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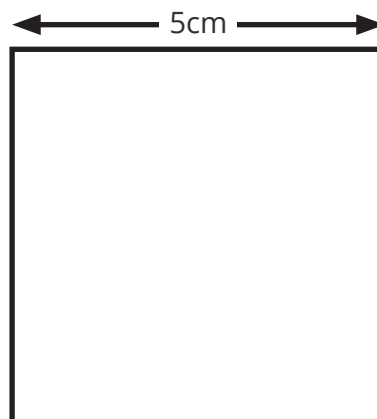
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Foxit Reader

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Year 11 Baseline Test

GCSE Foundation Maths Paper 1 (Non-Calculator)

Time allowed: 1 hour 30 minutes (80 Marks)

Name _____

Date _____



1. a. How many lines of symmetry does a square have?

[1]

- b. State the order of rotational symmetry of a rectangle.

[1]

2. a. Convert 3.6m into cm.

[1]

_____cm

- b. Convert one and three quarter hours into minutes.

[1]

_____minutes

3. When $x = 4$, $y = 1$ and $z = -2$, evaluate:

a. $x + y$

[1]

b. $2y + 4x$

[2]

c. $y - z$

[1]

4. Write the correct sign, $<$, $>$ or $=$, between each pair of numbers:

[4]

a. 0.8 0.721

b. -5 1

c. $\frac{2}{5}$ $\frac{1}{3}$

d. 0.3 $\frac{3}{10}$



5. Kayla has three times as many marbles as Mason.

Brooke has 20 more marbles than Kayla.

Brooke has the same number of marbles as Mason and Kayla combined.

How many marbles does Mason have? Show a clear algebraic method.

[3]

6. A teacher chooses a student at random from his maths group. The probability that he chooses a student who likes algebra is 0.6.

a. What is the probability he will choose a student who does not like algebra?

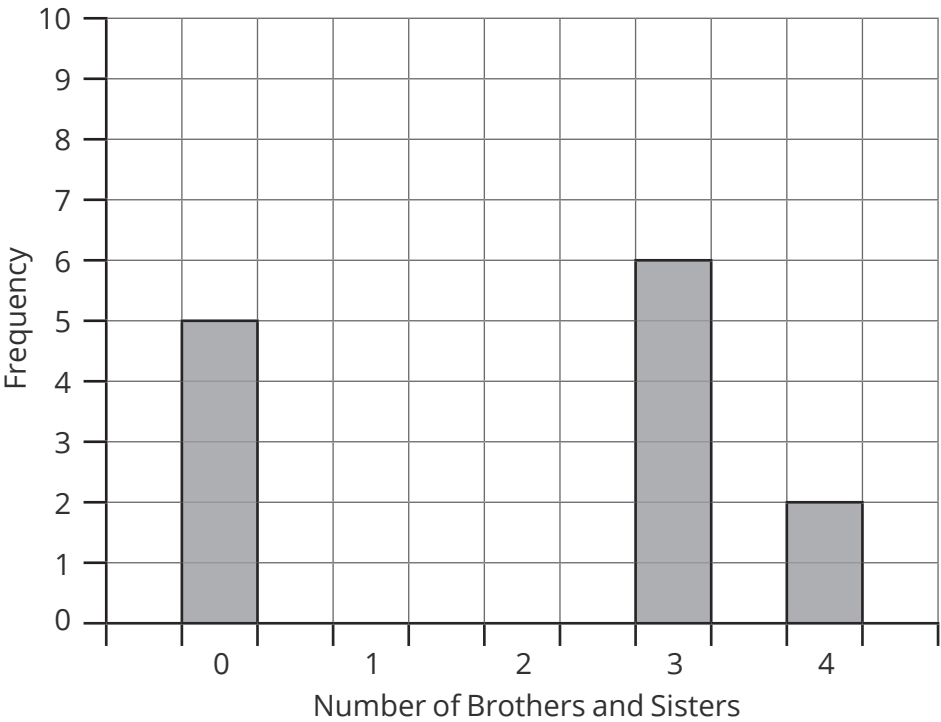
[1]

b. If there are 20 students in his maths group, how many of them like algebra?

[2]

7. 32 children were asked how many brothers and sisters they had. The incomplete pictogram and bar chart both illustrate this data. Complete the pictogram and bar chart.

[4]



Number of Brothers and Sisters	 Represents  Children
0	  
1	    
2	
3	
4	



8. Evaluate:

a. 2^4

[1]

b. $\sqrt{81}$

[1]

9. A football costs £5.25. Zack buys 21 footballs for his under-16 team to practise.

a. By rounding both numbers to 1 significant figure, estimate the amount of money that Zack spends on the footballs. Show your working.

[2]

b. Is your answer an underestimate or overestimate of the actual cost of the footballs? Explain your answer.

[2]

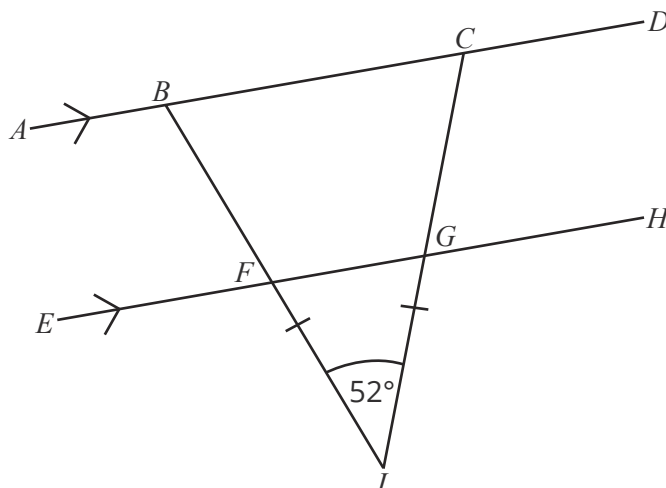
10. The shoe sizes of a randomly-picked group of 9 ten-year-olds are shown.

2, 2, 1, 3, 1, 3, 1, 3, 2

The shoe sizes of a randomly picked group of 8 eighteen-year-olds are also collected. The mean of these shoes sizes is 7.5 and the range is 6. Compare the distribution of the shoe sizes of the ten-year-olds with those of the eighteen-year-olds.

[5]

11. $ABCD$, $EFGH$, BFI and CGI are straight lines. $ABCD$ and $EFGH$ are parallel. $FI = GI$. Angle $FIG = 52^\circ$. Find angle BCG , giving reasons for your answer.



[4]

12. Kela is going to buy 16 new mugs. She has found the mugs she wants for sale in two different stores. Information is given about prices at Mugs 'R' Us and Muggins. At which store could Kela buy the mugs for the lowest price and by how much?

Mugs 'R' Us Set of 6 for £12.99 Individual mugs £3 Sale! $\frac{1}{3}$ off all prices!

Muggins Set of 4 £5.95 + V.A.T. @20%
--

[6]



13. Evaluate:

a. 238×76

[3]

b. 23.8×0.76

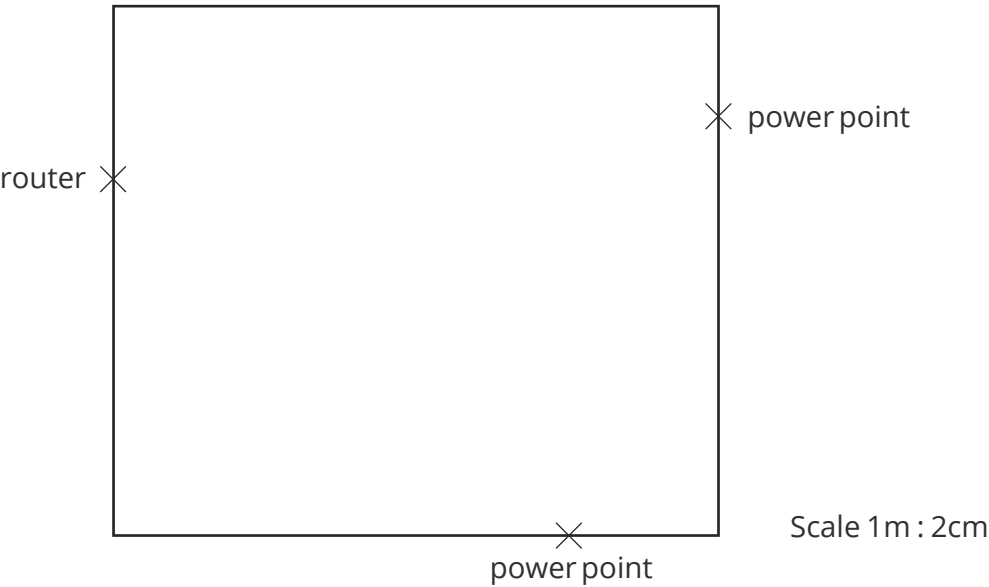
[1]

14. Point A has coordinates (1, 6). Point M is the midpoint of line AB and has coordinates (2, 0). What are the coordinates of point B?

[2]

15. The map shows the position of the Wi-Fi router and the power points in Adisa’s office. In order for his computer to function, his desk needs to be within 3m of a power point and within 2m of the router. Shade the area in which he could put his desk.

[4]





16. a. Expand: $3x(4x + 2)$

[2]

b. Factorise fully: $12xy^2 - 18xy$

[2]

c. Expand and simplify: $2(3x + 2y) - 3(5y - x)$

[2]



|





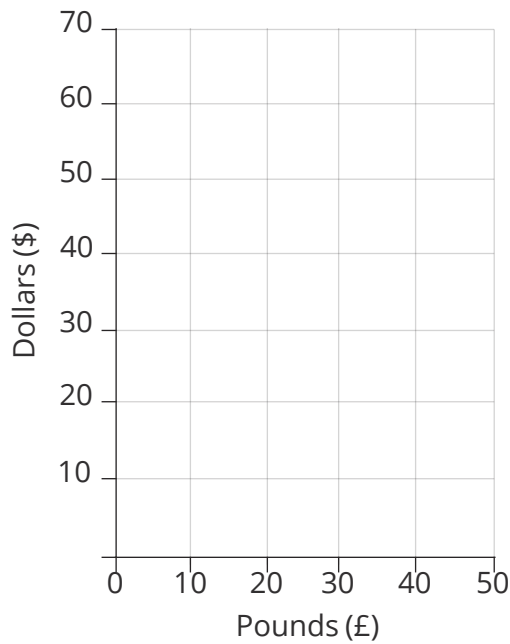
17. George is going to Florida. On the day that he changes his money, the exchange rate is £1 = \$1.23

a. How many dollars would George get for £10?

[1]

b. Draw a conversion graph for £ to \$, for values from 0 to £50.

[1]



c. George buys a pair of shoes for \$45 while he is in Florida. Use your graph to give an approximate value of the cost of the shoes in pounds.

[2]

18. Evaluate $\frac{7}{12} + \frac{2}{3}$, giving your answer as a fully simplified mixed number.

[3]



19. a. i. Explain why this is a geometric sequence:

2, 4, 8, 16

[1]

ii. What is the common ratio in this sequence?

[1]

b. Ryan is studying pine cones. The plates in the cone make a spiral pattern. He counts how many plates there are in each spiral, and gets:

1, 1, 2, 3, 5

Circle the type of sequence formed by the plates.

[1]

Fibonacci

Geometric

Arithmetic

Quadratic

20. Mo runs 1500m in 6 minutes. Usain runs 2.21km in 8 minutes 30 seconds. Who has the greater average speed, Usain or Mo?

[4]



21. Jonti and Hamid share £2880 in the ratio $x:7$. Jonti receives £1200. Find x .

[3]

22. A cone which contains chips has base radius 9cm and volume of 600cm^3 . Find the vertical height of the cone. Give your answer in terms of π in its simplest form.

Volume of a cone = $\frac{1}{3}\pi r^2 h$

[4]
