q4. Faisel weighed 50 pumpkins.

The grouped frequency table gives some information about the weights of the pumpkins.

Weight (w kilograms)	Frequency
$0 < w \leq 4$	11
$4 < w \leq 8$	23
$8 < w \leq 12$	14
$12 < w \leq 16$	2

Work out an estimate for the mean weight.

(4)

Q5. *DEF* is a right-angled triangle.

DE = 86 mm

EF = 37 mm

Calculate the size of the angle marked *y*.

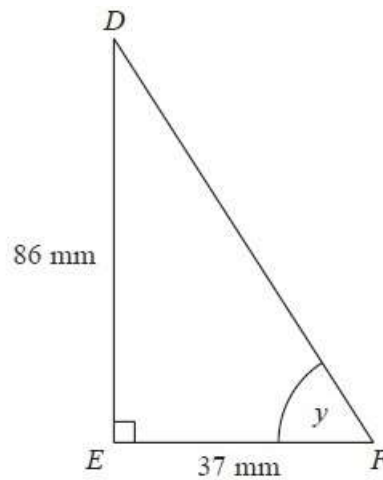Give your answer correct to 1 decimal place.

Diagram **NOT** accurately drawn

86 mm

E   37 mm   *F*

y

(3)

Q6. Calculate the value of $\sqrt{\dfrac{\tan 60° + 1}{\tan 60° - 1}}$

Write down all the figures on your calculator display. You must give your answer as a decimal.

(2)

Q7. Zoe recorded the heart rates, in beats per minute, of each of 15 people. Zoe then asked the 15 people to walk up some stairs. She recorded their heart rates again.

She showed her results in a back-to-back stem and leaf diagram.

```
            Before                After
                    9  8 | 5 |
      7  6  6  4  1  0 | 6 | 5  8  8  9
         9  8  6  3  2 | 7 | 2  4  7  8
                  4  1 | 8 | 5  6  8
                      9 | 9 | 1  3  7
                        |10 | 2
```

Key for before
8|5 means 58
beats per minute

Key for after
6|5 means 65
beats per minute

Compare the heart rates of the people before they walked up the stairs with their heart rates after they walked up the stairs.

(6)

Q8. The frequency table gives information about the times it took some office workers to get to the office one day.

Time (*t* minutes)	Frequency
0 < *t* ≤10	4
10 < *t* ≤20	8
20 < *t* ≤30	14
30 < *t* ≤40	16
40 < *t* ≤50	6
50 < *t* ≤60	2

(a) Draw a frequency polygon for this information.
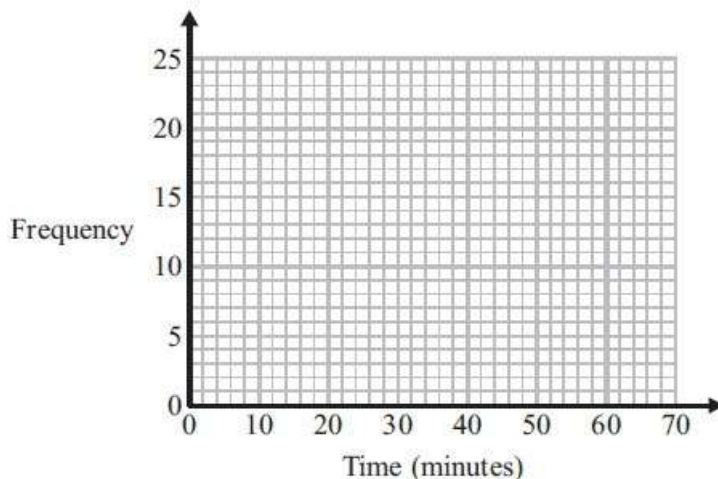
(2)

(b) Write down the modal class interval.

(1)

One of the office workers is chosen at random.

(c) Work out the probability that this office worker took more than 40 minutes to get to the office.

(2)

Q9. Ella wants to invest £6000 in a savings account for 2 years.

She finds information about savings accounts at two different banks.

Northway Bank	**Portland Bank**
Compound interest	Compound interest
of	of
3.8% per annum	5% per annum in year 1
	3.2% per annum in year 2

Ella wants to choose the bank that pays the greater total amount of interest for the 2 years.

Which bank should she choose? You must show all your working.

(4)

Q10. A ball fell 2 metres onto horizontal ground. The ball hit the ground and bounced up and down 3 times.

The first time the ball bounced, it rose to 75% of the height it fell from.

The second time the ball bounced, it rose to 75% of the height it reached after the first bounce. The third time the ball bounced, it rose to 75% of the height it reached after the second bounce.

Work out the height the ball reached after the third bounce.
Give your answer correct to 2 decimal places.

(3)

Q11. Tony is paid for the number of miles he drives. The graph gives information about the amount Tony is paid for the number of miles he drives.
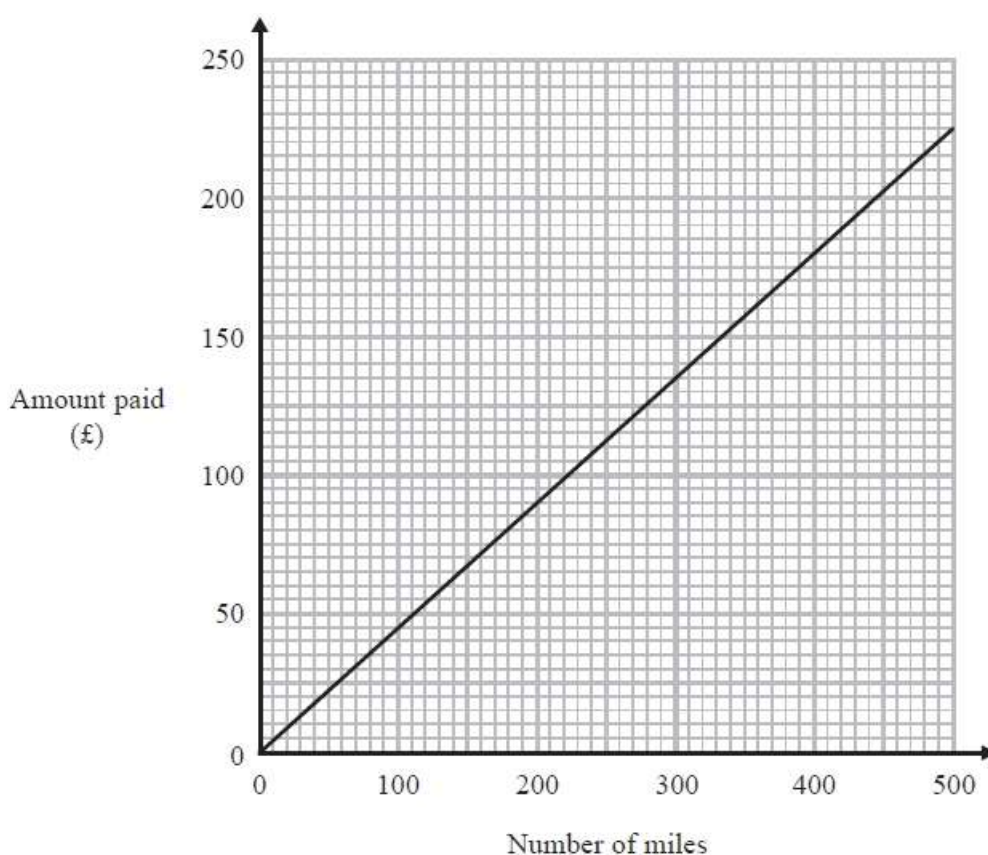
Tony drives 700 miles.

(a) Work out the amount Tony is paid.

(2)

(b) Work out the amount Tony is paid for each mile he drives.

(2)

Q12. (a) Calculate the value of $\dfrac{\sqrt{100 - 4.5^3}}{0.73}$

Give your answer correct to 3 decimal places.

(2)

(b) Calculate the value of $\dfrac{1.2 \times 10^3}{3 \times 10^5}$

Give your answer in standard form.

(2)
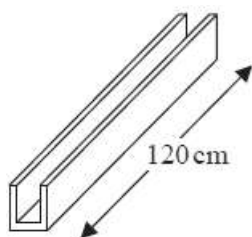
Q13. The diagram shows a metal bar in the shape of a prism.

Diagram **NOT** accurately drawn

120 cm

The length of the metal bar is 120 cm.
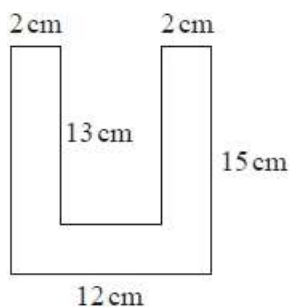The cross section of the metal bar is shown below.

2 cm   2 cm

Diagram **NOT** accurately drawn

13 cm

15 cm

12 cm

All corners are right angles.

The metal bar is made from steel with density 8 g/cm^3.

Sean has a trolley.
The trolley can carry a maximum mass of 250kg.

How many metal bars can the trolley carry at the same time?
You must show your working.
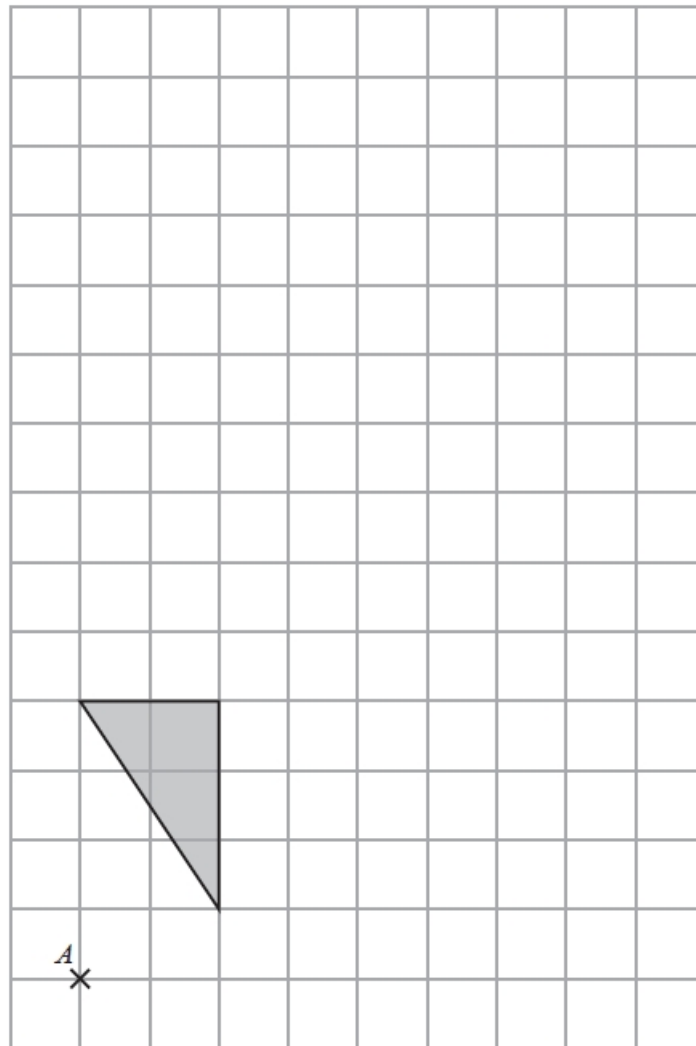
(5)

Q14. (a) Solve $2x^2 = 72$

(2)

(b) Expand and simplify $(2x + 1)(3x - 2)$

(2)

(c) Factorise $x^2 + 6x + 9$

(1)

Q15. A shaded shape is shown on the grid.

On the grid, enlarge the shape by a scale factor of 2, centre *A*.

(Total for question = 2 marks)

Q16. Ketchup is sold in three different sizes of bottle.

Small bottle   Medium bottle   Large bottle

A small bottle contains 342 g of ketchup and costs 88p
A medium bottle contains 570 g of ketchup and costs £1.95
A large bottle contains 1500 g of ketchup and costs £3.99

Which bottle is the best value for money? You must show your working.

(4)

Q17. Dan has some marbles.

Ellie has twice as many marbles as Dan.
Frank has 15 marbles.

Dan, Ellie and Frank have a total of 63 marbles.

How many marbles does Dan have?

(3)

Q18. Here is a list of numbers.

| 4 | 8 | 5 | 9 | 10 | 5 | 6 | 3 | 4 |

(a) Work out the median.

(2)

(b) Work out the mean.

(2)

END OF QUESTIONS