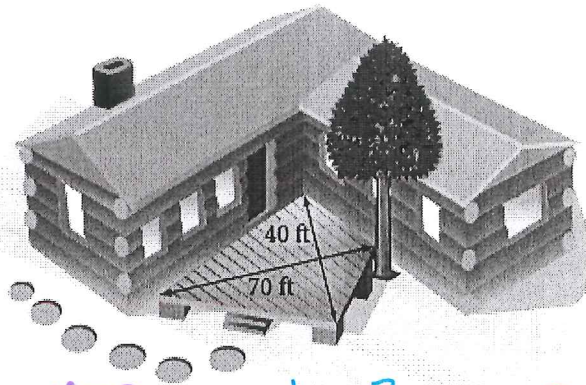


Advanced Area Application Group Assignment

1. Brendyn works at a state park. He needs to seal the redwood deck at the information center to protect the wood. He measures the deck and finds that it is a kite with diagonals of 40 feet and 70 feet. Each gallon of sealant covers 400 square feet and it must be applied every six months. How many gallon containers should he buy to protect the deck for the next three years? (Without Tax)



Area of the deck:



$2 \left(\frac{1}{2} 70 \cdot 40 \right)$
 $A_T = 1400 \text{ ft}^2$

one gallon = 400 ft²

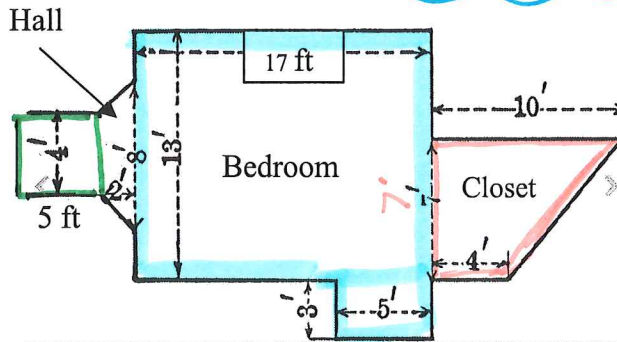
$1400 \div 400 = 3.5$ for one application

In 3 years there will be 6 applications

so, 3.5×6

21 gallons for 6 applications

2. Kyle wants to re-carpet his bedroom, closet and hallway. Find the total square footage which needs to be carpeted. The carpet costs \$10 per square YARD. How much will carpeting subtotal cost Kyle? How much will the tax cost? How much will the total be for this project (without tax and with a 6% sales tax)?



Bedroom: $3 \times 5 + 13 \times 17$

$\text{Bed} = 236 \text{ ft}^2$

closet: $\frac{1}{2} 7 (4 + 10)$

$\text{closet} = 49 \text{ ft}^2$

Hallway: $5 \times 4 + \frac{1}{2} 2 (8 + 4)$

$\text{Hall} = 32 \text{ ft}^2$

Total square feet:

$236 + 49 + 32$

$A_T = 317 \text{ ft}^2$

convert to square yards

$317 \div 9 = 35.2 \text{ yd}^2$

sub Total cost: 10×35.2

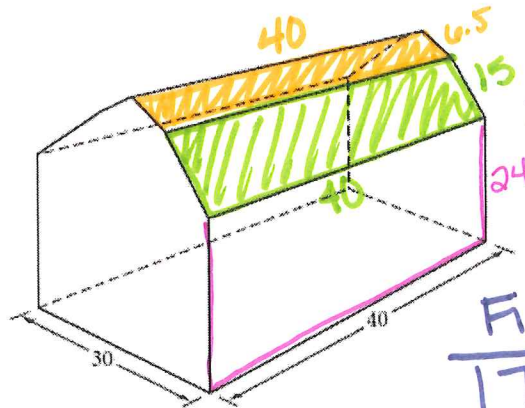
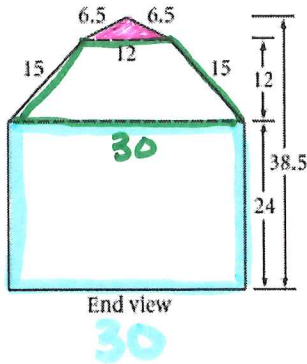
Subtotal = \$352.00

total tax: $352.00 \times .06$

tax: \$21.12

TOTAL COST = 373.12

3. Robin is planning to paint her farmhouse. She will not paint on her roof, but she will get new shingles on the roof. The paint she likes best costs \$25 per gallon and covers 250 square feet per gallon. The shingles cost \$65 per bundle, each bundle covers 100 square feet. How much will Robin spend on her farmhouse project before tax? (all measurements are in feet)



Roof Area:

$$2(15 \times 40) + 2(6.5 \times 40)$$

$$A_R = 1720 \text{ ft}^2$$

Find # of Shingles:

$$1720 \div 100 = 17.2 \text{ bundles}$$

so Buy 18 bundles

Cost for shingles:

$$18 \times 65$$

Cost = \$1170.00
Shingles

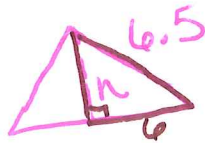
To Paint Sides
and paint ends

$$2(40 \times 20)$$

$$+ 2(30 \times 24)$$

$$+ 2\left(\frac{1}{2} 12(12+30)\right)$$

$$+ 2\left(\frac{1}{2} 12 \cdot 2.5\right)$$



$$6^2 + n^2 = 6.5^2$$

$$n = \sqrt{6.25}$$

$$n = 2.5 \text{ ft}$$

$A_T = 3894 \text{ ft}^2$
to be painted!

★ how many gallons? ★

250 ft^2 / gallon

$$3894 \div 250 = 15.576$$

so 16 gallons!

16 gallons

cost \$400.00

$$16 \times 25 = 400$$

Cost of project
before taxes:
 $1170.00 + 400.00$
Cost = \$1570.00