**Post-Test on Quadrilaterals (100 points)**

**Matching**: For problems 1-10, match the number of each shape to the correct properties. You may use each number **more than once**. Also, you **can use multiple numbers for each property** because some properties apply to more than one shape. Each problem in this section is worth 2 points each.

**Rectangle**

**Parallelogram**

**2**

**1**

**Square**

**Rhombus**

**4**

**3**

1. \_\_\_\_\_\_\_\_\_\_ Opposite sides are congruent.
2. \_\_\_\_\_\_\_\_\_\_ Opposite sides are parallel.
3. \_\_\_\_\_\_\_\_\_\_ Opposite angles are congruent.
4. \_\_\_\_\_\_\_\_\_\_ Consecutive angles are supplementary.
5. \_\_\_\_\_\_\_\_\_\_ Diagonals bisect each other.
6. \_\_\_\_\_\_\_\_\_\_ Four right angles.
7. \_\_\_\_\_\_\_\_\_\_ Diagonals are congruent.
8. \_\_\_\_\_\_\_\_\_\_ Four congruent sides.
9. \_\_\_\_\_\_\_\_\_\_ Diagonals are perpendicular.
10. \_\_\_\_\_\_\_\_\_\_ Diagonals bisect opposite angles.

**Directions:** For problems 11-21, there are various quadrilaterals with given lengths and angles. Solve for the lengths and angles for which you are asked. Keep in mind that these figures are **NOT** necessarily drawn to scale. If a length or an angle that you are solving for is not a whole number, round to the nearest tenth. **Please show your work.**

1. **The figure below is a parallelogram. If AB = 45 and AD = 29, what are the length values for BC and DC? (4 points)**

A

B

C

D

**BC = \_\_\_\_\_\_\_\_\_\_**

**DC = \_\_\_\_\_\_\_\_\_\_**

1. **The figure below is a parallelogram with diagonals. If BD = 8x-6 and BE = 2x+9, what is the length of BD and BE? (6 points)**

C

D

A

B

E

**BD = \_\_\_\_\_\_\_\_\_\_**

**BE = \_\_\_\_\_\_\_\_\_\_**

1. **The following figure is a parallelogram with diagonals. Given the following information, what is the m (6 points)**

* **m**
* **m**
* **m)**
* **m = 115**

B

C

D

E

F

(6x – 10)

(4x + 5)

(4x + 5)

**m = 115**

**m**

1. **The figure below is a rectangle with diagonals. What are the following angle measures? (12 points)**

D

E

G

74

H

F

**mDEF = \_\_\_\_\_\_\_\_\_\_ m \_\_\_\_\_\_\_\_\_\_ m \_\_\_\_\_\_\_\_\_\_**

**m \_\_\_\_\_\_\_\_\_\_ m \_\_\_\_\_\_\_\_\_\_ m\_\_\_\_\_\_\_\_\_\_**

1. **The figure below is a rectangle. Given that length AB = 3x + 4 and length DC = 8x – 6, what is the numerical length of AB? (4 points)**

3x + 4

A

B

D

C

8x - 6

**AB = \_\_\_\_\_\_\_\_\_\_**

1. **The figure below is a rectangle with diagonals. If m 54, what are the following angle measures? (12 points)**

A

B

D

54

E

C

**m­­­\_\_\_\_\_\_\_\_\_\_ m \_\_\_\_\_\_\_\_\_\_ m\_\_\_\_\_\_\_\_\_\_**

**m\_\_\_\_\_\_\_\_\_\_ m\_\_\_\_\_\_\_\_\_\_ m\_\_\_\_\_\_\_\_\_\_**

1. **The figure below is a rhombus with diagonals. If mADE = (8x-20) and the mwhat is the value of x? (4 points)**

A

B

C

D

E

(8x-20)

(5x+1)

**x = \_\_\_\_\_\_\_\_\_\_**

1. **The figure below is a rhombus with diagonals. Given that AE = X, AB = 10, and BE = 5, what is the value of the following lengths? (8 points)**

A

B

C

D

10

E

X

5

5

**BC = \_\_\_\_\_\_\_\_\_\_ DE = \_\_\_\_\_\_\_\_\_\_ AE = \_\_\_\_\_\_\_\_\_\_ BD = \_\_\_\_\_\_\_\_\_\_**

1. **The figure below is a rhombus with diagonals. Given that m and m, what is the m (6 points)**

A

B

C

D

E

(8x + 6)

(12x – 14)

**m**

1. **The following figure is a square with diagonals. What are the following lengths and angle measurements? (8 points)**

A

B

C

D

E

24

17

**m\_\_\_\_\_\_\_\_\_\_**

**m\_\_\_\_\_\_\_\_\_\_**

**CE = \_\_\_\_\_\_\_\_\_\_**

**BC = \_\_\_\_\_\_\_\_\_\_**

1. **The following figure is a square with diagonals. What is the value of x?. (4 points)**

(3x + 27)

E

F

G

H

**x = \_\_\_\_\_\_\_\_\_\_**

1. **Short Answer:** What are **TWO** of the four quadrilaterals that we discussed during this unit, and what are **TWO** real-world examples **FOR EACH** quadrilateral that you choose**?** Please write in sentence form. **(6 points)**