Year 7

Mathematics

Higher: No calculator allowed

Time allowed: 45 minutes

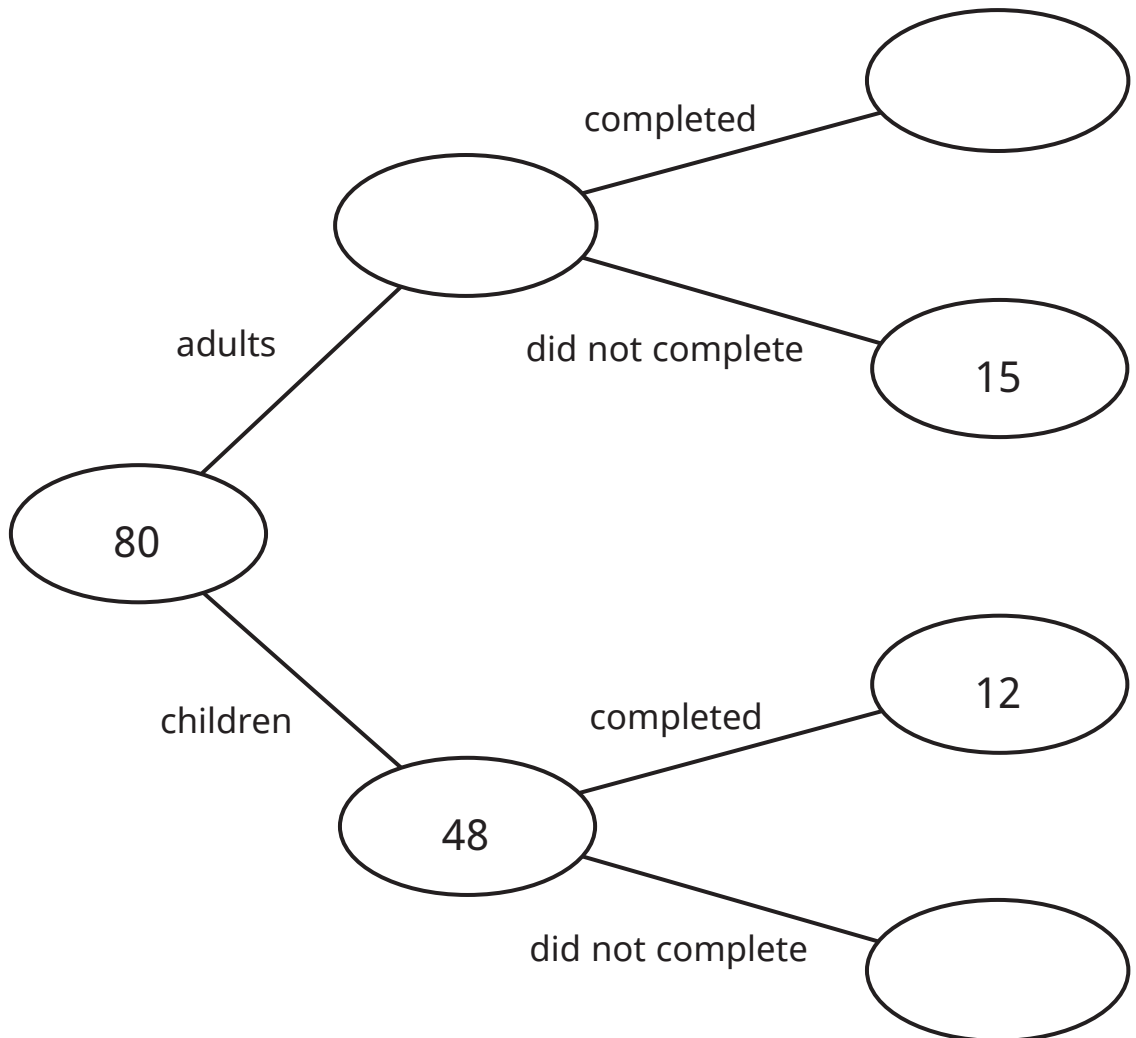| First name	
Middle name	
Last name	
Date of birth	Day ☐ Month ☐ Year ☐
Teacher	

White Rose Maths

1   80 people tried a puzzle.

12 of the 48 children completed the puzzle.

15 of the adults did not complete the puzzle.

Complete the frequency tree.

2 marks

2 A youth club raises money by staging a concert.

The amount of money raised is given by the formula:

amount raised = number of tickets sold × price of tickets – expenses

170 tickets were sold at £6 each.

The expenses were £245

What was the amount of money raised by the concert?

£

3 Work out 0.36 × 0.01

Give your answer as a decimal number.

1 mark

Write your answer in standard form.

_____

1 mark

4 Round each number to one significant figure.

Write your answers using numerals.

801 million

1 mark

37 thousandths

1 mark

5 Solve the equations.

$$a - \frac{3}{4} = \frac{1}{5}$$

$a =$

2 marks

$12 - 4b = 20$

$b =$

2 marks

Find two values of y that make the equation true.

$2y^2 = 50$

$y =$, $y =$

2 marks

6 A trailer can carry a maximum mass of 658 kg.

How many 7 kg boxes can the trailer carry?

<div style="border: 1px solid black; width: 200px; height: 80px;"></div>

How many 18 kg boxes can the trailer carry?

<div style="border: 1px solid black; width: 200px; height: 80px;"></div>

7 Dora scores 50 marks out of 80 in a test.

Filip scores 65% in the same test.

Who scored more on the test?

Circle your answer.

Dora   **Filip**

Explain how you know.

8 Work out the calculations.

$7 \times 10^8 - 3 \times 10^8$

_____

$7 \times 10^8 + 3 \times 10^8$

_____

$0.8 + \dfrac{1}{5}$

$5\dfrac{1}{3} - \dfrac{3}{4}$

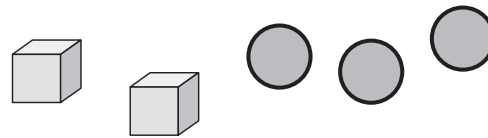**9** One cube represents the expression $3m + 1$ ▱ $= 3m + 1$

One counter represents the expression $2m - 3$ ◯ $= 2m - 3$

Write, in its simplest form, the expression shown in the diagram.

2 marks

10 Write the next term in this geometric sequence.

$$\frac{1}{2x}, \qquad \frac{1}{4x}, \qquad \boxed{}$$

1 mark

Find the missing terms in this linear sequence.

$$3\frac{3}{5}, \quad \boxed{}, \quad \boxed{}, \quad 2\frac{2}{5}$$

2 marks

11 Mo is thinking of a number.
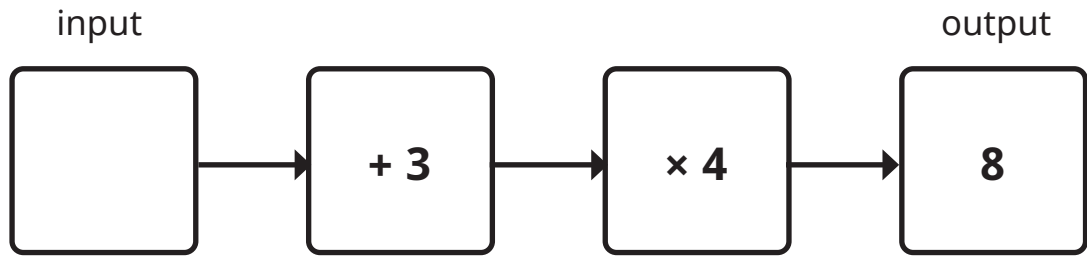
130% of Mo's number is 104
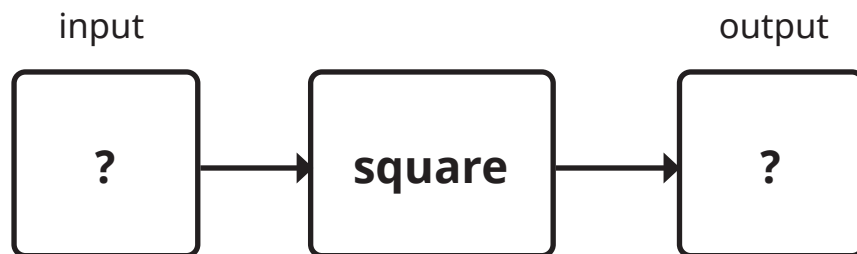
Work out $\frac{3}{5}$ of Mo's number.

2 marks

12 Find the input for the two-step function machine.

input

	+3	×4	output
			8

2 marks

Find two values for which the output of this function machine is the same as the input.

input

?	square	?

output

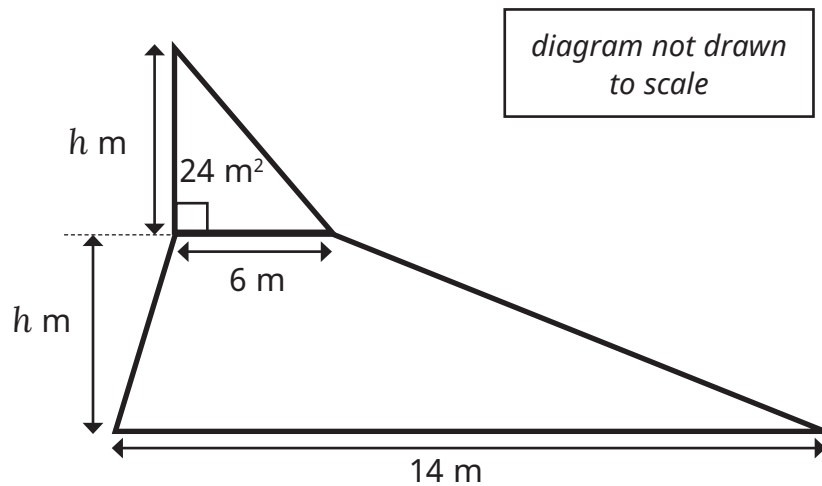first value =

second value =

2 marks

The diagram shows a sail.

The top part of the sail is a triangle with perpendicular height h metres.

The bottom part of the sail is a trapezium with perpendicular height h metres.

The area of the triangle is 24 m²

diagram not drawn to scale

h m

24 m²

6 m

h m

14 m

Calculate the area of the trapezium.

m²

4 marks

14 The price of a season train ticket increases by 8%

The price of the ticket increases by £148

Find the price of the ticket before the price increase.

£ ⬚

2 marks

END OF TEST