Problems with the homework?

Surface area of composite shapes.

7. Box

$V = V_{base} + V_{roof}$

$= lwh + \frac{lwh}{3}$

$= (15)(15)(10) + \frac{(15)(15)(4)}{3}$

$2250 + 300$

$2550\ ft^3$

$V_{cylinder}$

$V = V_{cylinder} + V_{cone}$

$= \pi r^2 h + \frac{\pi r^2 h}{3}$

$= \pi(12^2)(8) + \frac{\pi(12^2)(3)}{3}$

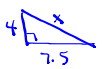
$= 1152\pi + 144\pi$

$= 1296\pi$

$= 4071.50\ ft^3$

b) Box

$SA_{box} = (15)(10)(4) = 600\ ft^2$



$x^2 = 7.5^2 + 4^2$

$= 72.25$

$x = \sqrt{72.25}$

$A_{roof} = \frac{bh}{2}(4) = 8.5$

$= \frac{(15)(8.5)}{2} \times 4$

$= 255\ ft^2$

$A_T = 255 + 600$

$= 855\ ft^2$

$Cost = \$10.49(855)$

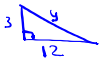
$= \$8968.95$

Cheaper

$A = A_{cylinder} + A_{cone}$

$= \pi r^2 + 2\pi rh + \pi rs$

$= \pi(12)^2 + 2\pi(12)(8) + \pi(12)(y)$



$y^2 = 3^2 + 12^2$

$= 9 + 144$

$= 153$

$y = \sqrt{153}$

$= 12.4$

$144\pi + 192\pi + 148.8\pi$

$= 484.8\pi$

$= 1523.04\ ft^2$

$Cost = \$9.25/ft^2 \times 1523.04$

$= \$14\,088.12$

Conversions

62.5 in = _____cm

$62.5\,in \times \frac{2.54\ cm}{1\ in} = 158.75\,cm$

Area

67.5 ft^2 = _____ cm^2

$67.5\,ft^2 \times \left(\frac{12\ in}{1\ ft}\right)^2 \times \left(\frac{2.54\ cm}{1\ in}\right)^2 = 62\,709.55\,cm^2$

Volume

102 409 yd^3 = _____km^3

$102\,409\,yd^3 \times \left(\frac{1\ m}{1.0936\ yd}\right)^3 \times \left(\frac{1\ km}{1000\ m}\right)^3 = 0.0000783\ km^3$

_____ cubic feet = 21 cubic meters

$$21\ m^3 \times \left(\frac{1.0936\ yd}{1\ m}\right)^3 \times \left(\frac{3\ ft}{1\ yd}\right)^3 = 741.58\ ft^3$$

Homework

1. Area conversion sheet
2. Volume conversion sheet