Name: Key

Real World Applications Day 1 In-Class

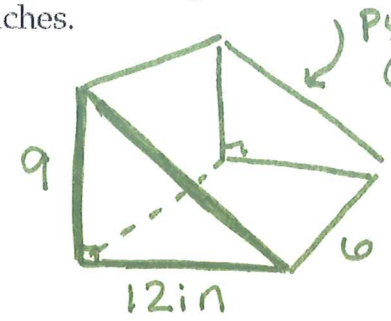
Directions: Round to the nearest tenth.

1. The United States Postal Service offers a mailer for posters or artwork that is a triangular prism. The base is an equilateral triangle with sides that measure 6 inches. Find the surface area of the mailer to the nearest tenth.

$SA = 2\frac{1}{2}\,6 \cdot 6 \sin(60) + 3(38 \times 6)$

$SA = 715.2\,in^2$

2. Find the lateral area of a triangular prism with a base that is a right triangle, with legs that measure 9 inches and 12 inches, and a height of 6 inches.

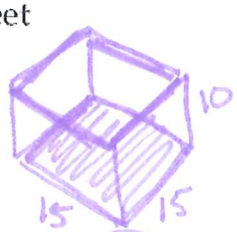


$LA = 6 \times 12 + 6 \times 9 + 6 \times 15$

$LA = 216\,in^2$

For #3 & 4 use the following information:

Suppose a gallon of paint costs \$16 and covers 400 square feet. Two coats of paint are recommended for even coverage. The room to be painted is 10 feet high, 15 feet long, and 15 feet wide.



3. The homeowner has $1\frac{1}{2}$ gallons of paint left from another project. Is this enough paint for the walls of the room? Explain.

1.5 covers only 600ft² we need to double that.

Just the walls
Walls = 4(15x10)
Walls = 600ft² x 2 coats

$SA = 1200\,ft^2$

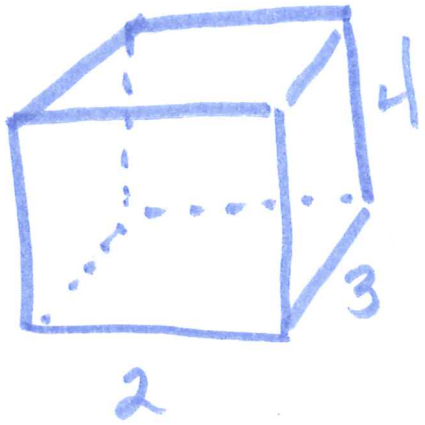
Nope...

4. If all new paint is purchased, how much will it cost to paint the walls and ceiling? Explain.

Walls = 600 x 2
Ceiling = 15x15 = 225 x 2
total to paint: 1650ft²

∴ 1650 ÷ 400
= 4.125 ⇒ 5 gallons.
& costs 5 x $16 = $80.00

5. *Application* A cord of firewood is 128 cubic feet. Margaretta has three storage boxes for firewood that each measure 2 feet by 3 feet by 4 feet. Does she have enough space to order a full cord of firewood? A half cord? A quarter cord? Explain.



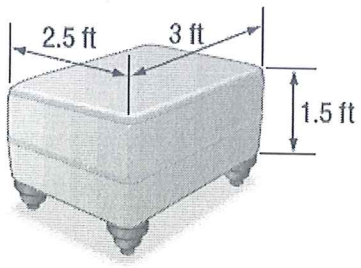
$V = (2 \times 3 \times 4)$, 3 storage boxes

$V = 24 \times 3$

$V = 72 ft^3$

Not enough to fit $128 ft^2$, but has enough for 1/2 and 1/4.

7. **FURNITURE** Nicolás wants to have an ottoman reupholstered. Find the surface area that will be reupholstered.



Not going to use the Bottom part of the ottoman.

$SA = (2.5 \times 3)$
$+ 2(1.5 \times 2.5)$
$+ 2(1.5 \times 3)$

$SA = 24 ft^2$