



Year 10 Summer Work

Topic	Completed
Place Value and rounding	
Averages	
Names of shapes	
Types of numbers	
Basic algebra	
Indices	
Probability	
FDP	
Money problems	
Plotting linear graphs	
Recipes	

Foundation

Q1. Here are four cards.



- (a) Write down the value of the digit 5 in the number 5348

Answer

(1)

- (b) Write the number 5348 to the nearest hundred.

Answer

(1)

- (c) What is the largest number you can make using all four cards?

Answer

(1)

- (d) What is the smallest **odd** number you can make using all four cards?

Answer

(1)

(Total 4 marks)

Q2.

Here are seven numbers.

13 6 12 7 6 4 8

- (a) Work out the range of the seven numbers.

Circle your answer.

5 6 7 8 9

(1)

- (b) What is the mode of the seven numbers?

Circle your answer.

5 6 7 8 9

(1)

(Total 2 marks)

Q3. Here are five numbers.

5 9 10 7 9

- (a) What is the mode?

.....

Answer

(1)

- (b) Show clearly that the median is 9.

.....

.....

(1)

(Total 2 marks)

Q4. Here is some information about temperatures in Italy in January.

	Minimum temperature (°C)	Maximum temperature (°C)
Northern Italy	-4	5
Central Italy	5	13
Southern Italy	10	16

(a) Which part of Italy is coldest in January?

Answer

(1)

(b) Which part of Italy has the smallest range in temperature in January?
You **must** show your working.

.....
.....

Answer

(2)

(c) The temperatures in a town in Italy on five days in January are

10 °C 5 °C 11 °C 7 °C 12 °C

Work out the mean temperature.

.....

Answer °C

(2)

(d) Which part of Italy do you think the town in part (c) is in?
Give a reason for your answer.

Answer

Reason

(1)

(Total 6 marks)

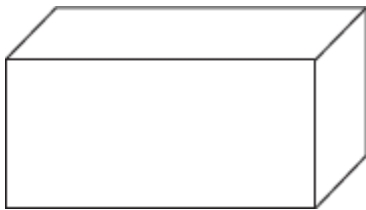
Q5.(a) Write down the mathematical name of this shape.



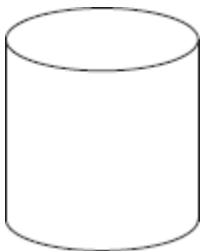
.....

(1)

(b) Write down the mathematical names of these solid shapes.



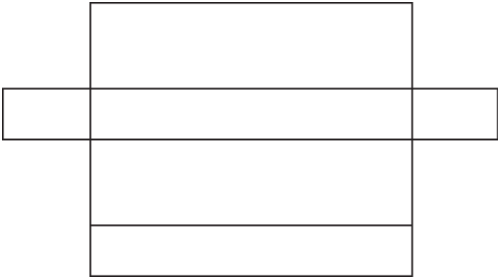
.....



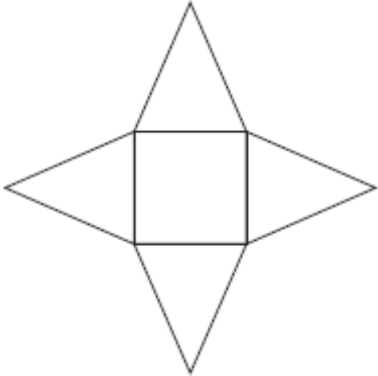
.....

(2)
(Total 3 marks)

Q6. Write down the mathematical name of the shape made by each net.



.....



.....



.....

(Total 3 marks)

Q7.(a) Write down the **three** multiples of 30 between 100 and 200

.....
.....
.....

Answer , ,

(2)

(b) Circle the number in the list that is **not** a factor of 30

2 3 5 6 8

(1)

(Total 3 marks)

Q8. Write 56 as a product of prime factors.

Answer

(Total 2 marks)

Q9.(a) Simplify fully $3a + 4b + a - 2b$

.....

Answer

(2)

(b) Solve $4x - 7 = 11$

.....

.....

$x =$

(2)

(Total 4 marks)

Q10.(a) Multiply out $3(2x - 7)$

.....

.....

Answer

(1)

(b) Factorise $x^2 + 8x$

.....

.....

Answer

(1)

(Total 2 marks)

Q11.(a) Work out $5^2 \times 2^3$

.....
.....

Answer

(2)

(b) Write down the value of $\sqrt{144}$

Answer

(1)

(c) Write down the cube root of 64.

Answer

(1)

(Total 4 marks)

Q12.

Write as a single power of 9

$$\frac{9^5 \times 9^7}{9^4}$$

Answer

(Total 2 marks)

Q13. A spinner has four sections A, B, C and D.
The table shows the probabilities of the spinner landing on A, B or C.

Outcome	A	B	C	D
Probability	0.2	0.3	0.15	

Work out the probability of landing on D.

.....

Answer

(Total 2 marks)

Q14. John goes to work by car or by train.

(a) The probability that John goes by car is 0.4

Work out the probability he goes by train.

.....

Answer

(1)

(b) John works for 200 days each year.

How many days would you expect him to go to work by car?

.....

Answer

(2)

(c) Ben also goes to work by car or by train.
Out of 200 days, he went by car on 150 days.

Work out the relative frequency that Ben goes to work by car.

.....

Answer

(1)

(Total 4 marks)

Q15.(a) Complete the table.

Fraction	Decimal	Percentage
$\frac{3}{4}$		75%
$\frac{9}{10}$	0.9	
	0.3	30%

(3)

(b) Write $\frac{3}{4}$, 0.9 and 30% in order with the smallest first.

.....

Answer,,

(1)

(Total 4 marks)

Q16.(a) Write 80% as a decimal.

Answer

(1)

(b) Write 0.7 as a fraction.

Answer

(1)

(c) Write $\frac{3}{4}$ as a decimal.

Answer

(1)

(d) Write 80%, 0.7 and $\frac{3}{4}$ in order with the smallest first.

.....

.....

Answer,,

(1)

(Total 4 marks)

Q17. Bottles of milk cost 65p each.

(a) Work out the cost of four bottles.

.....
.....

(2)

(b) Molly pays for the 4 bottles of milk with a £5 note.

How much change should she get?

.....
.....

Answer £

(1)

(Total 3 marks)

Q18. This is a bill for coffee and buns.
The bill has coffee spilt on it.

Coffee	2 × £1.30	£2.60
Buns	× 80p	
	Total	£5.00

How many buns were bought?
You **must** show your working.

.....
.....
.....

Answer

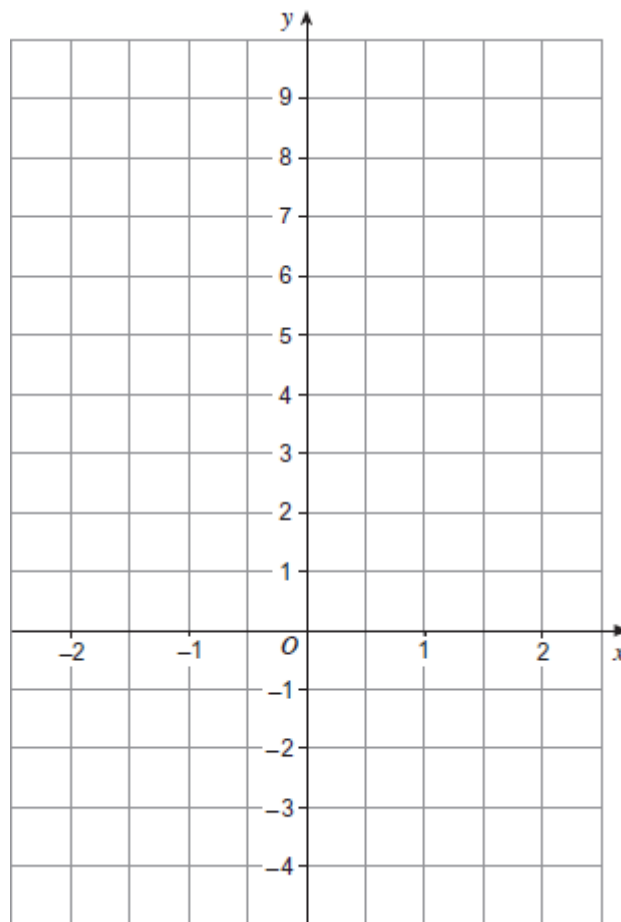
(Total 3 marks)

Q19.(a) Complete the table of values for $y = 3x + 2$

x	-2	-1	0	1	2
y		-1		5	

(2)

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



(2)

(c) Work out the gradient of the line $y = 3x + 2$

Answer

(1)
(Total 5 marks)

Q20. Here is a list of ingredients for bread and butter pudding.

- Serves 2 people**
- 1 egg
 - 3 slices of bread
 - $\frac{1}{2}$ pint of milk
 - 75 g raisins
 - 5 g butter

Complete this list to serve four people.

- Serves 4 people**
- eggs
 - slices of bread
 - pint of milk
 -g raisins
 -g butter

(Total 3 marks)

Q21. This table shows the ingredients needed to make six flapjacks.

Butter	75 grams
Sugar	60 grams
Oats	175 grams
Syrup	1 tablespoon

Complete the table to show the ingredients needed to make 24 flapjacks.

Butter grams
Sugar grams
Oats grams
Syrup tablespoons

.....

.....

.....

.....

.....

(Total 4 marks)