Quiz 2 Review

1. Define parallelogram. List the four properties that describe parallelograms.

   Define: _________________________________

   Properties:
   1. _________________________________
   2. _________________________________
   3. _________________________________
   4. _________________________________

2. For what value of \( x \) is the quadrilateral a parallelogram?

   \[ 2x + 4 \quad x + 9 \]

What property proves that the following are parallelograms?

3. _________________________________

4. _________________________________

5. _________________________________
Use properties of the given quadrilaterals to find the values of the variables.

6. Parallelogram

7. Rhombus

8. Rectangle

9. Parallelogram

10. Square

Name all quadrilaterals for which the statement is true.

11. Both pairs of opposite sides are congruent.

12. All angles are right angles.

13. All sides are congruent.

14. All angles AND all sides are congruent.

15. The diagonals are perpendicular.

16. Both pairs of opposite angles are congruent.

**ABCD is a rhombus.** $m \angle 1 = 52^\circ$, $m \angle 3 = 38^\circ$ $DB = 42$

17. Find EB.

18. Find $\angle CDA$.

19. If $m \angle 4 = (4x - 10)^\circ$, solve for $x$. 
WXYZ is a square. \( ZY = 30 \)

20. Find \( m\angle 3 \).

21. Find \( XQ \).

22. Find \( m\angle 5 \).

GHIJ is a rectangle. \( JH = 20, m\angle 2 = 70^\circ \)

23. Find \( m\angle 1 \).

24. Find \( GI \).

25. Find \( JM \).

Coordinate Proof. Verify the following quadrilaterals algebraically.

26. Quadrilateral LMNP has vertices \( L(-2,0), M(2,1), N(3,-2), \) and \( P(-1,-3) \). Determine the most precise classification of LMNP: a parallelogram, rectangle, rhombus or square. Then write an explanation to justify your answer. 
    Circle your explanation.
27. Quadrilateral ABCD has vertices A(2,1), B(6,3), C(5,5), and D(1,3). Determine the most precise classification of BCDE: a parallelogram, rectangle, rhombus, or square. Then write an explanation to justify your answer.

Circle your explanation.