Notes: Surface Area and Volume of Solid

**Nets and Surface Area**

lesson

15-1

Reteach

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| 6_MFLEDI066335_338T  To find the surface area of the regular triangular prism above,  first find the area of each face or base.  2 congruent triangular bases 3 rectangular faces  6_MFLEDI066335_339T  *A* *A**lw* *A**lw*      12 square units 54 square units 45 square units  Then, find the sum of all of the faces of the prism.  *SA* 12 12 54 45 45  168 square units  The same procedure can be used to find the surface area of a **pyramid**. The areas of the faces are added to the area of the base to give the total surface area. |

**Solve each problem.**

Volume of Rectangular Prisms

lesson

15-2

Reteach

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| The volume of a rectangular prism is found by multiplying its length, width, and height. In some cases, instead of the length and width,  the area of one of the bases of the prism will be known. | |
| Length, width, height, and volume  A rectangular prism has dimensions of 2.5 meters, 4.3 meters, and 5.1 meters. What is its volume to two significant figures?  **Solution**  *V*  *l* × *w* × *h*  *V*  2.5 × 4.3 × 5.1   54.825  To two significant figures, the volume of the prism is 55 cubic meters. | Base area, height, and volume  A rectangular prism has a base area of   of a square foot. Its height is  foot. What is its volume?  **Solution**  *V*  *Abase* × *h*  *V*   ×    The volume of the prism is  cubic foot. |

Find the volume of a rectangular prism with the given dimensions.

1. length:  yd; width:  yd; height:  yd \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. base area: 12.5 m2; height: 1.2 m \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| The density of a metal in a sample is the mass of the sample divided  by the volume of the sample. The units are mass per unit volume.  **Problem** The mass of a sample of metal is 2,800 grams. The sample  is in the shape of a rectangular prism that measures 5 centimeters by  7 centimeters by 8 centimeters. What is the volume of the sample?  *V* 5 × 7 × 8   280 cm3  What is the density of the sample?  2,800 ÷ 280  10 g/cm3 |