Quadrilateral Worksheet   Name ___Key___

1. A quadrilateral is a __figure polygon__ with __4__ sides.

2. Perpendicular means at _a right angle_ or at _a 90°_ degrees.

3. Two types of quadrilaterals with right-angled vertices are _rectangle_ and _square_.

4. A parallelogram has two pairs of sides that are _parallel_ and _congruent_, and opposite angles that are _congruent_.

6. A rhombus is a special type of parallelogram because it has _4 equal_ sides.

9. The quadrilaterals that have diagonals bisecting each other perpendicularly are _rhombus_, _square_, and _kite_.

10. A _square_ is always a rectangle, because a _square_ is a special type of rectangle that has four equal sides.

11. A rectangle is not always a square, because a rectangle does not necessarily have sides that are all _congruent_.

14. A _Kite_ is a quadrilateral that has two pairs of equal length sides and one pair of opposite equal angles.

15. A trapezoid is a quadrilateral having _one_ pair(s) of parallel sides.

ALWAYS, SOMETIMES, or NEVER.

1. A parallelogram is _Always_ a quadrilateral.
2. A rectangle is _never_ a trapezoid.
3. A rhombus is _always_ a parallelogram.
4. A square is _always_ a quadrilateral.
5. A rectangle is _sometimes_ a rhombus. (if a square) or Never
6. A rhombus is _sometimes_ a square.
7. A trapezoid is _sometimes_ isosceles.
8. A rectangle is _sometimes_ a square.
9. A square is _always_ a rectangle.
10. A trapezoid is _never_ a parallelogram.
11. A rectangle _always_ has four right angles.
12. A rhombus _sometimes_ has four right angles. (if it's a square)
13. A quadrilateral is _never_ a pentagon.
14. A parallelogram is _sometimes_ equilateral. (square + rhombus)
15. A trapezoid is _never_ equilateral.

State whether the information given about quadrilateral *SMTP* is sufficient
to prove that it is a parallelogram.

yes, with AIA

1. $\angle SPT \cong \angle SMT$ **no**
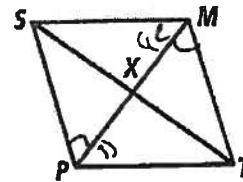
2. $\angle SPX \cong \angle TMX, \angle TPX \cong \angle SMX$

3. $\overline{SM} \cong \overline{PT}, \overline{SP} \cong \overline{MT}$ **yes**

4. $\overline{SX} \cong \overline{XT}, \overline{SM} \cong \overline{PT}$ **NO**

5. $\overline{PX} \cong \overline{MX}, \overline{SX} \cong \overline{TX}$ **yes**

6. $\overline{SP} \cong \overline{MT}, \overline{SP} \parallel \overline{MT}$ **yes**

Classify each quadrilateral by its most precise name.

5. **parallelogram**

6. **rectangle**

7. **Isosceles trapezoid**

8. **rhombus**

9. **trapezoid**

10. **Kite**

11. **rectangle**

12. **square**

Decide whether the quadrilateral is a parallelogram. Explain your answer.

13. **yes, diagonals bisect**

14. **No, Not enough**

15. **Not enough**

16. **yes. opp sides ≅**

17. **yes, AIA**

18. **Not enough**

19. **yes. opp sides ∥ & ≅ one set of**

20. **Not enough**

Answer the following exercises *All, Some,* or *No.*

1. **Some** rectangles are squares.

2. **NO** isosceles trapezoids are parallelograms.

3. **Some** trapezoids are isosceles trapezoids.

4. **All** rhombuses are quadrilaterals.

5. **NO** kites are parallelograms.

6. **SOME** rhombuses are squares.

7. **NO** squares are triangles.

8. **Some** rectangles are regular quadrilaterals.

9. **All** squares are quadrilaterals, rectangles, rhombuses, and parallelograms.

10. **Some** quadrilaterals have four congruent angles.

11. **Some** rectangles are rhombuses.

12. **NO** trapezoids are parallelograms.

13. **NO** trapezoids have both pairs of opposite sides parallel.

14. **SOME** trapezoids have a pair of congruent sides.

15. **All** kites have two pairs of congruent sides.

16. **All** squares are regular quadrilaterals.

17. **NO** kites have congruent diagonals.

18. **NO** trapezoids have four congruent sides.

19. **Some** parallelograms have four congruent angles.

20. **All** isosceles trapezoids have one pair of opposite congruent sides.