Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Per: \_\_\_\_ Table#\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_

**8.4C Volumes of Similar Solids\_Classwork**

*Objective: Use properties of similar solids to find missing measures. Understand relationship between volumes of similar solids.*

|  |
| --- |
| **Warm-Up**Determine whether the solids are similar   |



B

A

C

D

E

**Volume** $π$ $8π$ $27π$ $64π$ $125π$

Compare the radius of cylinder A to all of the other cylinders (B, C, D & E). Set up a proportion for each one. Simplify any ratios that can be simplified. Are the two ratios equal? Is there a way to make them equal?

|  |  |
| --- | --- |
|  $\frac{radius of A}{radius of B} \frac{volume of A}{volume of B}$ |  $\frac{radius of A}{radius of C} \frac{volume of A}{volume of C}$ |
|  $\frac{radius of A}{ radius of D} \frac{volume of A}{volume of D}$ |  $\frac{radius of A}{radius of E} \frac{volume of A}{volume of E}$ |

When two solids are similar, the ratio of their volumes is equal to the \_\_\_\_\_\_\_\_\_ of the ratio of their corresponding linear measures. $\left(\frac{a}{b}\right)^{3}=\frac{volume of A}{ volume of B}$

**Watch and copy the Big Ideas Math Video 8.4, Example 4 and Example 4 (p. 358)**

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| The cylinders are similar. Find the volume of Cylinder J. Round your answer to the nearest tenth. |
| Example 4 (p. 358)The dimensions of the touch tank at the aquarium are doubled. What is the volume of the new touch tank? |

**ON YOUR OWN #5 and 6 (p. 358)**

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| **The solids are similar. Find the volume of the small solid. Round your answer to the nearest tenth.** |
| **6. The solids are similar. Find the volume of the big solid. Round your answer to the nearest tenth.** |

**HW: (8.4C) p. 360 #10 -15 (ODD Solutions on p. A35)**

**EVEN SOLUTIONS**: 10) 756 m212) 196 mm3 14) Student answers will vary; V = 500 in3