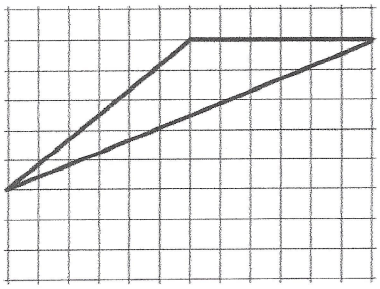
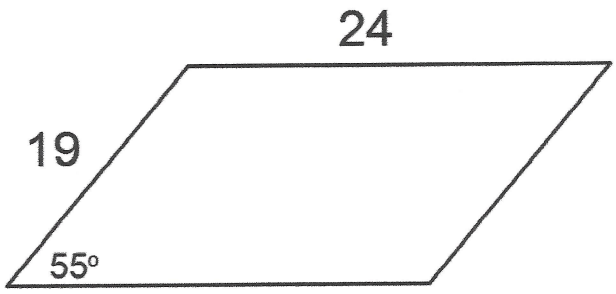
Practice #11 Geo Review Areas Monday, March 30, 2020

Find the area of each figure. Round to the nearest hundredth unless noted otherwise.

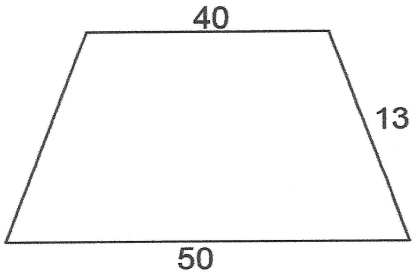
1.



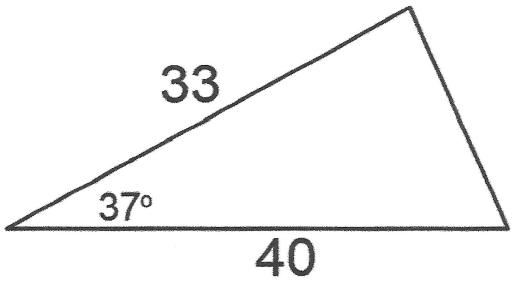
2. Parallelogram



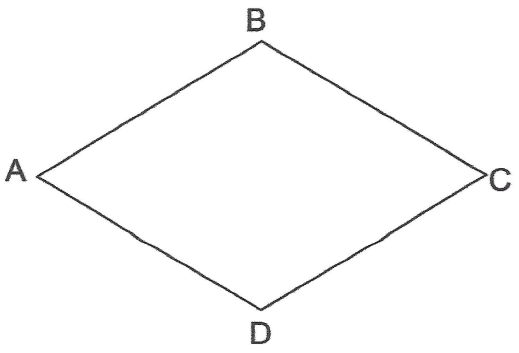
3. Isosceles Trapezoid.



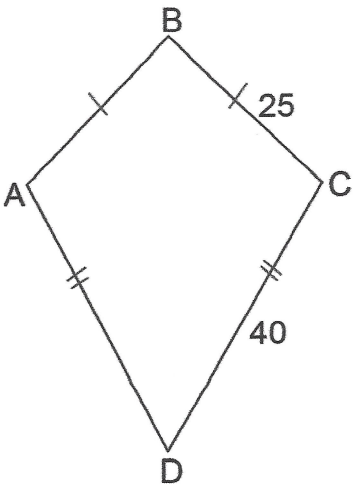
4.



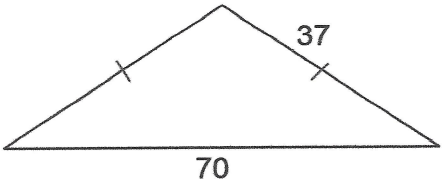
5. Rhombus
Perimeter = 164 and AC = 80



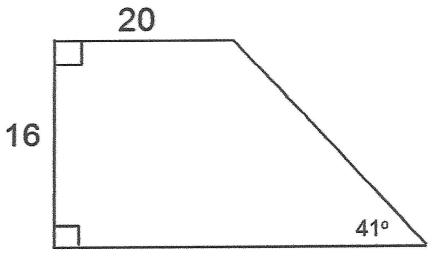
6. Kite
AC = 48



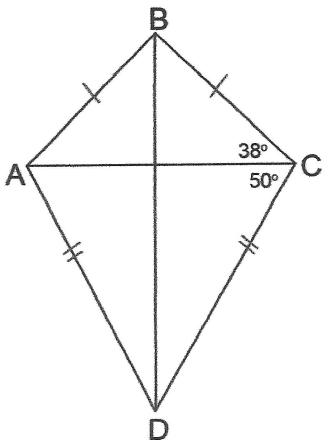
7. Isosceles Triangle.



8. Trapezoid

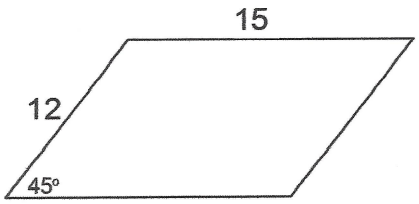


9. Kite. AC = 20

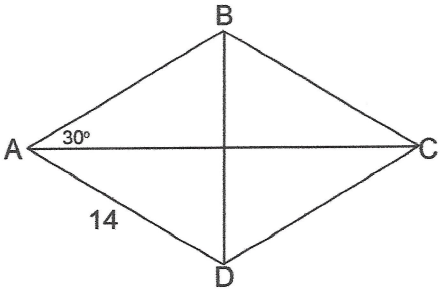


For the remaining two problems find the EXACT area. Give answer in simplified radical form. Rationalize denominators.

10. Parallelogram



11. Rhombus.

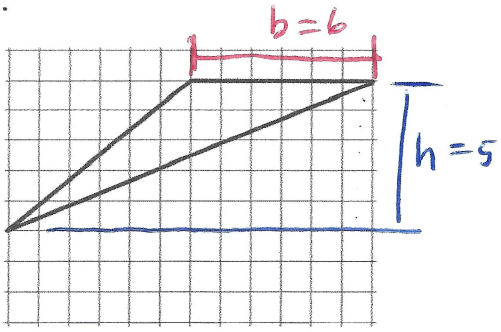


Practice #11 Geo Review Areas Monday, March 30, 2020

Find the area of each figure. Round to the nearest hundredth unless noted otherwise.

ANSWERS

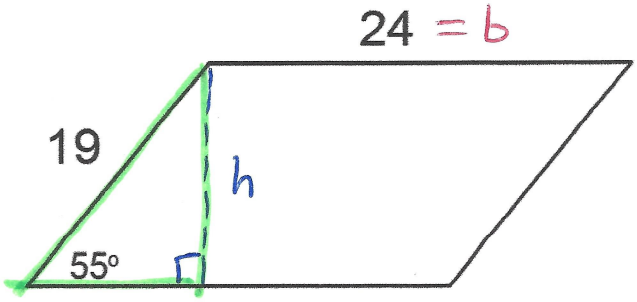
1.



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

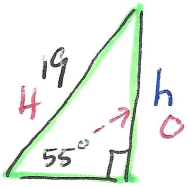
$A = 15$

2. Parallelogram



$A = bh = (24)(15.56)$

$A = 373.44$

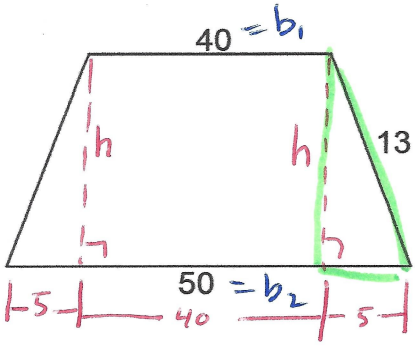


SOHCAH TOA

$19 \cdot \sin 55° = \frac{h}{19} \cdot 19$

$h = 15.56$

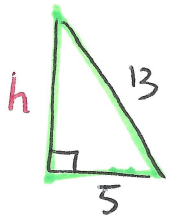
3. Isosceles Trapezoid.



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

$= \frac{1}{2}(40 + 50)(12)$

$A = 540$

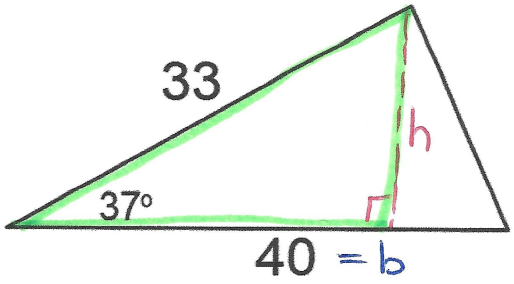


$5^2 + h^2 = 13^2$

$\sqrt{h^2} = \sqrt{13^2 - 5^2}$

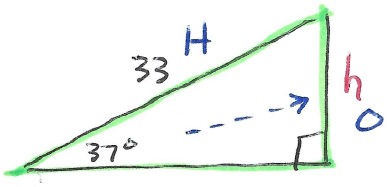
$h = 12$

4.



$A = \frac{1}{2}bh = \frac{1}{2}(40)(19.86)$

$A = 397.20$



SOHCAH TOA

$\sin 37° = \frac{h}{33}$

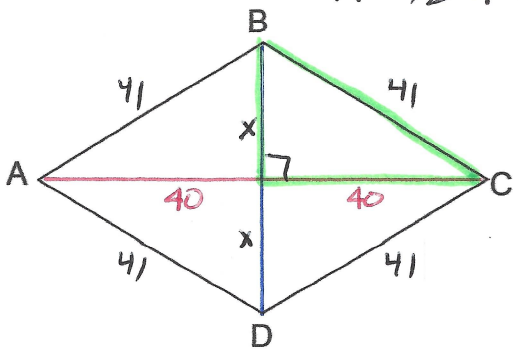
$h = 33 \sin 37°$

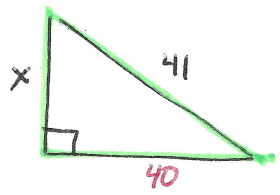
$h = 19.86$

5. Rhombus
Perimeter = 164 and AC = 80 = Horiz diag

EACH SIDE = 164 ÷ 4 = 41

$A = \frac{1}{2} d_1 \cdot d_2$





$x^2 + 40^2 = 41^2$

$\sqrt{x^2} = \sqrt{41^2 - 40^2}$

$x = 9$

Diagonals are: AC = 80

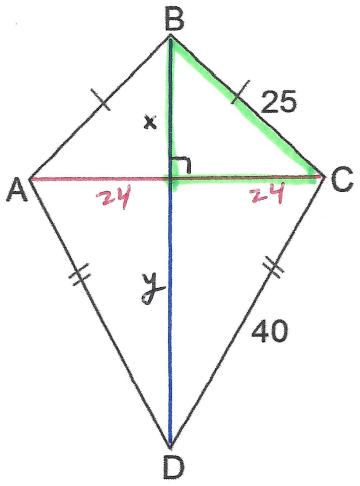
BD = 2(9) = 18

$A = \frac{1}{2}(80)(18)$

$A = 720$

6. Kite
AC = 48 = Horiz diag

$A = \frac{1}{2} d_1 \cdot d_2$



$x^2 + 24^2 = 25^2$

$\sqrt{x^2} = \sqrt{25^2 - 24^2}$

$x = 7$

$y^2 + 24^2 = 40^2$

$\sqrt{y^2} = \sqrt{40^2 - 24^2}$

$y = 32$

Diagonals are:

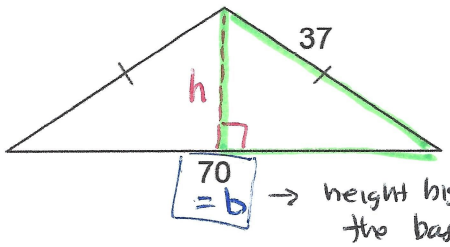
AC = 48

BD = x + y = 7 + 32 = 39

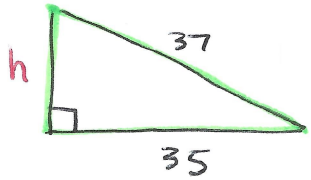
$A = \frac{1}{2}(48)(39) = 936$

7. Isosceles Triangle.

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



→ height bisects the base



$h^2 + 35^2 = 37^2$

$\sqrt{h^2} = \sqrt{37^2 - 35^2}$

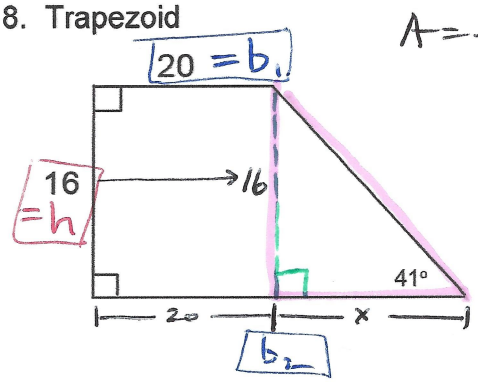
$h = 12$

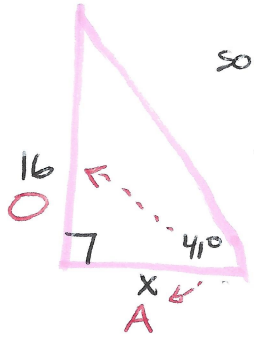
$A = \frac{1}{2}(70)(12)$

$A = 420$

8. Trapezoid

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





SOH CAH TOA

$\tan 41° = \frac{16}{x}$

$x = \frac{(16)(1)}{\tan 41°}$

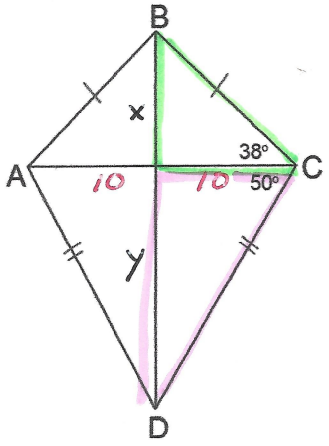
$x = 18.41$

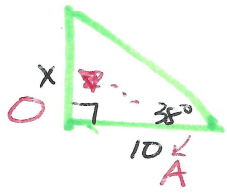
$b_2 = 20 + x = 20 + 18.41$

$b_2 = 38.41$

$A = \frac{1}{2}(20 + 38.41)16 = 467.28$

9. Kite. AC = 20 = horiz diag

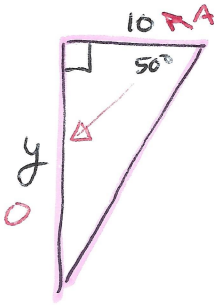




SOHCAHTOA $\tan 38° = \frac{x}{10}$

$x = 10 \tan 38°$

$x = 7.81$



SOHCAHTOA $\tan 50° = \frac{y}{10}$

$y = 10 \tan 50°$

$y = 11.92$

$A = \frac{1}{2} d_1 \cdot d_2$

$= \frac{1}{2}(20)(19.73)$

$A = 197.30$

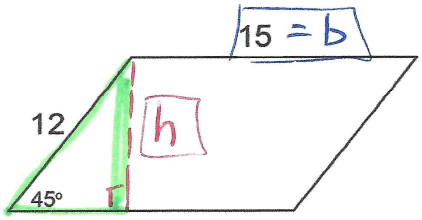
Vertical diag

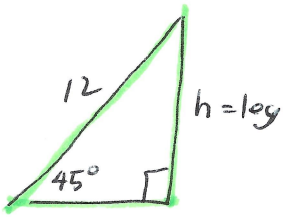
$= x + y = 7.81 + 11.92$

$= 19.73$

For the remaining two problems find the EXACT area. Give answer in simplified radical form. Rationalize denominators.

10. Parallelogram $A = b \cdot h$





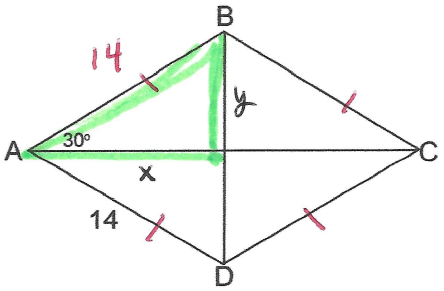
$\text{Leg} = \frac{\text{hyp}}{\sqrt{2}} = \frac{12}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}}$

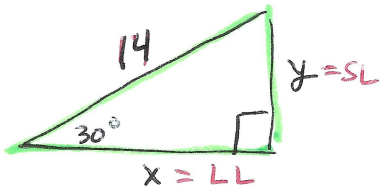
$= \frac{12\sqrt{2}}{2}$

$h = 6\sqrt{2}$

$A = (15)(6\sqrt{2}) = 90\sqrt{2}$

11. Rhombus. $A = \frac{1}{2} d_1 \cdot d_2$





$SL = \frac{1}{2}\text{hyp} = \frac{1}{2} \cdot 14 = 7$ $y = 7$

Vert diag $= 2y = 2(7)$

$= 14$

$LL = SL \cdot \sqrt{3} = 7\sqrt{3}$ $x = 7\sqrt{3}$

Horiz diag $= 2x = 2(7\sqrt{3})$

$= 14\sqrt{3}$

$A = \frac{1}{2}(14)(14\sqrt{3})$

$= 98\sqrt{3}$