**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/39644792577_1.pnghttp://www.mathster.com/course/simgs/39644792577_2.png | [1]   |
| **2)** Find the missing length,  $x$, 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,  $x$ and  $y$, 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  $cm^{2}$. 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  $cm^{2}$. 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  $cm^{2}$ and 52  $cm^{2}$, 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  $cm^{2}$ and 60  $cm^{2}$, 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  $cm^{2}$. 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  $cm^{3}$. 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  $cm^{3}$. 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  $cm^{3}$ and 144  $cm^{3}$, 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  $cm^{3}$ and 96  $cm^{3}$, 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)**  $x$ = 7 cm,  $y$ = 20 cm | **2)**  $x$ = 11 cm |
| **3)**  $x$ = 8 cm and  $y$ = 6 cm | **4)** Area = 135  $cm^{2}$ |
| **5)** Area = 11  $cm^{2}$ | **6)** radius of Y = 18 cm |
| **7)** radius of X = 9 cm | **8)** Surface area of B = 52  $cm^{2}$ |
| **9)** Volume of B = 120  $cm^{3}$ | **10)** Volume of A = 11  $cm^{3}$ |
| **11)** height of B = 16 cm | **12)** height of A = 10 cm |