**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/39644792577_1.pnghttp://www.mathster.com/course/simgs/39644792577_2.png | [1] |
| **2)** Find the missing length,  , in rectangle ABCD shown below        http://www.mathster.com/course/simgs/39644792577_3.pnghttp://www.mathster.com/course/simgs/39644792577_4.png | [1] |
| **3)** Find the missing lengths,   and  , in the picture below            http://www.mathster.com/course/simgs/39644792577_5.png | [1] |
| **4)** The two circles, A and B, are mathematically similar. The lengths in B are triple the lengths in A. The area of A is 15  . Find the area of B. http://www.mathster.com/course/simgs/39644792577_6.pnghttp://www.mathster.com/course/simgs/39644792577_7.png | [1] |
| **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 44  . Find the area of A. http://www.mathster.com/course/simgs/39644792577_8.pnghttp://www.mathster.com/course/simgs/39644792577_9.png | [1] |
| **6)** The two circles, X and Y, are mathematically similar. The areas of X and Y are 13   and 52  , respectively. The radius of X is 9 cm. Find the corresponding radius of Y. | [1] |
| **7)** The two circles, X and Y, are mathematically similar. The areas of X and Y are 15   and 60  , respectively. The radius of Y is 18 cm. Find the corresponding radius of X. | [1] |
| **8)** Two spheres, A and B, are mathematically similar. The radius of B is twice the corresponding radius of A. The surface area of A is 13  . Find the surface area of B. http://www.mathster.com/course/simgs/39644792577_10.pnghttp://www.mathster.com/course/simgs/39644792577_11.png | [1] |
| **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 15  . Find the volume of B. http://www.mathster.com/course/simgs/39644792577_12.pnghttp://www.mathster.com/course/simgs/39644792577_13.png | [1] |
| **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 88  . Find the volume of A. http://www.mathster.com/course/simgs/39644792577_14.pnghttp://www.mathster.com/course/simgs/39644792577_15.png | [1] |
| **11)** Two cubes, A and B, are mathematically similar. The volumes of A and B are 18   and 144  , respectively. The height of A is 8 cm. Find the corresponding height of B. | [1] |
| **12)** Two cubes, A and B, are mathematically similar. The volumes of A and B are 12   and 96  , respectively. The height of B is 20 cm. Find the corresponding height of A. | [1] |

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

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| **1)**   = 7 cm,   = 20 cm | **2)**   = 11 cm |
| **3)**   = 8 cm and   = 6 cm | **4)** Area = 135 |
| **5)** Area = 11 | **6)** radius of Y = 18 cm |
| **7)** radius of X = 9 cm | **8)** Surface area of B = 52 |
| **9)** Volume of B = 120 | **10)** Volume of A = 11 |
| **11)** height of B = 16 cm | **12)** height of A = 10 cm |