## Find side lengths of similar figures

Name: ............................................................  Class: ...........................

Given that each pair of figures below are similar, find the measures of the missing sides.

**1.**

24 cm

40 cm

6 cm

x

**3.**

22 cm

40 cm

9 cm

x

**2.**

50 m

x

25 m

20 m

**4.**

90 m

x

45 m

30 m

MP
Math-wordproblems.com

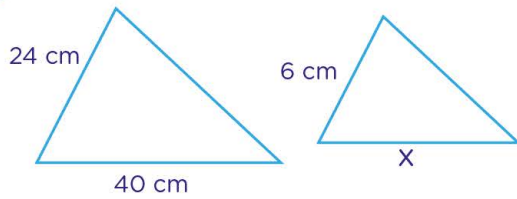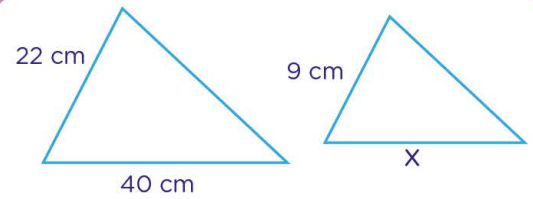Name: ................................................ Class: ........................

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**1.**

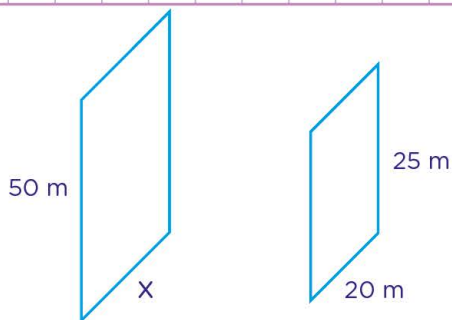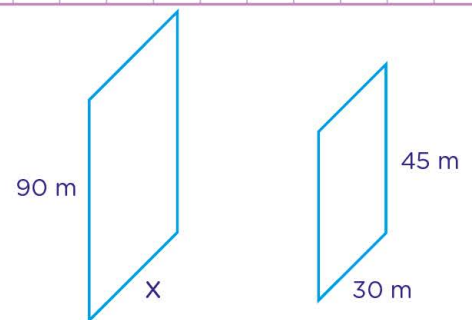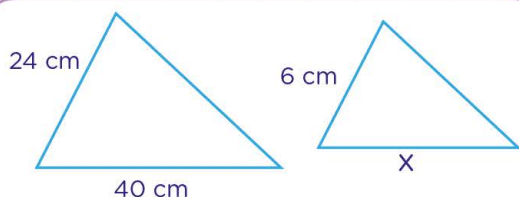24 cm   6 cm

40 cm   x

Since the triangles are similar,
The ratios of the corresponding sides
will be equal.
The triangles' shorter sides have
a ratio of 6/24.
The triangles longer sides have a ratio of x/40.

Write a proportion and solve for x.

$$\frac{6}{24} = \frac{x}{40}$$

Solve for x by cross multiplying.

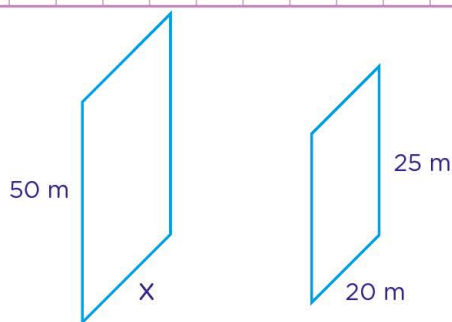$$\frac{6}{24} \diagdown \frac{x}{40}$$

$24x = 40(6)$
$24x = 240$

$x \longrightarrow \frac{240}{24} = \frac{10 \times 24}{24}$

So, x = 10 cm.

**2.**

50 m   25 m

x   20 m

Since the above parallelograms are similar,
The ratios of the corresponding sides
will be equal.
The parallelograms' longer sides have
a ratio of 25/50.
The parallelograms' shorter sides have
a ratio of 20/x.

Write a proportion and solve for x.

$$\frac{25}{50} = \frac{20}{x}$$

Solve for x by cross multiplying.

$$\frac{25}{50} \diagdown \frac{20}{x}$$

$25x = 20(50)$
$25x = 1000$

$x \longrightarrow \frac{1000}{25} = \frac{40 \times 25}{25}$

So, x = 40 m.