**Areas and Volumes of similar shapes**

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| **1)** Triangle ABC is similar to triangle DEF. Find the length of the sides   and  .        http://www.mathster.com/course/simgs/36708141225_1.pnghttp://www.mathster.com/course/simgs/36708141225_2.png | [1] |
| **2)** Find the missing length,  , in rectangle ABCD shown below        http://www.mathster.com/course/simgs/36708141225_3.pnghttp://www.mathster.com/course/simgs/36708141225_4.png | [1] |
| **3)** Find the missing lengths,   and  , in the picture below            http://www.mathster.com/course/simgs/36708141225_5.png | [1] |
| **4)** The two squares, A and B, are mathematically similar. The lengths in B are twice the lengths in A. The area of A is 15  . Find the area of B. http://www.mathster.com/course/simgs/36708141225_6.pnghttp://www.mathster.com/course/simgs/36708141225_7.png | [1] |
| **5)** The two rectangles, A and B, are mathematically similar. The lengths in B are twice the lengths in A. The area of B is 52  . Find the area of A. http://www.mathster.com/course/simgs/36708141225_8.pnghttp://www.mathster.com/course/simgs/36708141225_9.png | [1] |
| **6)** The two squares, X and Y, are mathematically similar. The areas of X and Y are 19   and 76  , respectively. The length of X is 8 cm. Find the corresponding length of Y. | [1] |
| **7)** The two circles, X and Y, are mathematically similar. The areas of X and Y are 15   and 135  , respectively. The radius of Y is 30 cm. Find the corresponding radius of X. | [1] |
| **8)** Two cylinders, A and B, are mathematically similar. The height of B is twice the corresponding height of A. The surface area of A is 11  . Find the surface area of B. http://www.mathster.com/course/simgs/36708141225_10.pnghttp://www.mathster.com/course/simgs/36708141225_11.png | [1] |
| **9)** Two spheres, A and B, are mathematically similar. The radius of B is triple the corresponding radius of A. The volume of A is 17  . Find the volume of B. http://www.mathster.com/course/simgs/36708141225_12.pnghttp://www.mathster.com/course/simgs/36708141225_13.png | [1] |
| **10)** Two cubes, A and B, are mathematically similar. The height of B is twice the corresponding height of A. The volume of B is 152  . Find the volume of A. http://www.mathster.com/course/simgs/36708141225_14.pnghttp://www.mathster.com/course/simgs/36708141225_15.png | [1] |
| **11)** Two spheres, A and B, are mathematically similar. The volumes of A and B are 17   and 459  , respectively. The radius of A is 5 cm. Find the corresponding radius of B. | [1] |
| **12)** Two cylinders, A and B, are mathematically similar. The volumes of A and B are 20   and 160  , respectively. The height of B is 16 cm. Find the corresponding height of A. | [1] |

**Solutions for the assessment Areas and Volumes of similar shapes**

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| **1)**   = 8 cm,   = 6 cm | **2)**   = 9 cm |
| **3)**   = 9 cm and   = 18 cm | **4)** Area = 60 |
| **5)** Area = 13 | **6)** length of Y = 16 cm |
| **7)** radius of X = 10 cm | **8)** Surface area of B = 44 |
| **9)** Volume of B = 459 | **10)** Volume of A = 19 |
| **11)** radius of B = 15 cm | **12)** height of A = 8 cm |