

Name _____ Period _____ Date _____

GEOMETRY: AREA AND VOLUME PERFORMANCE TASK D

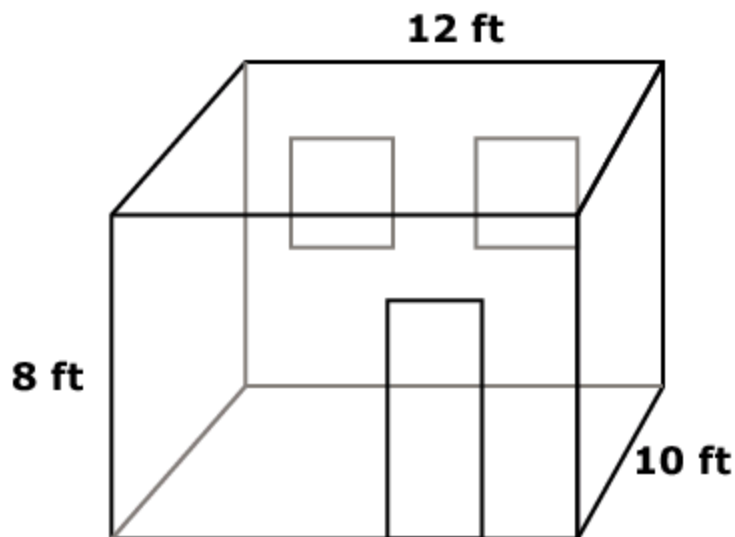
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LET'S PAINT A ROOM

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.

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What is the area, in square feet, of the ceiling?

2



Sam needs to figure out how much purple paint to buy. Calculate for her the total area, in square feet, of the four **walls**. She will **not** paint the door or windows.

3



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.

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You would also like your room painted.
Your room has 300 square feet of wall space to paint.
Sam says it took her 10 minutes to paint 25 square feet.

At this rate, if Sam painted your room, how many **hours** would it take?

5



Sam and you are going to paint your room together.

Sam takes 10 minutes to paint 25 square feet.
It takes you 5 minutes to paint 25 square feet.

Sam says, "If we paint together, then it will take 15 minutes for us to cover 50 square feet."

Give an explanation to convince Sam that she is **incorrect**.

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