

DRAW DIAGRAMS IF IT HELPS!

1. Triangles A and B are similar.

Triangle A has a base of **4 cm** and the matching base on triangle B is **12 cm**.

If the height of A is **5 cm**, find the height of B.

2. Rectangles C and D are similar.

Rectangle C has width **3 cm** and height **7 cm**.

Rectangle D has width **9 cm**.

Find the height of D.

3. Two similar triangles E and F.

Triangle E has a slanted side of **6 cm** and the matching slanted side on F is **18 cm**.

If the base of E is **4 cm**, find the base of F.

4. Trapeziums G and H are similar.

The top of G is **5 cm** and the top of H is **20 cm**.

If the bottom of G is **7 cm**, find the bottom of H.

5. Two similar parallelograms J and K.

J has a base of **8 cm** and K has a base of **12 cm**.

If J has a slanted side of **5 cm**, find the slanted side of K.

Triangle L has sides **3 cm**, **4 cm**, **5 cm**.

The longest side of M is **15 cm**.

Find the shortest side of M.

7. Rectangles N and P are similar.

Rectangle N has height **10 cm** and width **4 cm**.

Rectangle P has height **25 cm**.

Find the width of P.

1. Triangles A and B

Base A = 4 cm, base B = 12 cm

$$\text{Scale factor} = \frac{12}{4} = 3.$$

Height of A = 5 cm, so height of B:

$$\text{height}_B = 5 \times 3 = 15 \text{ cm}$$

Answer: 15 cm

2. Rectangles C and D

Width C = 3 cm, width D = 9 cm

$$\text{Scale factor} = \frac{9}{3} = 3.$$

Height of C = 7 cm, so height of D:

$$\text{height}_D = 7 \times 3 = 21 \text{ cm}$$

Answer: 21 cm

3. Triangles E and F

Matching slanted sides: 6 cm (E) → 18 cm (F)

$$\text{Scale factor} = \frac{18}{6} = 3.$$

Base of E = 4 cm, so base of F:

$$\text{base}_F = 4 \times 3 = 12 \text{ cm}$$

Answer: 12 cm

4. Trapeziums G and H

Top G = 5 cm, top H = 20 cm

$$\text{Scale factor} = \frac{20}{5} = 4.$$

Bottom of G = 7 cm, so bottom of H:

$$\text{bottom}_H = 7 \times 4 = 28 \text{ cm}$$

Answer: 28 cm

5. Parallelograms J and K

Base J = 8 cm, base K = 12 cm

$$\text{Scale factor} = \frac{12}{8} = 1.5.$$

Slanted side of J = 5 cm, so slanted side of K:

$$\text{side}_K = 5 \times 1.5 = 7.5 \text{ cm}$$

Answer: 7.5 cm

6. Triangles L and M

Longest side of L = 5 cm; longest side of M = 15 cm

$$\text{Scale factor} = \frac{15}{5} = 3.$$

Shortest side of L = 3 cm, so shortest side of M:

$$\text{shortest}_M = 3 \times 3 = 9 \text{ cm}$$

Answer: 9 cm

7. Rectangles N and P

Height N = 10 cm, height P = 25 cm

$$\text{Scale factor} = \frac{25}{10} = 2.5.$$

Width of N = 4 cm, so width of P:

$$\text{width}_P = 4 \times 2.5 = 10 \text{ cm}$$

Answer: 10 cm
