BUMPER

"BETWEEN PAPERS 2 and 3" PRACTICE PAPER (Q1 to Q27)

Foundation Tier (Summer 2017)

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 practise, practise, practise .... so we've collated a load of questions that weren't examined in the Pearson/edexcel NEW 9-1 GCSE Maths paper 1 and paper 2 but we cannot guarantee how a topic will be examined in the final paper
Enjoy!

Mel & Seager

NB: Some of these questions may have also been included in the papers used between papers 1 and 2 ... the practise is good for you!

	Marks	Actual	😠 😐 😊
Q1. Fractions	4		
Q2. Percentages	2		
Q3. Percentages	2		
Q4. Combinations / Probability	4		
Q5. Volume of a prism	6		
Q6 Area	4		
Q7. Proportion	3		
Q8. Recipes	3		
Q9. Fractions/ratio	1		
Q10 Fractions	2		
Q11. Multiples problem	4		
Q12. Multiples in context	3		
Q13. Multiples in context	5		
Q14. Indices	4		
Q15. Solving equations	5		
Q16. Inequalities	5		
Q17. Inequalities	4		
Q18. Coordinates	3		
Q19. Coordinates	3		
Q20. Bearings	7		
Q21. Money and line graphs	6		
Q22. Stem and leaf / Venn diagrams	6		
Q23. Line graphs	5		
Q24. Stem & leaf/ comparing	5		
Q25. Modal class/frequency polygons	3		
Q26. Simultaneous equations	3		
Q27. Simultaneous equations	4		

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Q1. (a) Work out $\frac{2}{7} + \frac{1}{5}$

(2)

(b) Work out $1\frac{2}{3} \div \frac{3}{4}$

(2)
(Total for question = 4 marks)

Q2. Work out 15% of 80

(Total for question = 2 marks)

Q3. Work out 70% of £90

(Total for question is 2 marks)

Q4. In a box there are three types of chocolates.

There are   6 plain chocolates,
                  8 milk chocolates
         and 10 white chocolates.

Ben takes at random a chocolate from the box.

(a) Write down the probability that Ben takes a plain chocolate.
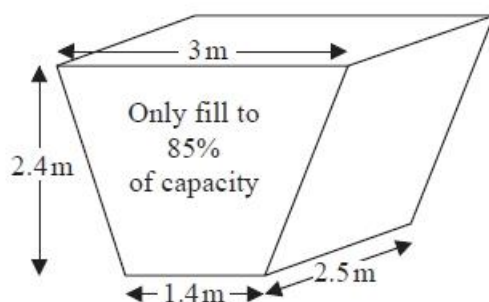
(2)

Deon takes 2 chocolates from the box.

(b) Write down all the possible combinations of types of chocolates that Deon can take.

(2)
(Total for question = 4 marks)

Q5. The diagram shows an oil tank in the shape of a prism.
The cross section of the prism is a trapezium.

The tank is empty.

Oil flows into the tank.
After one minute there are 300 litres of oil in the tank.

Assume that oil continues to flow into the tank at this rate.

(a) Work out how many **more** minutes it takes for the tank to be 85% full of oil.
(1 m^3 = 1000 litres)
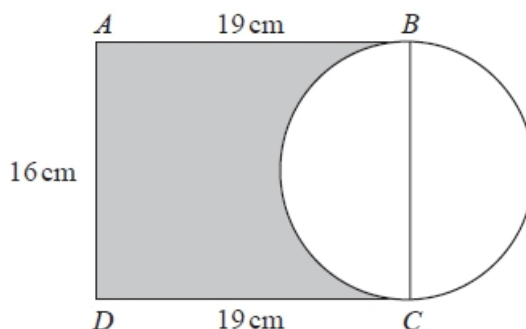
.... minutes **(5)**

The assumption about the rate of flow of the oil could be wrong.

(b) Explain how this could affect your answer to part (a).

(1)
(Total for question = 6 marks)

Q6. Here is a diagram showing a rectangle, *ABCD*, and a circle.

BC is a diameter of the circle.

Calculate the percentage of the area of the rectangle that is shaded.
Give your answer correct to 1 decimal place.

....%

(Total for question is 4 marks)

Q7. Here are the instructions for making a drink.

> Add 100 m*l* of juice
> to 2 litres of water

Dev uses 5 litres of water to make the drink.

How much drink has he made?

(Total for question = 3 marks)

Q8. Jane made some almond biscuits which she sold at a fete.

She had:

5 kg of flour
3 kg of butter
2.5 kg of icing sugar
320 g of almonds

Here is the list of ingredients for making 24 almond biscuits.

> Ingredients for 24 almond biscuits
>
> 150 g flour
> 100 g butter
> 75 g icing sugar
> 10 g almonds

Jane made as many almond biscuits as she could, using the ingredients she had.

Work out how many almond biscuits she made.
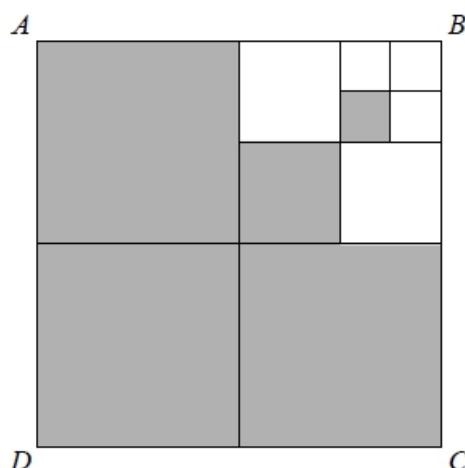
(Total for question = 3 marks)

Q9. There are only black pens and green pens in a box.

The ratio of the number of black pens in the box to the number of green pens in the box is 2 : 5

What fraction of the pens are black?

(Total for question = 1 mark)

Q10. *ABCD* is a square. This diagram is drawn accurately.

What fraction of the square *ABCD* is shaded?

(Total for question = 2 marks)

Q11. Write down three different multiples of 4 that add up to 40

(Total for question = 2 marks)

Q12. Miss Paisley is organising games for the children in her class. She is going to put the children into teams.

If she puts the children into teams of 4, there will be 2 children left out.
If she puts the children into teams of 5, there will be 3 children left out.

Work out the smallest possible number of children in Miss Paisley's class.

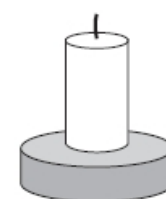**(Total for question = 3 marks)**

Q13. Caroline is making some table decorations. Each decoration is made from a candle and a holder.

Caroline buys some candles and some holders each in packs.

There are 30 candles in a pack of candles.
There are 18 holders in a pack of holders.

Caroline buys exactly the same number of candles and holders.

candle and holder

(i) How many packs of candles and how many packs of holders does Caroline buy?

.... packs of candles

.... packs of holders

Caroline uses all her candles and all her holders.

(ii) How many table decorations does Caroline make?

.... table decorations

(Total for question = 5 marks)

Q14.(a) Work out the value of 3.1^4

.... **(1)**

(b) Simplify $(p^3)^2$

.... **(1)**

(c) Simplify t^8/t^3

.... **(1)**

$2^3 \times 2^n = 2^9$

(d) Work out the value of n.

....**(1)**

(Total for Question is 4 marks)

Q15. (a) Solve $\quad 4c + 5 = 11$

$c = $ .... **(2)**

(b) Solve $\quad 5(e + 7) = 20$

$e = $ .... **(2)**

(c) Simplify $(m^3)^2$

.... **(1)**

(Total for question is 5 marks)

Q16. $-2 < n \leq 3$

n is an integer.

(a) Write down all the possible values of n.

(2)

$3x + 5 > 16$

x is an integer.

(b) Find the smallest value of x.

(3)

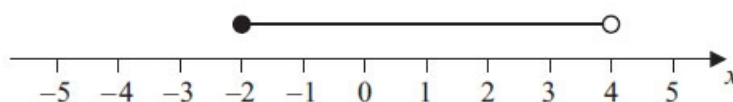**(Total for Question is 5 marks)**

Q17. $-4 < n \leq 1$

n is an integer.

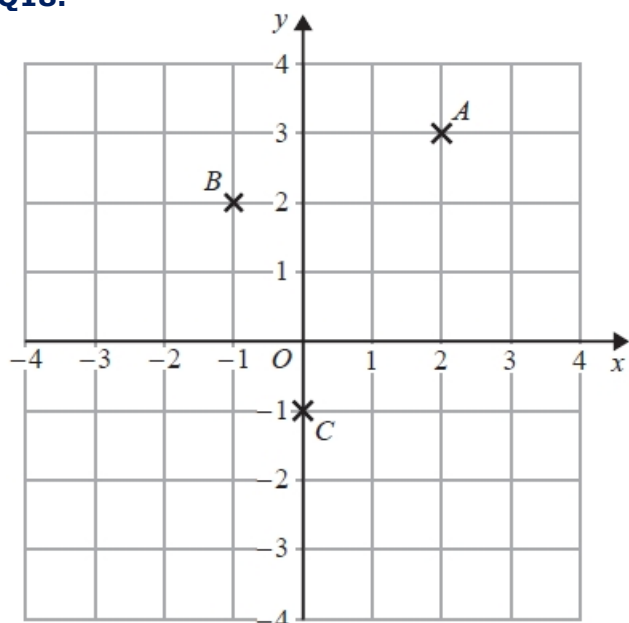(a) Write down all the possible values of n.

(2)

(b) Write down the inequalities represented on the number line.

(2)

Total for Question is 4 marks)

Q18.

(a) Write down the coordinates of point C.

(........................ , ...) **(1)**

ABCD is a square.

(b) On the grid, mark with a cross (X) the point *D* so that *ABCD* is a square.

(1)

(c) Write down the coordinates of the midpoint of the line segment *BC*.

(........................ , ...) **(1)**

(Total for question is 3 marks)

Q19.
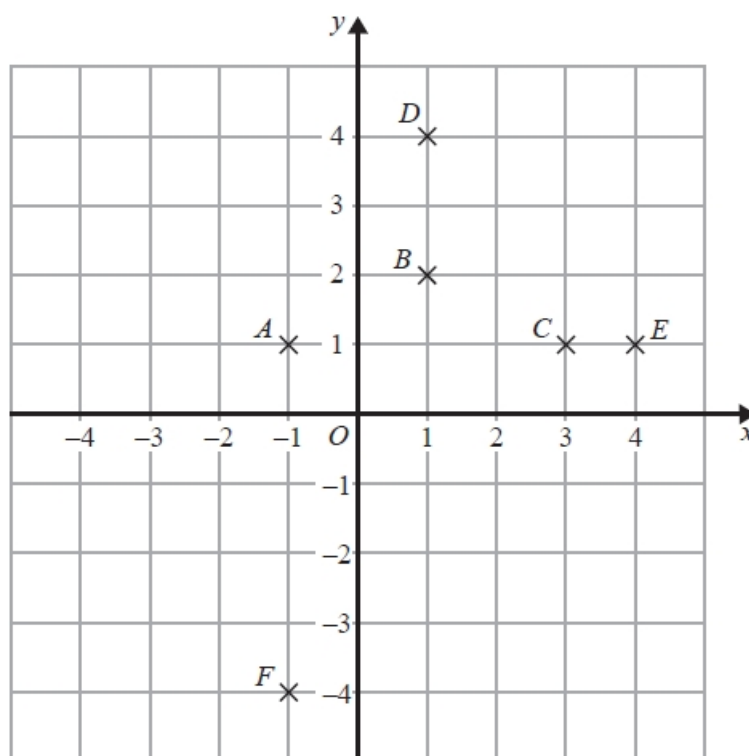
The points *A*, *B*, *C*, *D*, *E* and *F* are shown on the grid.

One of these points has coordinates (4, 1).

(a) Which point?

.... **(1)**

(b) (i) On the grid, mark with a cross (×) a point *P* such that the shape *ABCP* is a kite. Label your point *P*.

(ii) Write down the coordinates of your point *P*.

(............................ , ...) **(2)**

(Total for question = 3 marks)

Q20. Here is part of a map showing the position of a port **A**.

N
↑

A ×

B is a lighthouse 36 km from **A** on a bearing of 050°

(a) (i) Construct a diagram to show the position of **B**.
Use a scale of 1cm represents 4 km.

(ii) Write down the bearing of **A** from **B**.

(3)

From the lighthouse at **B**, ships can be seen when they are within a range of 23 km of **B**.
A ship sails due East from **A**.

(b) Show, **by calculation**, that on this course this ship will not be seen from the lighthouse at **B**.

You must not use a scale drawing.

(4)
(Total for question = 7 marks)

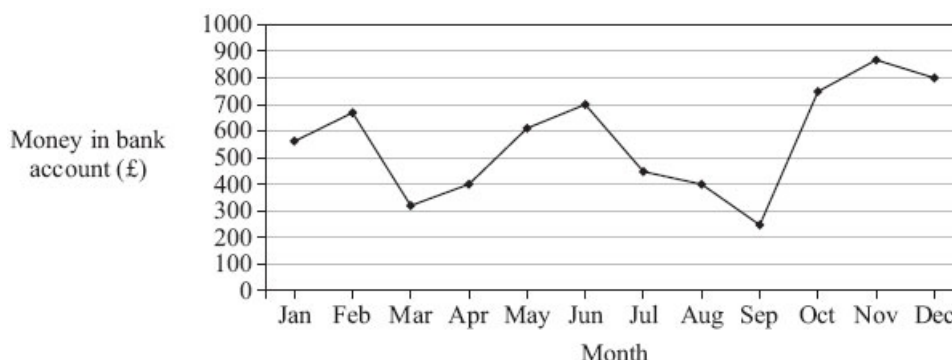**Q21.** On Monday morning, Shruti has £135.70 in her bank account.

On Monday, Shruti
puts £85 into her bank account
spends £45.56 from her bank account

(a) How much money is in Shruti's bank account at the end of Monday?

(3)

Shruti wants to find out how much money was in her bank account at the beginning of each month for the last twelve months.

This graph shows this information.

(b) How much money was in Shruti's bank account at the beginning of June?

(1)

(c) At the beginning of which month was there the most money in Shruti's bank account?

(1)

(d) At the beginning of which **two** months was there the same amount of money in Shruti's bank account?

(1)

(Total for Question is 6 marks)

Q22. Some students watched a film. James recorded the heart rates, in beats per minute, of the students after they had watched the film.

The back-to-back stem and leaf diagram gives information about his results.

Female		Male
8 5	7	6 7 9
7 5 4 3 0	8	3 5 7 8
9 8 6 1	9	2 3 5 7 8
	10	1 3 7

Key
5|7 represents 75 beats per minute for female students   7|6 represents 76 beats per minute for male students

(a) Compare the distribution of the heart rates of the female students and the distribution of the heart rates of the male students.
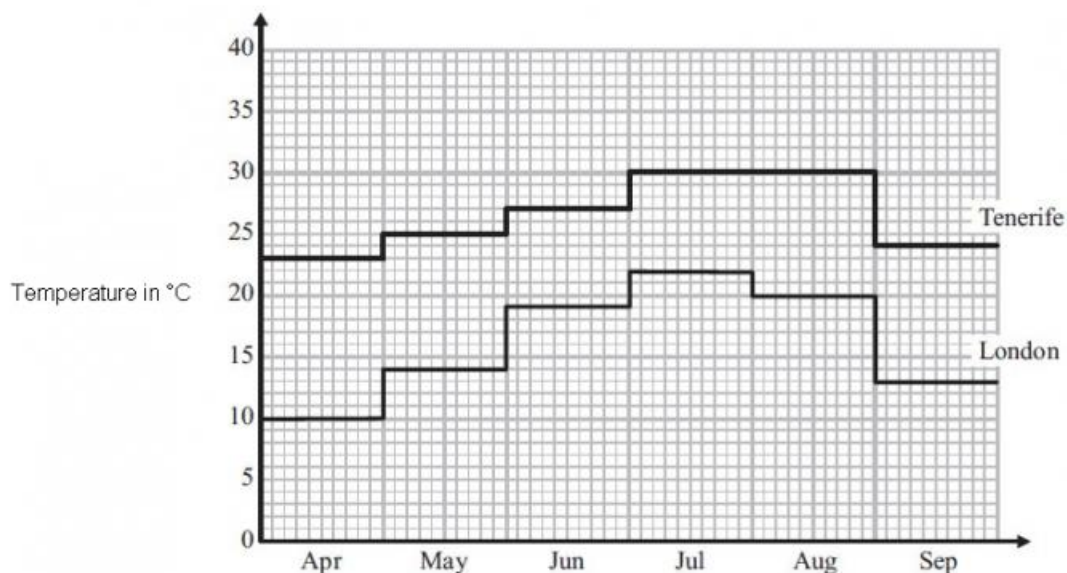
(3)

13 of the 26 students like comedy films.
16 of the 26 students like science fiction films.
5 of the 26 students like both comedy and science fiction films.

(b) Draw a Venn diagram to show this information.

(3)
(Total for question = 6 marks)

Q23. The diagram shows the average midday temperature in Tenerife and in London during 6 months.

(a) During which two months is the average midday temperature in Tenerife the same?

(1)

(b) During which month is there the greatest difference between the average midday temperatures in London and in Tenerife?

(1)

(c) Write down the average midday temperature in May for London.

°C **(1)**

(d) In September, what is the difference between the average midday temperatures in London and in Tenerife?

°C **(2)**

(Total for Question is 5 marks)

Q24. Zoe recorded the heart rate of each of 15 people. She showed her results in a stem and leaf diagram.

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

Key:

5|8 means 58 beats per minute

(a) Find the median heart rate.

. . . . beats per minute **(1)**

(b) Work out the range of the heart rates.

. . . . beats per minute **(2)**

Zoe then asked the 15 people to walk up some stairs.
Zoe recorded the heart rates again.

She used the results to work out the median and the range.

Median	78
Range	37

(c) Compare the heart rates of the people before they walked up the stairs with their heart rates after they walked up the stairs.
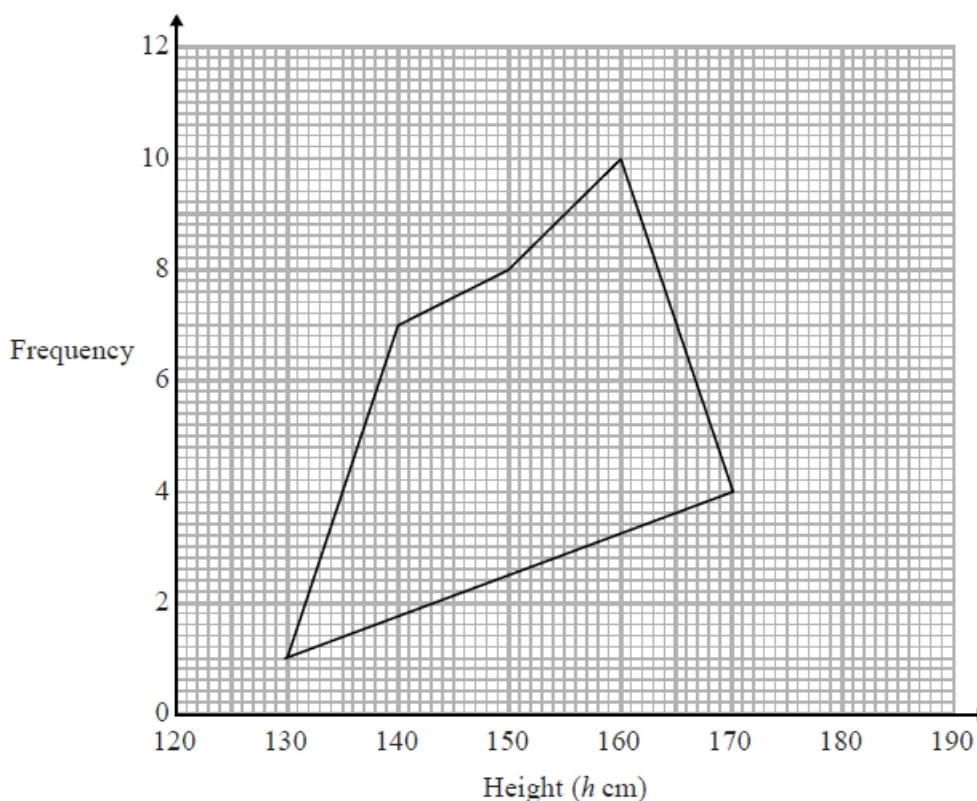
(2)

(Total for Question is 5 marks)

Q25. The grouped frequency table gives information about the heights of 30 students.

Height (h cm)	Frequency
$130 < h \leqslant 140$	1
$140 < h \leqslant 150$	7
$150 < h \leqslant 160$	8
$160 < h \leqslant 170$	10
$170 < h \leqslant 180$	4

(a) Write down the modal class interval.

.... **(1)**

This incorrect frequency polygon has been drawn for the information in the table.

(b) Write down two things wrong with this incorrect frequency polygon.

1

....

2

....

(2)
(Total for question is 3 marks)

Q26. Solve the simultaneous equations

$$4x + y = 25$$
$$x - 3y = 16$$

x = ... , y = ...

(Total for question is 3 marks)

Q27. 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.

adult ticket   £...

child ticket £...

(Total for question = 4 marks)