

Quadrilateral Properties
Always, Sometimes, Never

Name _____

Date _____ Pd _____

Using your knowledge of the properties of quadrilaterals, complete each sentence with "always", "sometimes", or "never". If you answer "sometimes", describe the cases in which the property is true.

1. A square is _____ a rhombus.	2. A rhombus is _____ a square.
3. A trapezoid is _____ a rectangle.	4. The diagonals of a rhombus are _____ congruent.
5. A quadrilateral with one pair of sides congruent and one pair parallel is _____ a parallelogram.	6. A rectangle _____ has consecutive sides congruent.
7. The diagonals of a rhombus _____ bisect each other.	8. A rectangle _____ has perpendicular diagonals.
9. The diagonals of a parallelogram are _____ perpendicular bisectors of each other.	10. The diagonals of a parallelogram _____ bisect the angles of the parallelogram.
11. A trapezoid _____ has a pair of congruent sides.	12. The diagonals of a kite are _____ perpendicular.
13. The diagonals of a parallelogram _____ bisect each other.	14. The consecutive angles of a rectangle are _____ congruent and supplementary.
15. Consecutive angles in a parallelogram are _____ congruent.	16. A diagonal _____ divides a square into two isosceles right triangles.

Using your knowledge of the properties of quadrilaterals, complete the following table. In each square, either write "yes" (to mean always) or "no" (to mean not always). So for this part, you will write "no" if the property is either sometimes true or never true.

	Parallelogram	Rhombus	Rectangle	Square	Isosceles Trapezoid	Kite
Both pairs opposite sides are parallel						
Both pairs opposite sides are congruent						
Both pairs opposite angles are congruent						
Diagonals bisect each other						
Diagonals are perpendicular						
Diagonals are congruent		No				
Exactly one line of symmetry						Yes
Exactly two lines of symmetry						
More than two lines of symmetry						

Answer each of the following questions using your knowledge of parallelograms.

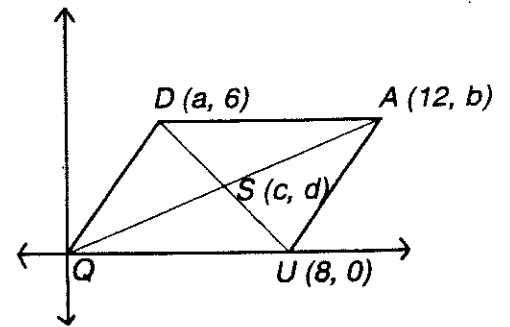
$QUAD$ is a parallelogram. Find a , b , c , and d . Show your work.

$a = \underline{\hspace{2cm}}$

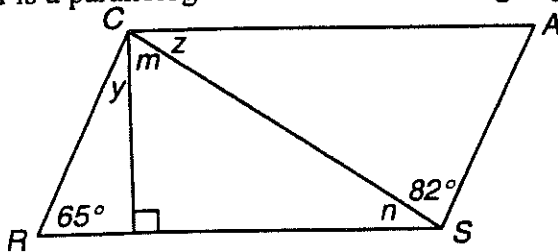
$b = \underline{\hspace{2cm}}$

$c = \underline{\hspace{2cm}}$

$d = \underline{\hspace{2cm}}$

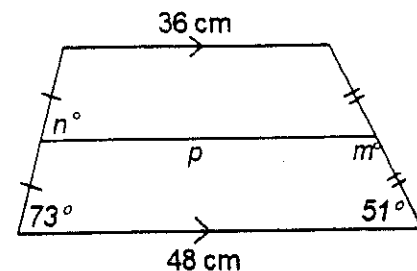


$CRSA$ is a parallelogram. Find each missing angle.



$m = \underline{\hspace{2cm}}$ $n = \underline{\hspace{2cm}}$ $y = \underline{\hspace{2cm}}$ $z = \underline{\hspace{2cm}}$

Find m , n , and p in the following trapezoid.



$m = \underline{\hspace{2cm}}$ $n = \underline{\hspace{2cm}}$ $p = \underline{\hspace{2cm}}$