1) Triangle ABC is similar to triangle DEF.

- Triangle ABC: $x$ cm, $2$ cm, $4$ cm
- Triangle DEF: $30$ cm, $20$ cm, $y$ cm

Find
a) $x$

b) $y$

2) Find the missing length, $x$, in rectangle ABCD shown below.
3) Find the missing lengths, \(x\) and \(y\), in the picture below.

![Diagram with missing lengths](image)

4) The two rectangles, A and B, are mathematically similar. The lengths in B are twice the lengths in A. The area of A is 14 cm\(^2\). Find the area of B.

![Rectangles A and B](image)
5) The two squares, A and B, are mathematically similar. The lengths in B are twice the lengths in A. The area of B is 40 cm$^2$. Find the area of A.

6) The two squares, X and Y, are mathematically similar. The areas of X and Y are 17 cm$^2$ and 272 cm$^2$, respectively. The length of X is 5 cm. Find the corresponding length of Y.

7) The two squares, X and Y, are mathematically similar. The areas of X and Y are 19 cm$^2$ and 304 cm$^2$, respectively. The length of Y is 40 cm. Find the corresponding length of X.
8) Two cubes, A and B, are mathematically similar. The height of B is triple the corresponding height of A. The surface area of A is $19 \text{ cm}^2$. Find the surface area of B.

9) Two cylinders, A and B, are mathematically similar. The height of B is twice the corresponding height of A. The volume of A is $13 \text{ cm}^3$. Find the volume of B.
10) Two cylinders, A and B, are mathematically similar. The height of B is twice the corresponding height of A. The volume of B is 120 cm$^3$. Find the volume of A.

11) Two spheres, A and B, are mathematically similar. The volumes of A and B are 11 cm$^3$ and 297 cm$^3$, respectively. The radius of A is 6 cm. Find the corresponding radius of B.

12) Two cubes, A and B, are mathematically similar. The volumes of A and B are 17 cm$^3$ and 136 cm$^3$, respectively. The height of B is 18 cm. Find the corresponding height of A.
Solutions for the assessment Areas and Volumes of similar shapes

1) \(x = 6 \text{ cm}, \ y = 10 \text{ cm}\)

2) \(x = 11 \text{ cm}\)

3) \(x = 12 \text{ cm}, \ y = 30 \text{ cm}\)

4) Area = 56 cm\(^2\)

5) Area = 10 cm\(^2\)

6) length of \(Y = 20 \text{ cm}\)

7) length of \(X = 10 \text{ cm}\)

8) Surface area of \(B = 171 \text{ cm}^2\)

9) Volume of \(B = 104 \text{ cm}^3\)

10) Volume of \(A = 15 \text{ cm}^3\)

11) radius of \(B = 18 \text{ cm}\)

12) height of \(A = 9 \text{ cm}\)