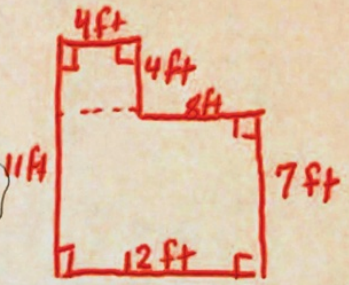
Contemp B Chapter 6 Practice Test

Name: Key

Show all work

1. Find the area and perimeter of the following figure



Perimeter = 4+4+8+7+12+11 = 46 ft

Area = $4 \cdot 4 + 7 \cdot 12 = 16 + 84 = 100\ ft^2$

2. A homeowner wishes to fertilize his yard which is triangular with sides of length 80 ft, 100 ft, and ~~1500~~ 150 ft. Each bag of fertilizer costs \$6 and can cover 120 square feet. How many bags will he need and what will the cost be?

$s = \frac{1}{2}(80 + 100 + 150) = 165$

$A = \sqrt{165 \cdot 85 \cdot 65 \cdot 15}$

$A = 3697.89 \div 120 = 30.8$

Buy 31 bags

\$186

3. Find the surface ~~area and volume of a sphere~~ with diameter 20 inches.

$SA = 4\pi \cdot 10^2 = 1256.64\ in^2$

$V = \frac{4}{3}\pi \cdot 10^3 = 4188.79\ in^3$

4. Find the volume and surface area of a rectangular prism that has sides of length 6 ft, 10 ft, and 12 ft.

$V = 6 \cdot 10 \cdot 12 = 720\ ft^3$

$S.A. = 2 \cdot 6 \cdot 10 + 2 \cdot 6 \cdot 12 + 2 \cdot 10 \cdot 12 = 504\ ft^2$

5. A rectangular plot of land in Ancient Egypt is 2400 cubits by 1800 cubits. Find the area of this plot in setats.

$2400 \times 1800 = 4{,}320{,}000\ cubits^2 \cdot \frac{1\ setat}{10000\ cubits^2} = 432\ setats$

6. A hotel is shaped like a pyramid with a square base. Its height is 532 cubits and the base has sides of length 730 cubits. Find the volume of the Luxor hotel in khar.

$V = \frac{1}{3} \cdot 730^2 \cdot 532 = 94{,}500{,}933$ cubits^3 $\cdot \frac{\frac{3}{2} \text{ khar}}{1 \text{ cubit}^3}$

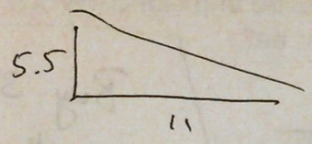
$= 141{,}751{,}400$ khar

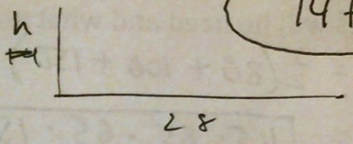
7. A 5 foot 6 inch man casts a shadow of 11 feet at the same time a tree casts a shadow of 28 feet. How tall is the tree?

$\frac{5.5}{11} = \frac{h}{28}$

$11h = 5.5 \cdot 28$

$h = 14$

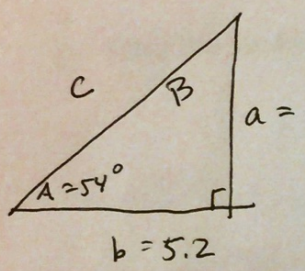




14 ft

8. Solve each right triangle:

a. $b = 5.2$, $A = 54°$



$B = 180 - 54 - 90 = 36°$

$\tan 54° = \frac{a}{5.2}$

$a = 5.2 \tan 54° = 7.16$

$7.16^2 + 5.2^2 = c^2$

$8.85 = c$

$a =$ 7.16

$c =$ 8.85

$B =$ 36°

b. $a = 19.3$, $c = 25.1$

$a^2 + b^2 = c^2$

$19.3^2 + b^2 = 25.1^2$

$b^2 = 257.52$

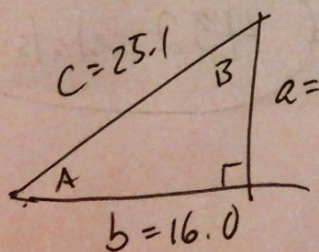
$b = 16.0$

$A =$ 50.3°

$B =$ 39.7°

$b =$ 16.0

$\tan A = \frac{19.3}{16}$



$A = \tan^{-1}\left(\frac{19.3}{16}\right)$

$A = 50.3°$

$B = 180 - 90 - 50.3 =$