

Example 2

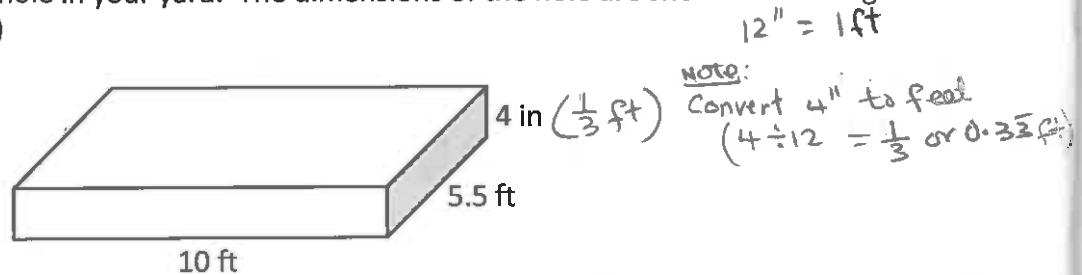
You would also like to cover your living room floor with carpet. Your living room has an area of 360 ft^2 . The carpet you like costs $\$2.80$ per square foot.

- a) You need to purchase 15% MORE carpet than you need, to account for waste when cutting/sizing the carpet to your floor. Calculate the cost of carpet for your living room, after taxes. (Taxes 13%)
- cost of carpet = area of carpet \times cost per $\text{ft}^2 \times 1.13$
- Area of carpet : $360 \text{ ft}^2 \times 1.15$ (15% more) = 414 ft^2 Area of carpet
- TOTAL COST OF CARPET = $414 \text{ ft}^2 \times \2.80×1.13
 $= \$1309.896$
 COST OF CARPET = $\boxed{\$1309.90}$

- b) The carpet installer charges $\$27.50$ per hour to install carpet. She can install 150 square feet in an hour, and she only bills full hours. How much will it cost for labour, after taxes?
- TOTAL LABOUR COST: TOTAL HOURS WORKED \times 27.50×1.13
- TOTAL HOURS WORKED = Area of living room \div Square feet per hour
 $= 360 \text{ ft}^2 \div 150 \Rightarrow 2.4$ (Round up)
 $= \boxed{3 \text{ hours}}$
- TOTAL LABOUR COST: $3 \text{ hrs} \times \$27.50 \times 1.13$
 $= \boxed{\$93.23}$

Example 3

You need to dig a rectangular hole in your yard. The dimensions of the hole are shown in the diagram below (not to scale). (Volume)



The person you are going to hire charges $\$14.50$ (taxes included) per cubic yard of dirt removed, in whole units only. Calculate the cost of removing the dirt.

Cost of removing the dirt: Volume of dirt (yd^3) \times $\$14.50$

Volume of dirt = Bh (B = area of base = length \times width)
 (h = height or depth)

$= 10 \text{ ft} \times 5.5 \text{ ft} \times \frac{1}{3} \text{ ft} \Rightarrow 18.33 \text{ ft}^3$

Convert 18.33 ft^3 to cubic yards, divide by 27 ($3' \times 3' \times 3'$)

$= 18.33 \div 27$
 $= 0.68 \text{ yd}^3 \rightarrow \text{round up} = 1 \text{ yd}^3$

Cost of removing dirt = $1 \text{ yd}^3 \times \$14.50$
 $= \boxed{\$14.50}$