Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **Unit 9 – Practice with Volume**

Monica

Geometry Period:\_\_\_\_

Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Directions:** Answer all of the questions below. In order to receive a “MS” rating, you must show all of your work, even for the multiple choice questions.

1) The volume of a rectangular prism is 144 cubic inches. The height of the prism is 8 inches. Which measurements, in inches, could be the dimensions of the base?

|  |  |
| --- | --- |
| 1) | 3.3 by 5.5 |
| 2) | 2.5 by 7.2 |
| 3) | 12 by 8 |
| 4) | 9 by 9 |

2) If the length of a rectangular prism is doubled, its width is tripled, and its height remains the same, what is the volume of the new rectangular prism?

|  |  |
| --- | --- |
| 1) | double the original volume |
| 2) | triple the original volume |
| 3) | six times the original volume |
| 4) | nine times the original volume |

3) A planned building was going to be 100 feet long, 75 feet deep, and 30 feet high. The owner decides to increase the volume of the building by 10% without changing the dimensions of the depth and the height. What will be the new length of this building?

|  |  |
| --- | --- |
| 1) | 106 ft |
| 2) | 108 ft |
| 3) | 110 ft |
| 4) | 112 ft |

4) A box in the shape of a cube has a volume of 64 cubic inches. What is the length of a side of the box?

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| --- | --- |
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5) A fish tank with a rectangular base has a volume of 3,360 cubic inches. The length and width of the tank are 14 inches and 12 inches, respectively. Find the height, in inches, of the tank.

6) The volume of a rectangular prism is 64 cubic inches. If the ratio of the length, width, and height is in a ratio of 4:2:1, what is the width of the prism?

7) Laura built a box by cutting 3-inch squares from the corners of a rectangular sheet of cardboard, as shown in the accompanying diagram, and then folding the sides up. The volume of the box is 150 cubic inches, and the longer side of the box is 5 inches more than the shorter side. Find the number of inches in the shorter side of the *original* sheet of cardboard.



8) Zander has a rectangular prism with a length of 10 centimeters, a width of 2 centimeters, and an unknown height. He needs to build another rectangular prism with a length of 5 centimeters and the same height as the original prism. The volume of the two prisms will be the same. Find the width, in centimeters, of the new prism.