Name ..... Class .....

Calculator Crossover Paper 7

GCSE Mathematics · Foundation and Higher

40 marks · 45 minutes · Calculator

1 (a) Use your calculator to work out $2.6^4 - \sqrt{41.3}$

Write down all the figures on your calculator display.

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

(b) Work out the cube root of 42.875

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

[Question 1: 3 marks]

2 The mass of a suitcase is 23 kg, correct to the nearest kilogram.

Write down the error interval for the mass, m kg, of the suitcase.

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

[Question 2: 2 marks]

3 Dan asked 90 people how many times they went to the cinema last month.

The table shows his results.

Number of visits	Frequency
0	12
1	23
2	31
3	16
4	8

Work out the mean number of visits.

Give your answer correct to 1 decimal place.

..... **(3)**

[Question 3: 3 marks]

4 Tom wants to find out how many hours adults in his town spend watching sport each week.

He asks the first 20 people leaving a football match.

(a) Give one reason why this sample may be biased.

.....

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

(b) Suggest one way Tom could improve his sampling method.

.....

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

[Question 4: 2 marks]

5 Leah buys 40 phone cases for a total of £150

She sells 28 of the phone cases for £6.50 each.

She sells the rest of the phone cases for £3.20 each.

Work out Leah's percentage profit.

Give your answer correct to 1 decimal place.

..... % **(4)**

[Question 5: 4 marks]

6 Sam buys a new motorbike for £9400

In the first year, the value of the motorbike falls by 18%.

In each of the following years, the value of the motorbike falls by 11% of its value at the start of that year.

Work out the value of the motorbike at the end of 3 years.

Give your answer to the nearest pound.

£ ..... **(3)**

[Question 6: 3 marks]

7 Owen cycles 44.4 km at an average speed of 18.5 km/h.

How long does Owen take?

Give your answer in hours and minutes.

..... hours

..... minutes **(3)**

[Question 7: 3 marks]

8 (a) Expand and simplify $3(2x - 5) - 4(x - 1)$

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

(b) Factorise $x^2 - 9x + 14$

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

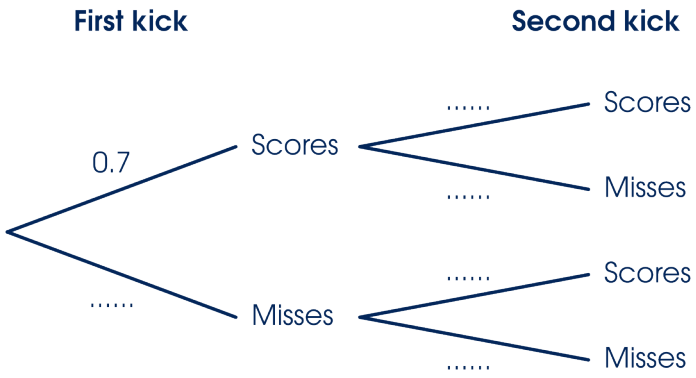
[Question 8: 4 marks]

9 Ella takes two penalty kicks.

The probability that she scores with each penalty kick is 0.7

The two kicks are independent.

(a) Complete the probability tree diagram.



(2)

(b) Work out the probability that Ella scores with at least one of her two penalty kicks.

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

[Question 9: 4 marks]

10 Mia is flying a kite.

She holds the end of the string 1.4 m above the ground.

The string is a straight line of length 35.2 m.

The kite is vertically above a point on the ground 18.9 m horizontally from Mia.

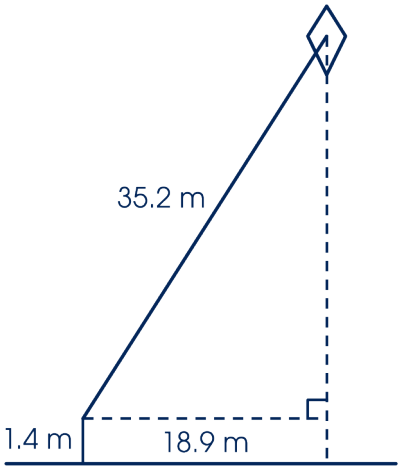


Diagram NOT accurately drawn

Work out the height of the kite above the ground.

Give your answer correct to 1 decimal place.

..... m **(3)**

[Question 10: 3 marks]

11 Triangle *ABC* is similar to triangle *DEF*.

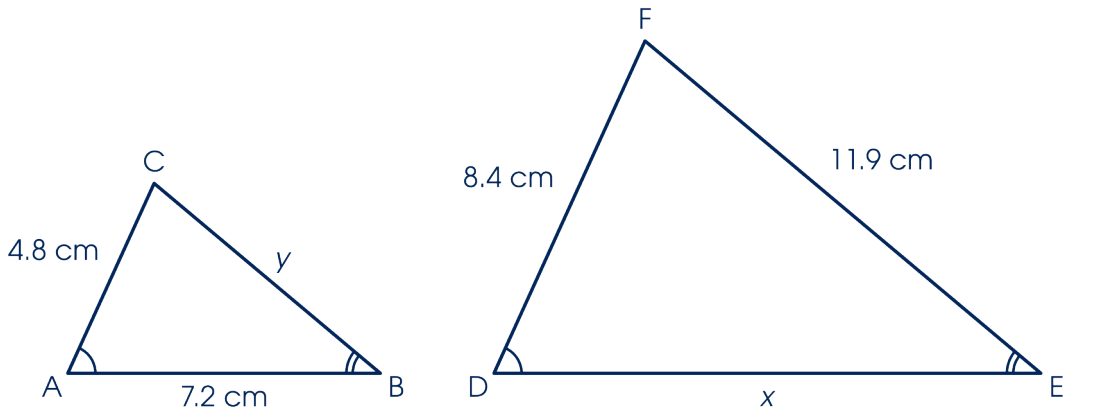


Diagram NOT accurately drawn

(a) Work out the value of *x*.

x = ... **(2)**

(b) Work out the value of *y*.

y = ... **(1)**

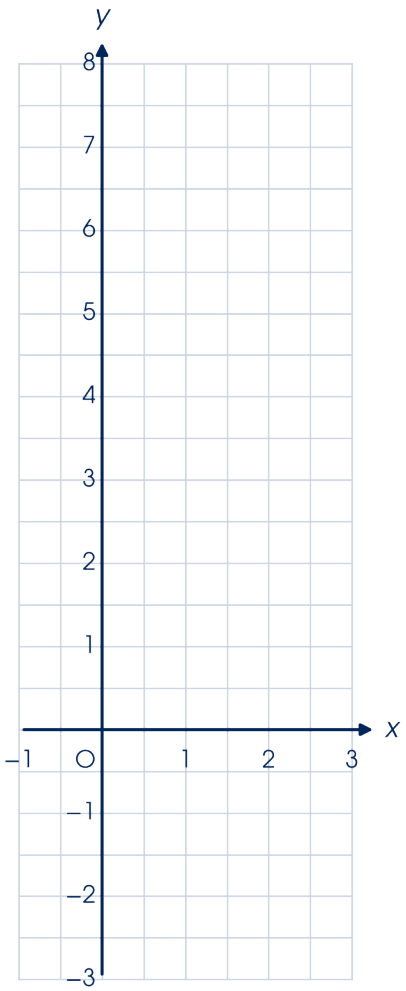
[Question 11: 3 marks]

12 (a) Complete the table of values for $y = 2x^2 - 3x - 1$

x	−1	−0.5	0	0.5	1	1.5	2	2.5	3
y	4		−1		−2	−1		4	8

(2)

(b) On the grid, draw the graph of $y = 2x^2 - 3x - 1$ for values of x from −1 to 3



(2)

(c) Use your graph to estimate the solutions of $2x^2 - 3x - 1 = 0$

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

[Question 12: 6 marks]

TOTAL FOR PAPER IS 40 MARKS