**Areas and Volumes of similar shapes**

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| **1)** Triangle ABC is similar to triangle DEF. Find the length of the sides  $x$ and  $y$.      http://www.mathster.com/course/simgs/36708141225_1.pnghttp://www.mathster.com/course/simgs/36708141225_2.png | [1]   |
| **2)** Find the missing length,  $x$, 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,  $x$ and  $y$, 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  $cm^{2}$. 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  $cm^{2}$. 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  $cm^{2}$ and 76  $cm^{2}$, 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  $cm^{2}$ and 135  $cm^{2}$, 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  $cm^{2}$. 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  $cm^{3}$. 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  $cm^{3}$. 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  $cm^{3}$ and 459  $cm^{3}$, 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  $cm^{3}$ and 160  $cm^{3}$, 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)**  $x$ = 8 cm,  $y$ = 6 cm | **2)**  $x$ = 9 cm |
| **3)**  $x$ = 9 cm and  $y$ = 18 cm | **4)** Area = 60  $cm^{2}$ |
| **5)** Area = 13  $cm^{2}$ | **6)** length of Y = 16 cm |
| **7)** radius of X = 10 cm | **8)** Surface area of B = 44  $cm^{2}$ |
| **9)** Volume of B = 459  $cm^{3}$ | **10)** Volume of A = 19  $cm^{3}$ |
| **11)** radius of B = 15 cm | **12)** height of A = 8 cm |