

Name: Answer Key

Geometry Part 2 Test Study Guide

Standard to be Assessed: MGSE7.G.6 Solve real-world and mathematical problems involving area, volume, and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.

You may find the following formulas helpful:

Area of a Square or Rectangle:  $A = lw$  or  $A = bh$

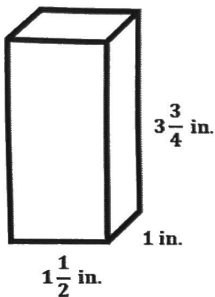
Area of a Triangle:  $A = \frac{bh}{2}$  or  $A = 0.5bh$

Volume of Rectangular Prism:  $V = lwh$

Volume of Triangular Prism:  $V = \frac{lw}{2}h$

Find the volume of each prism. Show all work. Include units of measurement with your answers.

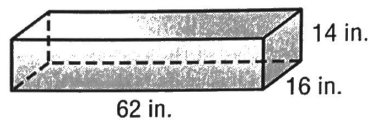
1. Hint: Rewrite as mixed decimals by converting the fractions to decimals (divide the numerator by the denominator.)



$$1.5 \times 1 \times 3.75$$

Volume:  $5.625 \text{ in}^3$

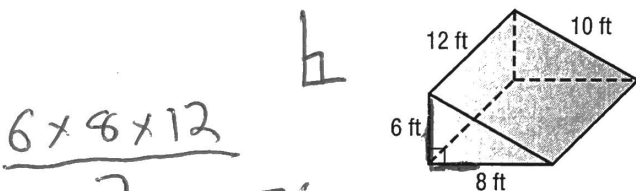
2.



$$62 \times 16 \times 14$$

Volume:  $13,888 \text{ in}^3$

3.

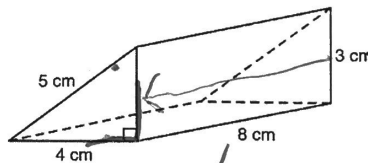


$$\frac{6 \times 8 \times 12}{2}$$

$$\frac{576}{2}$$

Volume:  $288 \text{ ft}^3$

4.

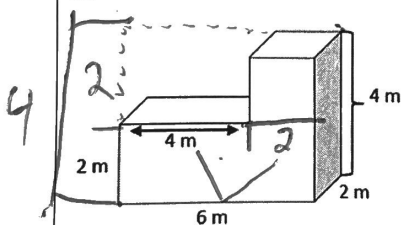


$$\frac{3 \times 4 \times 8}{2}$$

$$\frac{96}{2}$$

Volume:  $48 \text{ cm}^3$

5.

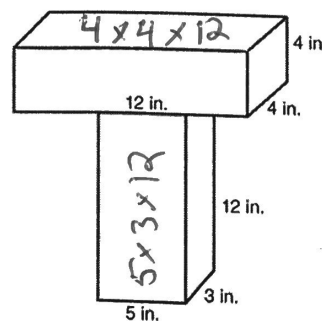


$$2 \times 6 \times 2 = 24$$

$$2 \times 2 \times 2 = 8$$

Volume:  $32 \text{ m}^3$

6.

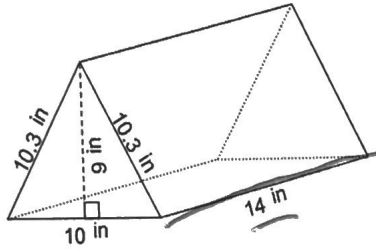


$$192 + 180$$

Volume:  $372 \text{ in}^3$

For #7 – 9, complete the F-A-T table to calculate the surface area of each prism. Show all work. Include units of measurement with you answers.

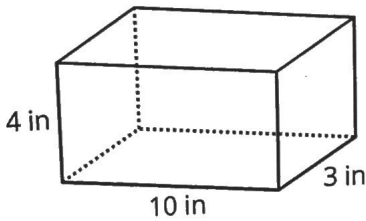
7.



Faces	Area	Total
Triangle 1 Triangle 2	$\left(\frac{9 \times 10}{2}\right) 2$	90
Rectangle 1	$14 \times 10$	140
Rectangle 2 Rectangle 3	$14 \times 10.3$ $14 \times 10.3$	144.2 144.2

Total Surface Area: 518.4 in<sup>2</sup>

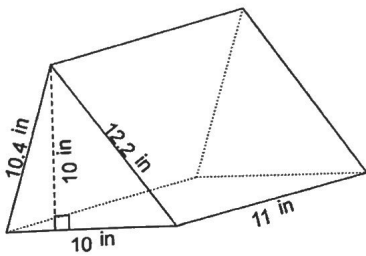
8.



Faces	Area	Total
Front & Back	$4 \times 10 \mid \times 2$	80
Top & Bottom	$10 \times 3 \mid \times 2$	60
Side/Side	$4 \times 3 \mid \times 2$	24

Total Surface Area: 164 in<sup>2</sup>

9.



Faces	Area	Total
Triangle 1 Triangle 2	$\left(\frac{10 \times 10}{2}\right) 2$	100
Rectangle 1	$11 \times 10$	110
Rectangle 2	$11 \times 12.2$	134.2
Rectangle 3	$11 \times 10.4$	114.4

Total Surface Area: 458.6 in<sup>2</sup>