M-G Geometry Week 28 4/24

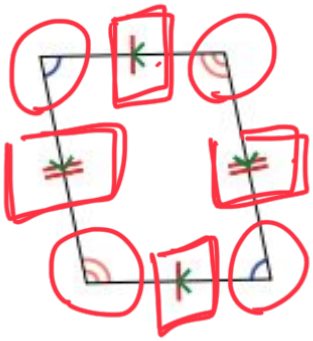
Geometry Chapter 6 Pre-Test

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:

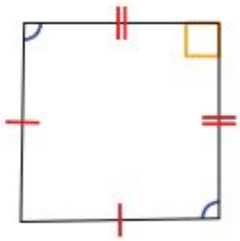
- [ ] kite
- [ ] parallelogram
- [ ] quadrilateral
- [ ] rectangle
- [ ] rhombus
- [ ] square
- [ ] trapezoid



b) Name of Shape:

This shape also fall under the category of:

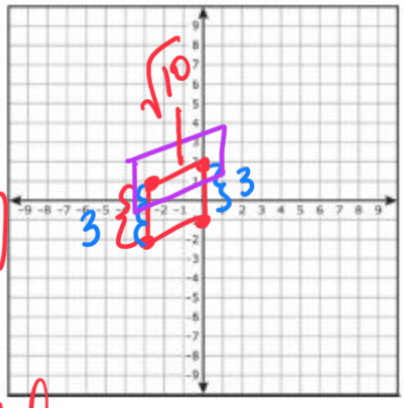
- [ ] kite
- [ ] parallelogram
- [ ] quadrilateral
- [ ] rectangle
- [ ] rhombus
- [ ] square
- [ ] trapezoid



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

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

kite
adj sides equal
parallelogram
opp sides equal
rhombus
all sides equal



3≠√10

Distance formula

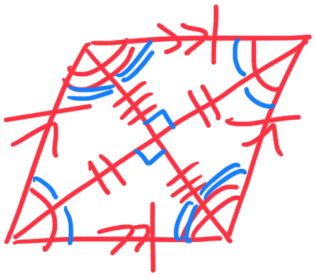
(-3,1) (0,2)

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

$\sqrt{(0-(-3))^2+(2-1)^2}$ $\sqrt{9+1}$ $=\sqrt{10}$

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

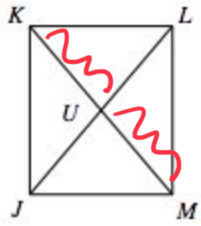


b) parallelogram

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

a)

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



$\overline{KU} = \overline{UM}$

$3x+3 = 4x-4$

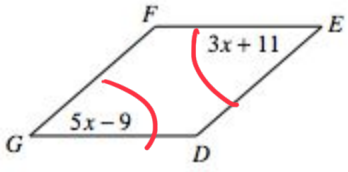
$+4 \quad +4$

$3x+7 = 4x$

$-3x \quad -3x$

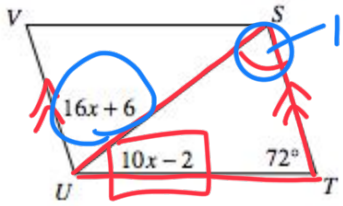
$x = 7$

b)



$3x+11 = 5x-9$

c)



Alternate Interior Angles

16x+6

$180° = 10x - 2 + 16x + 6 + 72$

$180° = 26x + 76$

$-76 \quad -76$

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

$x = 4$

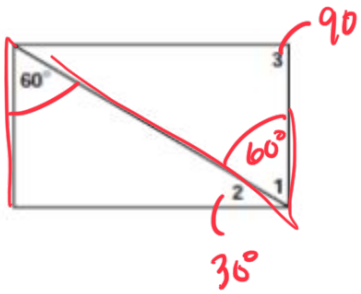
5.) (5 pts each, 15 pts total) Use your knowledge of the properties of rectangles to answer each of the following.

a) Find ∠1, ∠2, and ∠3.

∠1 = 60

∠2 = 30

∠3 = 90

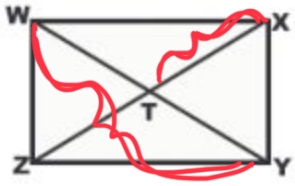


90

30°

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

Find x.



$WY = 2TX$

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

$4x + 10 = 6x - 4$

$-10 \quad -10$

$4x = 6x - 14$

$-6x \quad -6x$

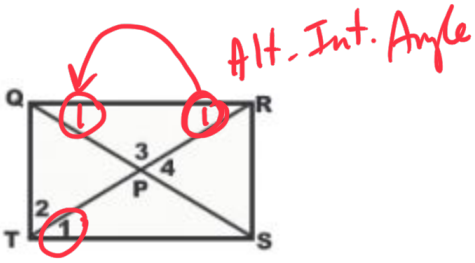
$\frac{-2x}{-2} = \frac{-14}{-2}$

$x = 7$

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

c) $\angle 1 = 3x + 4$
$\angle 2 = 2x + 6$
$\angle 3 = 7x - 2$

Find x.



$\angle 1 + \angle 2 = 90$

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

$5x + 10 = 90$

$-10 \quad -10$

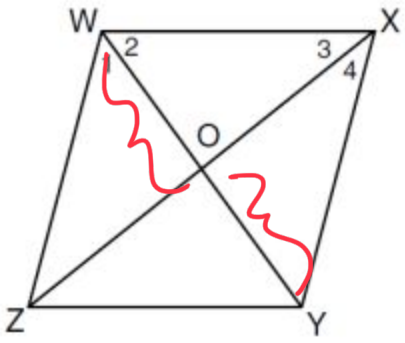
$\frac{5x}{5} = \frac{80}{5}$

$x = 16$

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



$WO = OY$

$4x+8 = 5x-3$

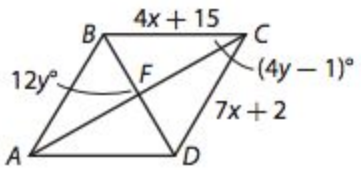
$-4x \quad -4x$

$8 = x - 3$

$+3 \quad +3$

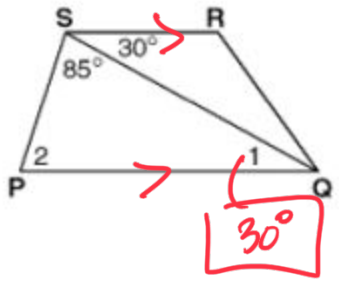
$x = 11$

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



$\angle 2 + \angle 1 + 85 = 180$

$\angle 2 + 30 + 85 = 180$

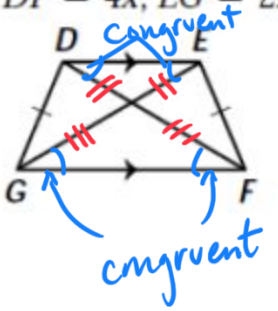
$\angle 2 + 115 = 180$

$-115 \quad -115$

$\angle 2 = 65$

b) Find x.

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



$DF = EG$

$4x = 2x + 16$

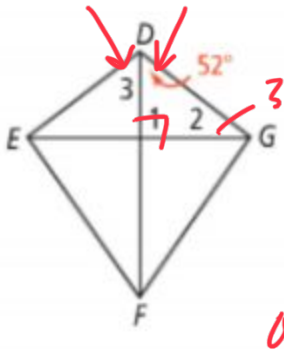
$-2x \quad -2x$

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

$x = 8$

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°

Diagonals are also angle bisectors.

Diagonal is a perpendicular bisector

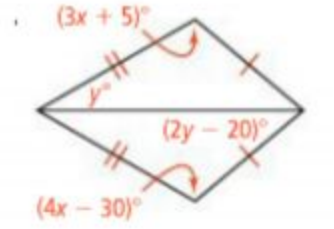
$90 + 52 + \angle 2 = 180$

$142 + \angle 2 = 180$

$-142 \quad -142$

$\angle 2 = 38$

b) Find x and y.



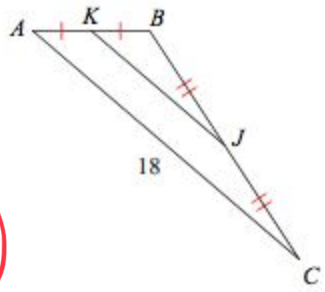
9.) (5 pts each, 10 pts total) Find the length of variable indicated.

a) Find KJ

midsegment

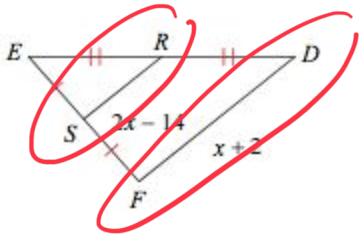
$KJ = \frac{1}{2}AC$

$KJ = \frac{1}{2}(18) = 9$

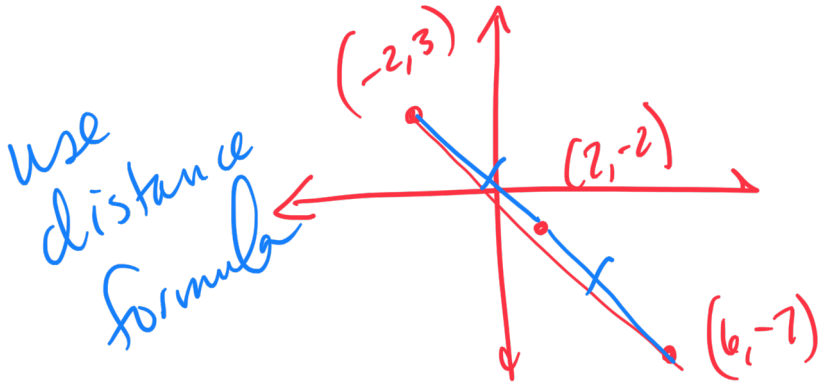


b) Find x.

$2SR = FD$



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.



use distance formula

(-2,3) → (2,-2)

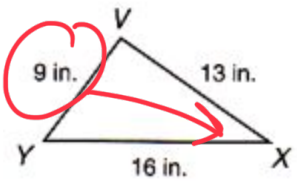
(6,-7) → (2,-2)

must be equal

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.

Not

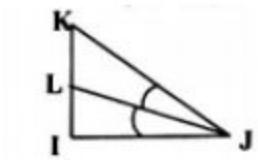
short sides > longest side

6 + 7 > 14

13 ✗ 14

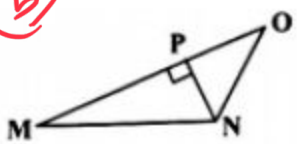
12.) (5 pts) Label each of the following.

(a)



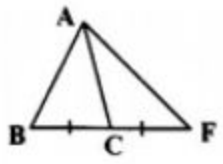
angle bisector

(b)



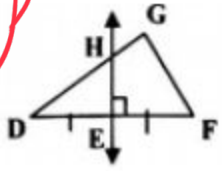
altitude

(c)



median

(d)



perpendicular bisector