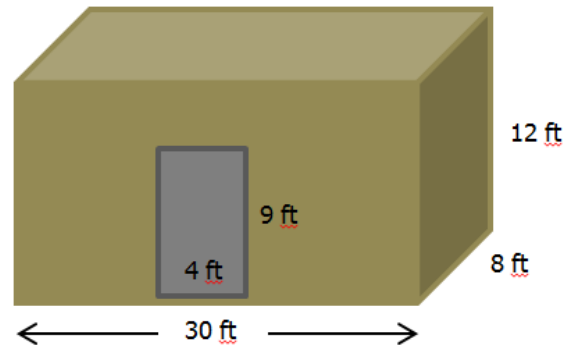## Possible Solutions

Mr. Hernandez wants to paint his storage shed. He needs to calculate the lateral surface area of the shed so that he knows how much paint to buy.

Including the doors, what is the lateral surface area of the storage shed in square feet?

Possible Solution 1

- The student needs to understand that lateral surface area is the four sides of the building and does not include the roof. Since the storage shed is a rectangular prism, the student may use the formula for *lateral surface area (LA) = Ph*, where *P* is the perimeter of the building and *h* is the height of the building.

$$LA = 2 (30 + 8)12$$

$$LA = 2(38)12$$

$$LA = 76(12)$$

$$LA = 912$$

Possible Solution 2

- Students may also use expanded notation and their knowledge of perimeter to use the following formula.

LA = Area of the front + area of the back + area of one side + area of the other side

$$(30 \times 12) + (30 \times 12) + (12 \times 8) + (12 \times 8)$$

$$360 + 360 + 96 + 96$$

$$912 \text{ ft.}^2$$

Possible Solution 3

- Since the front and the back are the same, find the area of the front and multiply by 2.
- Since both sides are the same, find the area of one side and multiply by 2.
- Then add the two numbers together.

$$LA = (\text{area of side}) \times 2 + (\text{area of front}) \times 2$$

$$(12 \times 8) \times 2 + (30 \times 12) \times 2$$

$$192 + 720$$

$$912 \text{ ft.}^2$$