

## 8-8: Solve Problems Involving Surface Area

1. Sample answer: You must find the sum of the areas of shapes to find the area of a composite figure. You also must find the sum of all the areas of the multiple faces for the surface area of a three-dimensional figure.
2. Sample answer: Laine finds the area of each face. She then adds all the areas together to find the total surface area.
3. Sample answer: Find the area of the faces that make up the sides on the figure and the area of the top and bottom. Then add all the areas together.
4. Sample answer: Find the area of each face. Then add these areas to find the surface area. Finally, divide the surface area by 24 to determine the number of cans of paint that are needed.
5.  $177.5 \text{ cm}^2$
6. Sample answer: Add the areas of the two rectangles on the ends, the two rectangles on the sides, and the rectangle on top.  
 $2(2 \times 3) + 2(6 \times 2) + (6 \times 3)$
7. Sample answers:  
6; 3; 18  
3; 4.5; 13.5  
3; 3; 4.5  
18; 13.5; 4.5; 36
8.  $130.5 \text{ ft}^2$
9.  $424 \text{ in.}^2$
10.  $3,408 \text{ cm}^2$
11.  $93 \text{ in.}^2$
12.  $666 \text{ in.}^2$
13.  $549 \text{ cm}^2$   
Sample answer:  
Base area =  $(0.5)(5)(4.3)(6) = 64.5$   
Multiply by 2 to cover the top of the prism.  $64.5(2) = 129 \text{ cm}^2$ . The area of one rectangular face is  $(5)(14) = 70$ . Then 6 faces  $(70) = 420 \text{ cm}^2$ .  
The total surface area is  $129 + 420 = 549 \text{ cm}^2$ .
14.  $25.62 \text{ cm}^2$
15. a.  $458.4 \text{ cm}^2$   
b. Only one lateral area was added to the area of the two triangular bases, when there are actually three lateral areas.
16. 112