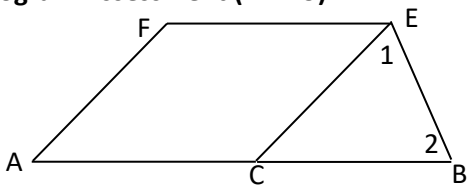
Geometry (G.CO.11)

Unit One B: Review for Special Parallelogram Assessment (HW49)

Name: _____

Date: _____ Period: _____

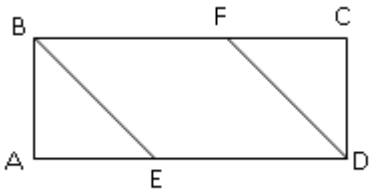
1. Given: ACEF is a rhombus; $\overline{AC} \cong \overline{BC}$
   Prove: $\angle 1 \cong \angle 2$



Statements	Reasons
1. ACEF is a rhombus	1. Given
2. $\overline{AC} \cong \overline{BC}$	2. Given
3. $\overline{AC} \cong \overline{CE}$	3. Rhombus →all sides ≅ or def of rhombus
4. $\overline{BC} \cong \overline{CE}$	4. Transitive
5. $\angle 1 \cong \angle 2$	5. Isosc Δ thm Or if sides of Δ ≅ then opp angles are too

2. Given: Parallelogram ABCD;
   $\overline{AE} \cong \overline{CF}, \overline{BF} \cong \overline{DE}$

   Prove: EBFD is a parallelogram

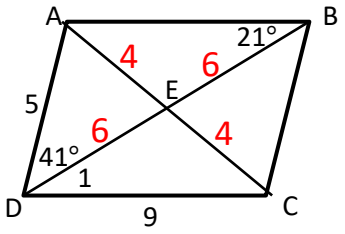


Statements	Reasons
1. Parallelogram ABCD	1. Given
2. $\overline{BF} \parallel \overline{ED}$	2. Def of ∥ gram
3. $\overline{BF} \cong \overline{DE}$	3. Given
4. EBFD is a ∥ gram	4. If one pair of opp sides is ∥ and ≅→∥ gram
OR	
1. $\overline{AE} \parallel \overline{CF}$	1. Given
2. Parallelogram ABCD	2. Given
3. $\overline{BA} \cong \overline{CD}$	3. ∥ gram → opp sides ≅
4. $\angle A \cong \angle C$	4. ∥ gram → opp ∠'s ≅
5. ΔBAE ≅ ΔDCF	5. SAS
6. $\overline{BE} \cong \overline{FD}$	6. CPCTC
7. $\overline{BF} \cong \overline{DE}$	7. Given
8. EBFD is a ∥ gram	8. If both pairs of opp sides ≅ → ∥ gram

3. ABCD is a parallelogram. AC = 8; DE = 6

a. m∠1 = 21° c. m∠ABC = 62°

b. AB = 9 d. DB = 12



4. ABCD is a parallelogram. AE = 4x – 3y; EC = 13; DE = 2x + y; BE = 19

Find x and y.

4x-3y = 13

3(2x + y = 19)

6x+ 3y = 57

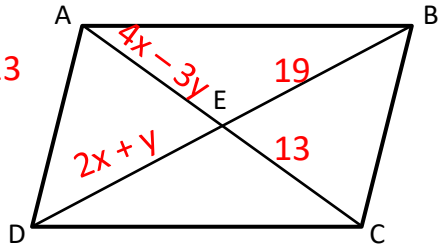
10x = 70

x = 7

28 – 3y = 13

-3y = -15

y = 5



True or False?

5. Every rhombus is a parallelogram. True

6. The diagonals of a rhombus bisect each other. True

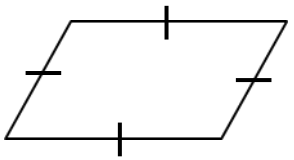
7. The diagonals of a rhombus are congruent. False

8. A rectangle and its diagonals form four congruent triangles. False

9. A rectangle and its diagonals form four isosceles triangles. True

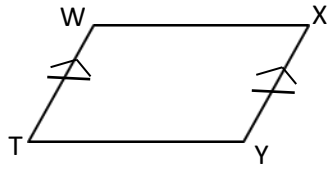
10. List all of the quadrilateral names that can correctly be used to describe these figures.

a.



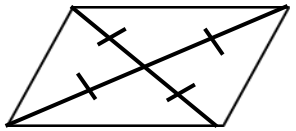
Parallelogram and rhombus

b.



Parallelogram

c.



Parallelogram and rectangle

Mark the shapes that have each property.

	Parallelogram	Rhombus	Rectangle	Square
11. The diagonals are perpendicular		X		X
12. The figure has four right angles.			X	X
13. The opposite sides are congruent.	X	X	X	X
14. The diagonals are congruent.			X	X
15. The figure has four congruent sides.		X		X
16. The diagonals bisect each other.	X	X	X	X
17. The consecutive angles are supp.	X	X	X	X
18. Each diagonal bisects opp angles.		X		X

19. Write the equation of a line perpendicular to 2x +6y = 12 and goes through (-3, -2).

$6y = -2x + 12$

$y = -\frac{1}{3}x + 2$

$m_{\perp} = 3$

$-2 = 3(-3) + b$

$-2 = -9 + b$

$7 = b$

$y = 3x + 7$

20. Find the distance between the points A(3,6) and B(4, -7). Also, find the midpoint of $\overline{AB}$.

$d = \sqrt{(4-3)^2 + (-7-6)^2}$

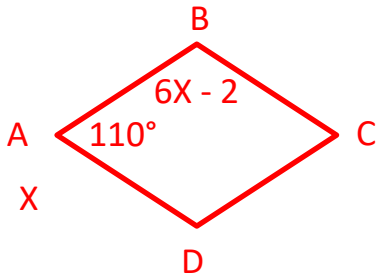
$d = \sqrt{1 + 169}$

$d = \sqrt{170}$

Midpoint = $(\frac{3+4}{2}, \frac{6+(-7)}{2}) = (\frac{7}{2}, \frac{-1}{2}) = (3.5, -0.5)$

21. Given: Rhombus ABCD.

If $m\angle A = 110$, $m\angle B = 6x - 2$, x = ?



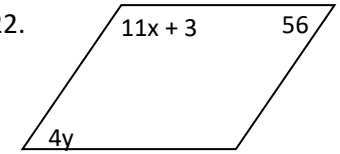
$110 + 6x - 2 = 180$

$6x + 108 = 180$

$6x = 72$

$x = 12$

22.



Given the shape is a rhombus. Find the value for x and y.

$4y = 56$

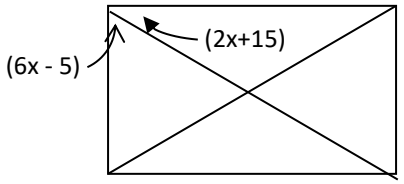
$11x + 3 + 56 = 180$

$11x + 59 = 180$

$11x = 121$

$x = 11$

23. Given the shape below is a rectangle, find the value for x.



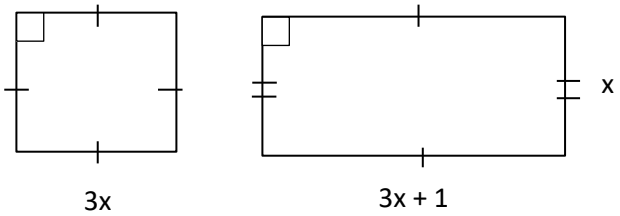
$6x - 5 + 2x + 15 = 90$

$8x + 10 = 90$

$8x = 80$

$x = 10$

24. The rectangle and square below have equal perimeters. Find the dimensions of each figure.



$4(3x) = 2x + 2(3x + 1)$

$12x = 2x + 6x + 2$

$12x = 8x + 2$

$4x = 2$

$x = ½$

Square: 1.5 X 1.5

Rectangle: 0.5 X 2.5