17 Stacey will paint the four walls of a room. Two walls each have a length of 20 feet, and the other two walls each have a length of 16 feet.

The expression below represents the total perimeter, in feet, of the room.

$$2(20 + 16)$$

a. What is the total perimeter, in feet, of the room? Show or explain how you got your answer.

The room has 2 windows and 3 doors. Each window is 4 feet high and 3 feet wide, and each door is 7 feet high and 3 feet wide.

The expression below represents the total area, in square feet, of the windows and doors in the room.

$$2(4 \cdot 3) + 3(7 \cdot 3)$$

b. What is the total area, in square feet, of the windows and doors in the room? Show or explain how you got your answer.

The height of each of the walls in the room is 8 feet. Stacey will not paint the windows or doors.

The expression below represents the total area, in square feet, that Stacey will paint.

$$2(20 \cdot 8 + 16 \cdot 8) - [2(4 \cdot 3) + 3(7 \cdot 3)]$$

c. What is the total area, in square feet, that Stacey will paint? Show or explain how you got your answer.

Each gallon of paint covers a total area of 300 square feet. Stacey will cover the walls with 2 layers of paint.

The expression below represents the total number of gallons of paint Stacey will need to paint the room with 2 layers of paint.

$$\frac{2\{2(20 \cdot 8 + 16 \cdot 8) - [2(4 \cdot 3) + 3(7 \cdot 3)]\}}{300}$$

Each gallon of paint costs $26. Stacey must purchase full gallons of paint.

d. What is the total cost, in dollars, of the gallons of paint Stacey will need to purchase to paint the room? Show or explain how you got your answer.