

Answer ALL TWENTY THREE questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Show that $1\frac{2}{3} + 2\frac{3}{4} = 4\frac{5}{12}$

(Total for Question 1 is 3 marks)



2 There are 60 children in a club.

In the club, the ratio of the number of girls to the number of boys is 3 : 1

$\frac{3}{5}$ of the girls play a musical instrument.

$\frac{4}{5}$ of the boys play a musical instrument.

What fraction of the 60 children play a musical instrument?

(Total for Question 2 is 4 marks)

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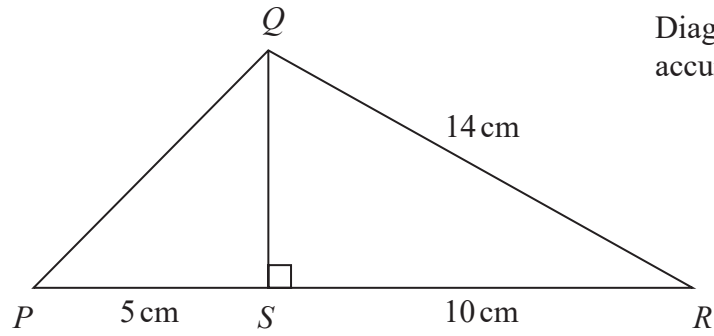
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3

Diagram **NOT**
accurately drawn



In triangle PQR ,

S is the point on PR such that $\angle RSQ = 90^\circ$

$RQ = 14$ cm

$RS = 10$ cm

$SP = 5$ cm

Work out the length of PQ .

cm

(Total for Question 3 is 4 marks)



4 a , a , b and 40 are four numbers.

a is the least number.

40 is the greatest number.

The range of the four numbers is 14

The median of the four numbers is 30

Work out the value of a and the value of b .

$a =$

$b =$

(Total for Question 4 is 3 marks)

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5 The Shanghai Maglev Train takes 8 minutes to travel a distance of 30.5 kilometres.

Work out the average speed of the train.
Give your answer in kilometres per hour.

kilometres per hour

(Total for Question 5 is 3 marks)



6 The diagram shows the triangle PQR .

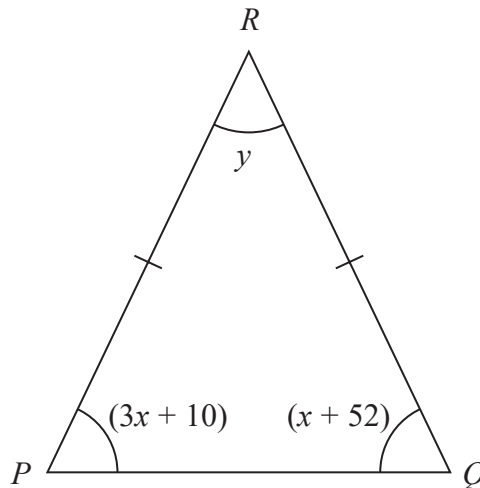


Diagram **NOT** accurately drawn

In the diagram, all the angles are in degrees.

$$RP = RQ$$

Find the value of y .

Show clear algebraic working.

$$y =$$

(Total for Question 6 is 4 marks)

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7 The diagram shows two water towers in Kuwait.

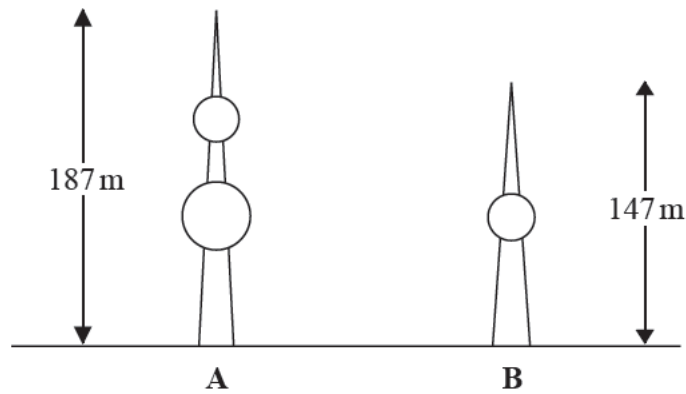


Diagram **NOT** accurately drawn

The real height of tower **A** is 187 m.

The real height of tower **B** is 147 m.

Ahmed makes a scale model of both towers.

The height of tower **A** on the scale model is 90 cm.

Work out the height of tower **B** on the scale model.

Give your answer correct to the nearest centimetre.

cm

(Total for Question 7 is 3 marks)



8 Solve the simultaneous equations

$$4x + 2y = 9$$

$$x - 4y = 9$$

Show clear algebraic working.

$$x =$$

$$y =$$

(Total for Question 8 is 3 marks)

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