Tuesday, March 24, 2020

Sec 10 - 2: Areas of a Trapezoids

Some basic area formulas of pc

Area of a Rectangle: $A = b \cdot h$

Area of a Square: $A = b \cdot h = s^2$ (since b & h are sides and all sides are ≅)

Area of a Parallelogram: $A = b \cdot h$

The area of a Triangle. $A = \frac{1}{2} b \cdot h$

Area of a Trapezoid: $A = \frac{1}{2}(b_1 + b_2)h$

Area of a Trapezoid: $A = \frac{1}{2}(b_1 + b_2)h$

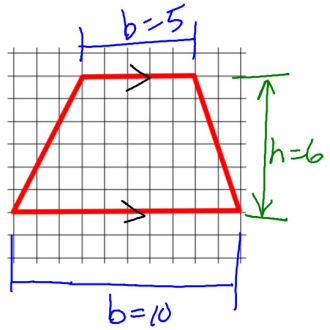
Definition of a Trapezoid: A Quadrilateral with exactly one pair of parallel sides.

Bases of a Trapezoid: the parallel sides.

Height of a Trapezoid: the perpendicular distance between the two bases.

Find the area of each trapezoid. $A = \frac{1}{2}(b_1 + b_2)h$

1.

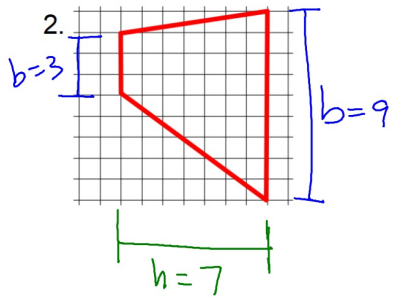


$A = \frac{1}{2}(10+5)(6)$

$A = 45$

$A = \frac{1}{2}(b_1 + b_2)h$

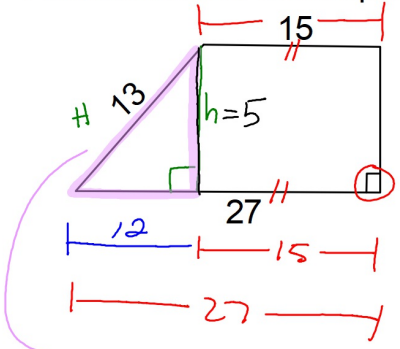
2.



$A = \frac{1}{2}(9+3)(7)$

$A = 42$

Find the area of this trapezoid.



$A = \frac{1}{2}(27+15)(5)$

$A = 105$

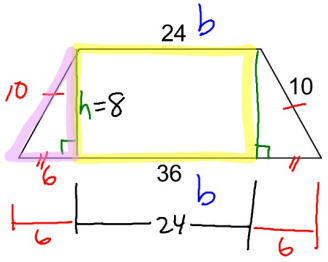
$h^2 + 12^2 = 13^2$

$h^2 = 13^2 - 12^2$

$h = \sqrt{13^2 - 12^2}$

$h = 5$

Find the area of this Isosceles Trapezoid.



$A = \frac{1}{2}(24+36)(8)$

$A = 240$

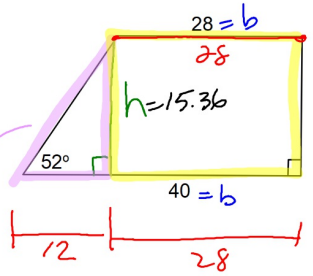
$h^2 + 6^2 = 10^2$

$h^2 = 10^2 - 6^2$

$h = \sqrt{10^2 - 6^2}$

$h = 8$

Find the area of this Trapezoid. Round to a tenth.



$A = \frac{1}{2}(28+40)(15.36)$

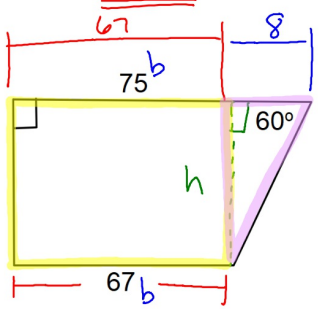
$A = 522.24$

SOHCAHTOA

$12 \cdot \tan 52° = \frac{h}{12} \cdot 12$

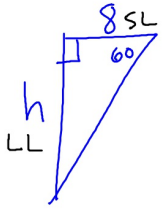
$h = 15.36$

Find the EXACT area of this Trapezoid.



$A = \frac{1}{2}(75+67)(8\sqrt{3})$

$71 \cdot 8\sqrt{3}$



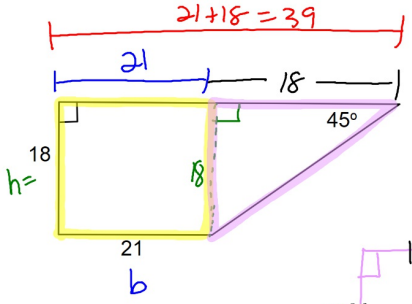
30-60-90 Δ

$LL = SL \cdot \sqrt{3}$

$LL = h = 8\sqrt{3}$

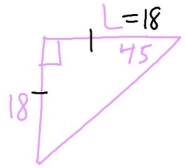
$A = 568\sqrt{3}$

Find the exact area of this Trapezoid.



$A = \frac{1}{2}(21+39)(18)$

$A = 540$



45-45-90 Δ:

Legs are ≅

$L = 18$

You can now do Practice #7 which is posted on my blog.