

Quadrilaterals—Always, Sometimes, Never

1. A square is a rectangle.
 - Always, a square is a type of rectangle.
2. A rhombus is a square.
 - Sometimes, if a rhombus has 90 degree angles.
3. A parallelogram is a rectangle.
 - Sometimes, if the parallelogram has 90 degree angles.
4. A parallelogram has congruent diagonals.
 - Sometimes, if it is also a rectangle or square.
5. A parallelogram is a quadrilateral.
 - Always, all parallelograms have 4 sides.
6. A rhombus has congruent diagonals.
 - Sometimes, if the rhombus is also a square.
7. A trapezoid has congruent diagonals.
 - Sometimes, only if it is isosceles.
8. A trapezoid has opposite sides parallel.
 - Never, only one set of opposite sides are parallel.
9. A trapezoid has legs congruent.
 - Sometimes, only if it is isosceles.
10. A rectangle has perpendicular diagonals.
 - Sometimes, only if it is also a square.
11. A parallelogram has diagonals that bisect each other.
 - Always, parallelograms always have diagonals that bisect each other.
12. A parallelogram has diagonals that bisect angles.
 - Sometimes, only if the parallelogram is also a rhombus.
13. A rectangle is a square.
 - Sometimes, only if all the sides are congruent.
14. A square is a rhombus.
 - Always, a square is a special type of rhombus.
15. A square has opposite angles congruent.
 - Always, all parallelograms have opposite sides congruent.
16. A rhombus is a rectangle.
 - Sometimes, only if it is a square.
17. A rectangle is a rhombus.
 - Sometimes, only if it is a square.
18. A trapezoid is a parallelogram.
 - Never, parallelograms have both pairs of opposites sides parallel and a trapezoid only has one pair of opposite sides parallel.