

Focus
Standards
and Claim

Claim 4
6.RP.A

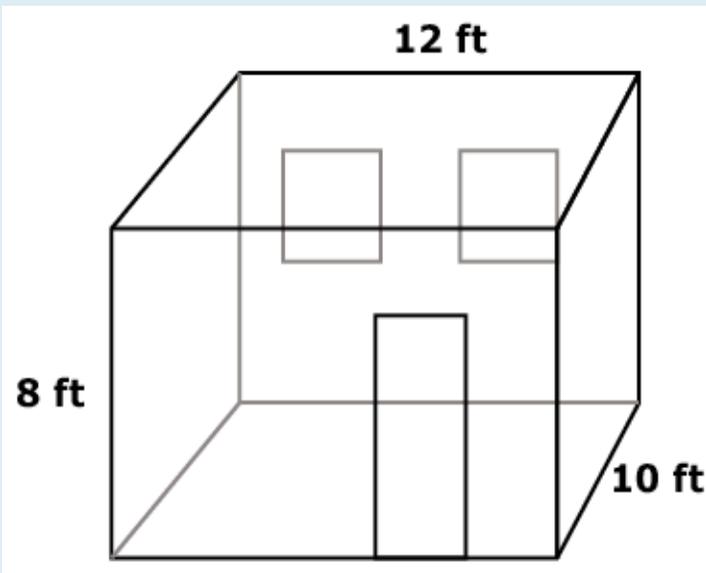
Stimulus

Let's Paint a Room

Your friend Sam wants to paint her room. She wants to paint the ceiling white and the four walls purple.

You are helping Sam determine the cost and the amount of time needed to paint her room.

The room is shaped like a rectangular prism with a height of 8 feet, length of 12 feet, and width of 10 feet as shown.



Additional information about Sam's room:

- The door has an area of 22 square feet.
- The room has 2 square windows.
- Each window opening is 2 feet by 2 feet.

Item Prompt

Part way through painting her room, Sam runs out of paint.

- She estimates that there are about 125 square feet left to paint.
- The purple paint that Sam is using is **only** available in 1-quart cans. (Assume she must buy whole cans of paint.)
- Each can of paint covers 40 square feet.

How many cans of paint does Sam **need** to buy to finish painting her room? Explain to Sam why she needs this many cans of paint.

Sample Responses

Sample Response A

$$125 / 40 = 31.02$$

She will need about 32 cans because there is about 125 square feet to paint and each can paint 40 square feet so she will need about 32 cans.

Sample Response B

4 cans because if she gets three she will have five feet left to paint.

Sample Response C

4 cans

125 divided by 40 is 3.125 to make them whole cans she would need 4 cans of paint.

Sample Response D

80

40

120

40

160

4 cans of paint.

Sample Response E

She needs to buy 4 more cans to finish painting her room.

Sample Response F

31.22 cans of paint

Rounded equals 32 cans of paint

Sample Response G	$125 - 40 = 85$ $85 - 40 = 45$ $45 - 40 = 5$ Sam by buying 3 cans you would have 5 square feet left to paint. I you get 4 you won't have any more square feet to paint. Also you would have extra paint left over for times when you need it.
Sample Response H	She need 3 cans of paint. That will equal 120, so it need a little bit more.
Sample Response I	Sam only needs 4 cans of paint. Sam you only need 4 cans of paint because you only have 125 square feet left when 4 cans of paint equals 160 which is more then enough.
Sample Response J	$125 / 40 = 3.12$ $40 \times 3 = 120$ She would need to buy 4 full cans or 16 1 quart cans. The exact amount she needs is 3.12 but since you can't have a uneven amount she has to round and get 4 cans.
Sample Response K	3 $\frac{1}{8}$ of paint cans or 4 cans and there is 5 square feet left so dividing the 5 by 40 equals $\frac{1}{8}$ and turn into $\frac{1}{8}$ because there is no need for another can