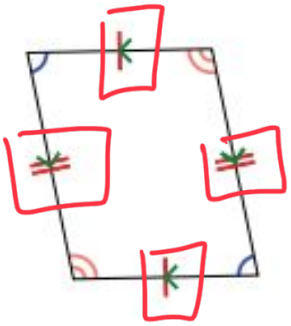
Geometry Chapter 6 Pre-Test

1.) (2.5 pts each, 5 pts total) Name each of the following shapes. Place a check beside each category of shape for which it qualifies.

a) Name of Shape: Parallelogram

This shape also fall under the category of:

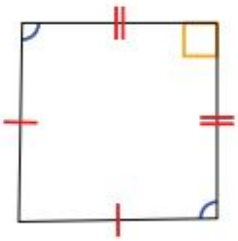
- [ ] kite
- [x] parallelogram
- [x] quadrilateral
- [ ] rectangle
- [ ] rhombus
- [ ] square
- [ ] trapezoid



b) Name of Shape:

This shape also fall under the category of:

- [ ] kite
- [ ] parallelogram
- [ ] quadrilateral
- [ ] rectangle
- [ ] rhombus
- [ ] square
- [ ] trapezoid



2.) (5 pts total) Determine the most exact name for the quadrilateral with the given vertices.

(-3, -2), (-3, 1), (0, 2), (0, -1)

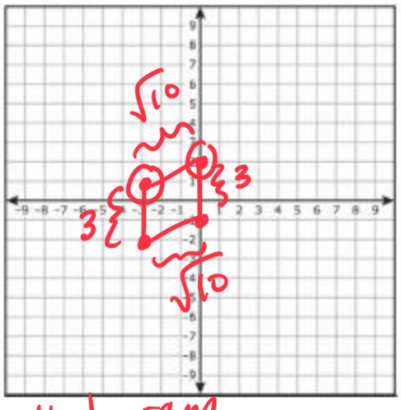
(-3,1) (0,2)

$d = \sqrt{(x_2-x_1)^2 + (y_2-y_1)^2}$

$\sqrt{(-3-0)^2 + (1-2)^2}$

$\sqrt{(-3)^2 + (-1)^2}$

$\sqrt{9+1} = \sqrt{10}$



parallelogram

3.) (2.5 pts each, 5 pts total) Draw out the indicated shape. Include congruent sides, congruent angles, and congruent diagonal lengths where necessary. Indicate all appropriate 90° angles and parallel lines as well.

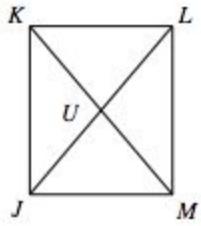
a) rhombus

b) parallelogram

4.) (5 pts each, 15 pts total) Find the value of x in each parallelogram.

a)

$KU = 3x + 3$
$UM = 4x - 4$



$KU = UM$

$3x + 3 = 4x - 4$

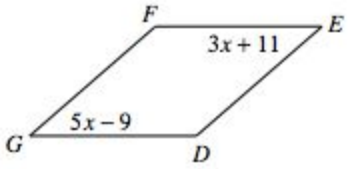
$+4 \quad +4$

$3x + 7 = 4x$

$-3x \quad -3x$

$7 = x$

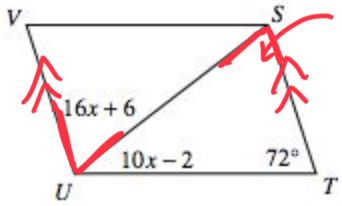
b)



$3x + 11 = 5x - 9$

Alternate Interior Angles

c)



16x+6

$16x+6+10x-2+72=180$

$26x+76=180$

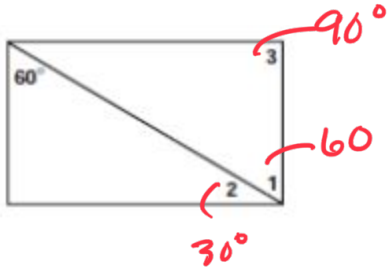
$-76 \quad -76$

$\frac{26x}{26}=\frac{104}{26}$

$x=4$

5.) (5 pts each, 15 pts total) Use your knowledge of the properties of rectangles to answer each of the following.

a) Find ∠1, ∠2, and ∠3.



90°

60

30°

∠1 = 60°

∠2 = 30°

∠3 = 90°

b) WY = 4x + 10
TX = 3x - 2

Find x.

$WY = 2TX$

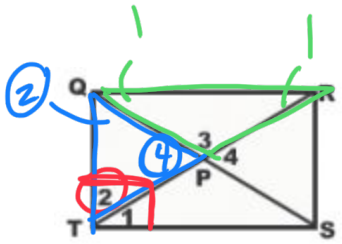
$\downarrow$

$4x+10=2(3x-2)$

c) ∠1 = 3x + 4
∠2 = 2x + 6
∠3 = 7x - 2

Find x.

$\angle 1 + \angle 1 + \angle 3 = 180°$



$\angle 1 + \angle 2 = 90$

$3x + 4 + 2x + 6 = 90$

$5x + 10 = 90$

$-10 \quad -10$

$\frac{5x}{5} = \frac{80}{5}$

$x = 16$

6.) (5 pts each, 10 pts total) Use your knowledge of the properties of rhombi to answer each of the following.

a) Find x.

WO = 4x + 8
OX = 3x + 12
OY = 5x - 3

~~WO = OX~~

$WO = OY$

$4x + 8 = 5x - 3$

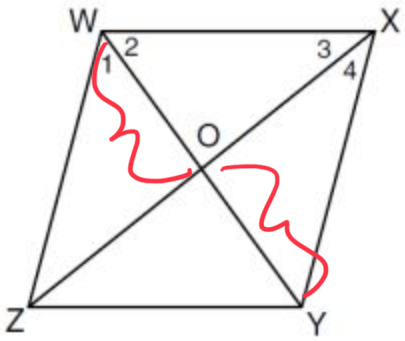
$-8 \quad -8$

$4x = 5x - 11$

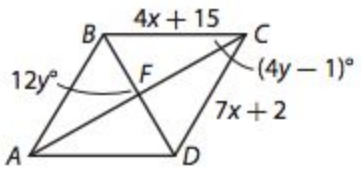
$-5x \quad -5x$

$\frac{-x}{-1} = \frac{-11}{-1}$

$x = 11$

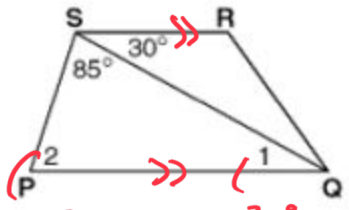


b) Find x and y.



7.) (5 pts, 10 pts total) Use your knowledge of the properties of trapezoids to answer each of the following.

a) Find ∠1 & ∠2



$85° + \angle 1 + \angle 2 = 180°$

$85° + 30° + \angle 2 = 180°$

$115° + \angle 2 = 180°$

$-115 \quad -115$

$\angle 2 = 65°$

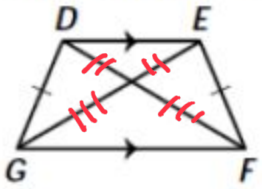
65°

30°

$\angle 1 = 30°$

b) Find x.

$DF = 4x, EG = 2x + 16$



$DF = EG$

$4x = 2x + 16$

$-2x \quad -2x$

$\frac{2x}{2} = \frac{16}{2}$

$x = 8$

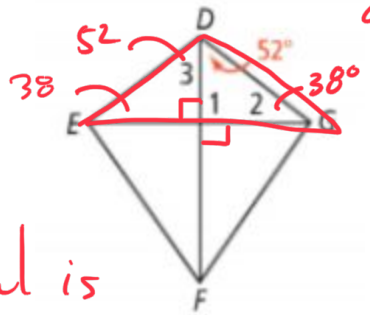
8.) (5 pts, 10 pts total) Use your knowledge of the properties of kites to answer each of the following.

a) Find the indicated angles.

∠1 = 90°

∠2 = 38°

∠3 = 52°



$90 + 52 + \angle 2 = 180°$

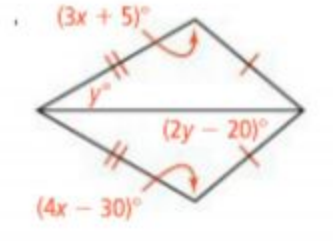
$142 + \angle 2 = 180°$

$-142 \quad -142$

$\angle 2 = 38°$

Diagonal is also angle bisector

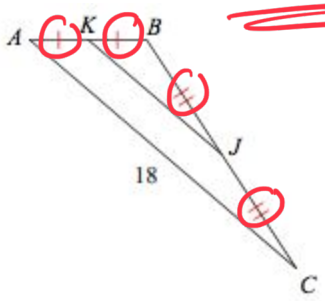
b) Find x and y.



9.) (5 pts each, 10 pts total) Find the length of variable indicated.

a) Find KJ = 9

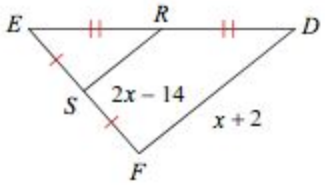
midsegment



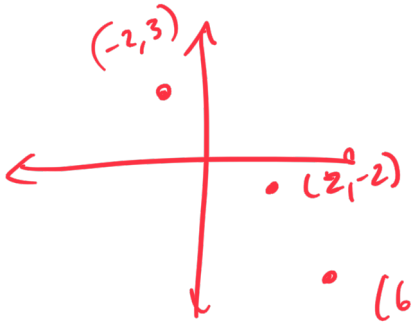
b) Find x.

$2SR = FD$

$2(2x-14) = x+2$



10.) (5 pts) Is the point (2,-2) along the line forming a perpendicular bisector of the line segment AB if point A is (-2,3) and point B is (6,-7)? Show your work.



$(-2,3) \rightarrow (2,-2)$

$(6,-7) \rightarrow (2,-2)$

use distance formula

11.) (2.5 pts each, 5 pts total) Use your knowledge of triangles to answer each of the following.

a) Order the angles within the triangle from least to greatest:

X, Y, V

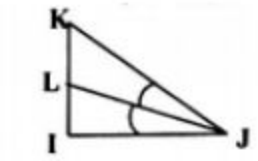
b) Can a triangle with the lengths 6 cm, 7 cm, and 14 cm exist? Clearly state why or why not.

$6+7 \neq 14$

No

12.) (5 pts) Label each of the following.

a)

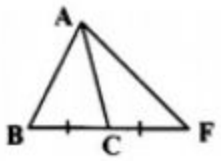


angle bisector

b)

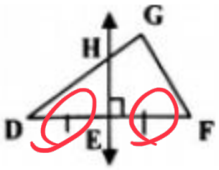
altitude (height) does not bisect

c)



median

d)



perpendicular bisector