2.6

Friday, August 24, 2012
1:35 PM

Note Title 8/13/2010

Formulas for Perimeter, Area, & Volume,

Square

$A = s^2$

$P = 4s$

Rectangle

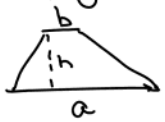
$A = lw$

$P = 2l + 2w$

Triangle

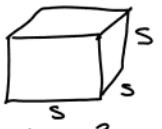
$A = \frac{1}{2}bh$

Trapezoid



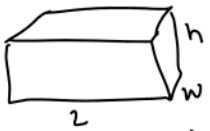
$A = \frac{1}{2}h(a+b)$

Cube



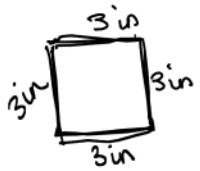
$V = s^3$

Rectangular Solid



$V = l \cdot w \cdot h$

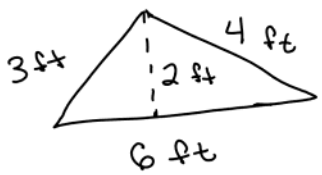
(ex) find the area & perimeter of the following



$A = s^2 = (3in)^2 = 9\,in^2$

$P = 4s = 4 \cdot 3 = 12\,in$

$= 3 + 3 + 3 + 3 = 12\,in$

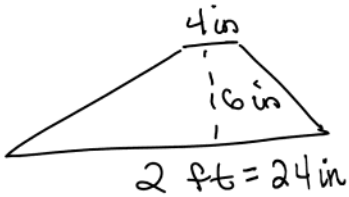


$A = \frac{1}{2}bh = \frac{1}{2} \cdot 6 \cdot 2 = 6\,ft^2$

$P = 6 + 4 + 3 = 13\,ft$

make sure same units

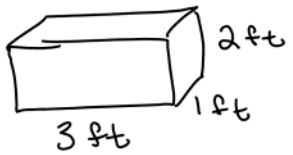
(ex.)



$A = \frac{1}{2}h(a+b)$

$= \frac{1}{2} \cdot 6(24+4) = 84\,in^2$

(ex) find Volume



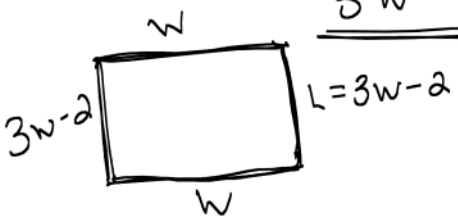
$V = l \cdot w \cdot h$

$= 3ft \cdot 1ft \cdot 2ft$

$= 6\ ft^3$

(ex) I'm building a rectangular garden. I have 36 ft of lumber, I want the length to be 2 ft less than 3 times the width. What are my dimensions?

$3 \cdot w - 2 = L$



$3w-2+w+3w-2+w=36$

$8w-4=36$

$8w=40$

$w=5ft$

$L=3\cdot5-2$

$=13\ ft$

Circles

radius - half way across circle

diameter 

diameter = 2 · radius

Formulas for Area & Circumference of circle

$A = \pi r^2$

$C = 2\pi r$

Circumference is the distance around a circle.

$\pi \approx 3.1415926\ldots$

(ex.) 

find Area & circumference.

$A = \pi r^2$
$= \pi \cdot 3^2$
$= 9\pi$ ← exact
$\approx 28.27\ldots$ ← approximate

I could give you C (or A) & ask you to find r.

(ex.) C = 15 what's r = ?

$C = 2\pi r$
$15 = 2\pi r$
$r = \frac{15}{2\pi}$ ← exact
$\approx 2.387\ldots$ ← approximate

Volume of cylinder & cone

$V = \pi r^2 h$

$V = \frac{1}{3}\pi r^2 h$

(ex.) find the volume

$V = \pi r^2 h$
$= \pi \cdot 10^2 \cdot 15$
$= 1500\pi$
$\approx 4712.38\ldots$