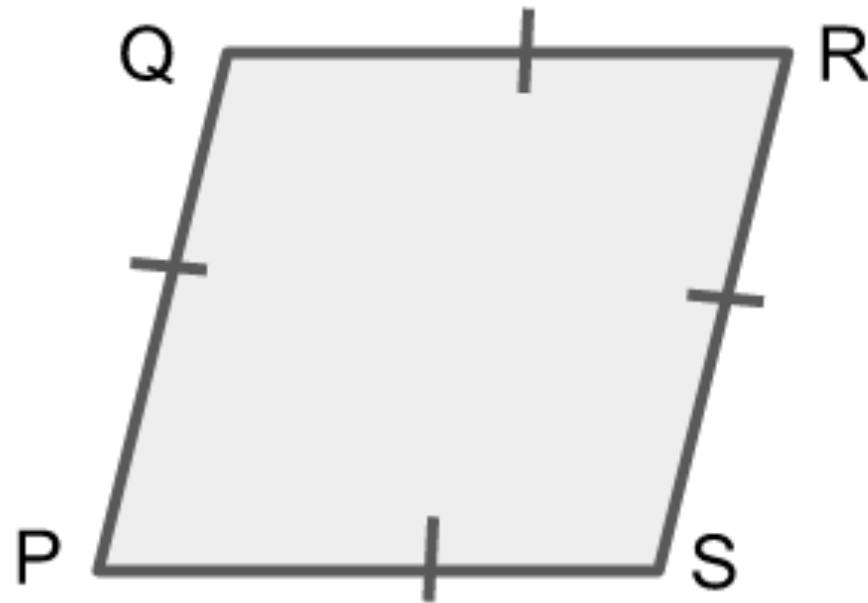


Properties of Rhombuses, Rectangles, and Squares

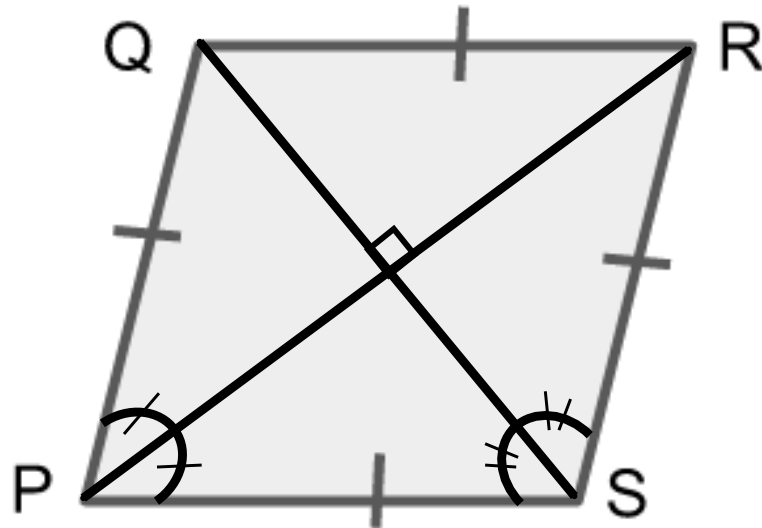
Rhombuses

If PQRS is a rhombus, then $\overline{PQ} \cong \overline{RS} \cong \overline{QR} \cong \overline{PS}$



Theorem 8.11

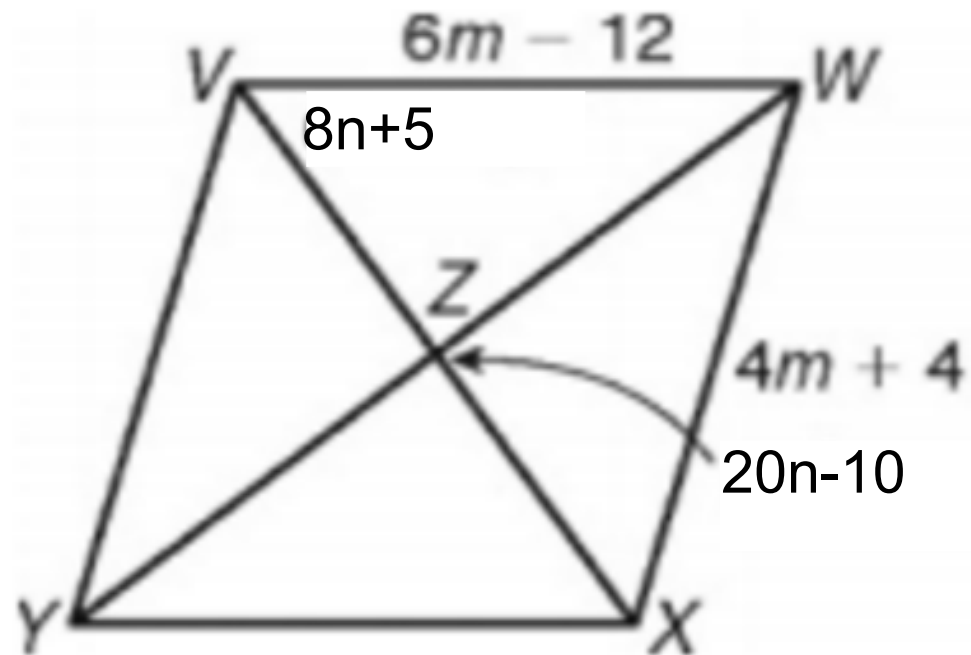
A parallelogram is a rhombus if and only if its diagonals are perpendicular.



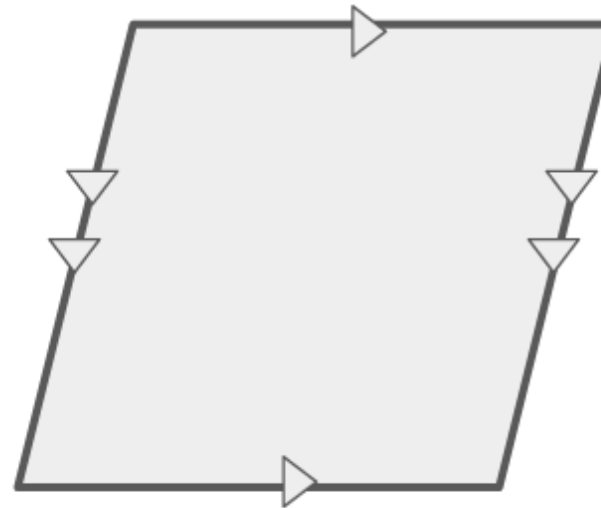
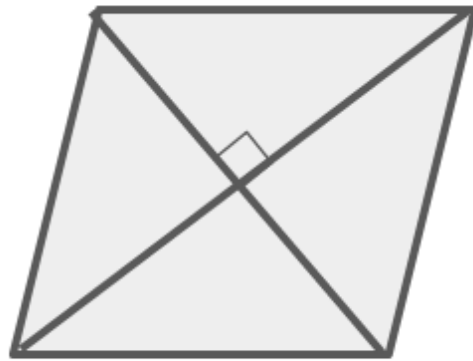
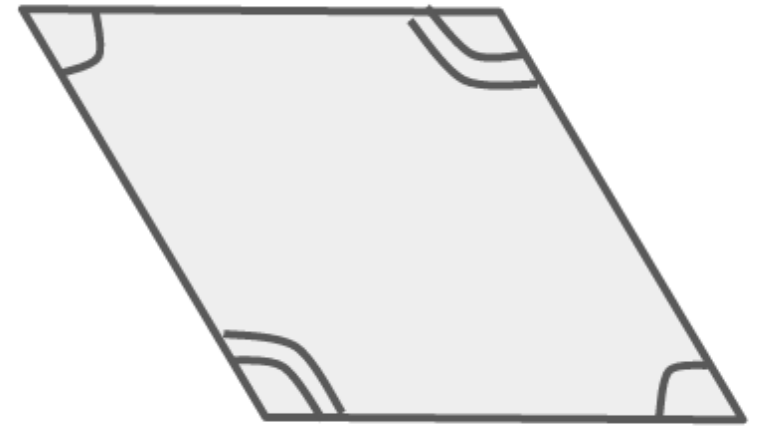
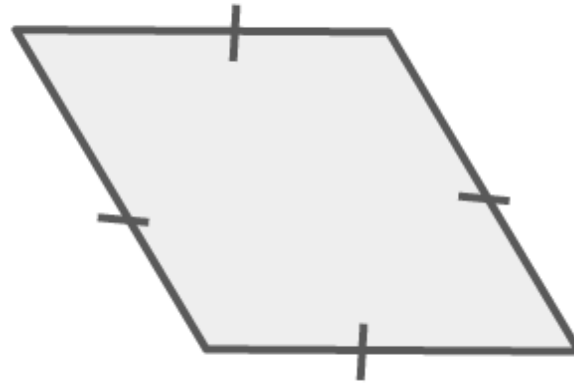
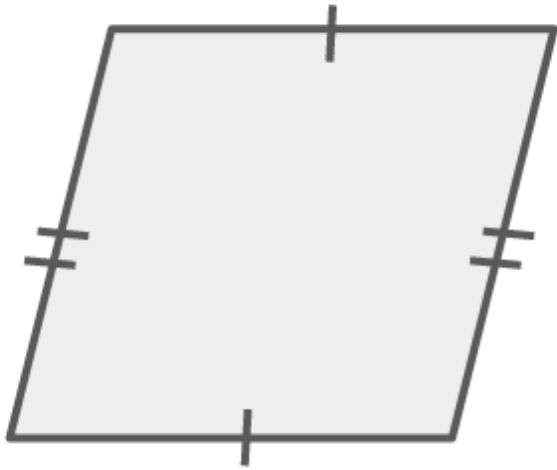
Theorem 8.12

A parallelogram is a rhombus if and only if its diagonals bisect a pair of opposite angles.

VWXY is a rhombus. Find the missing sides and angles.



Rhombus or Parallelogram?



Rectangles

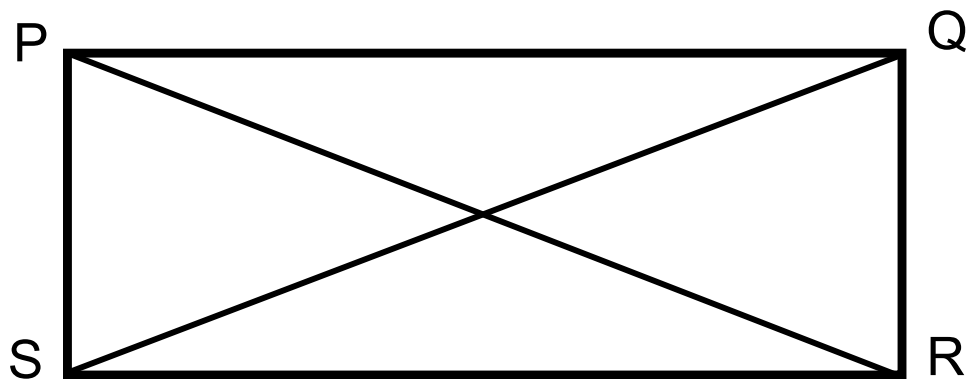
A rectangle is a parallelogram with four right angles.



Theorem 8.13

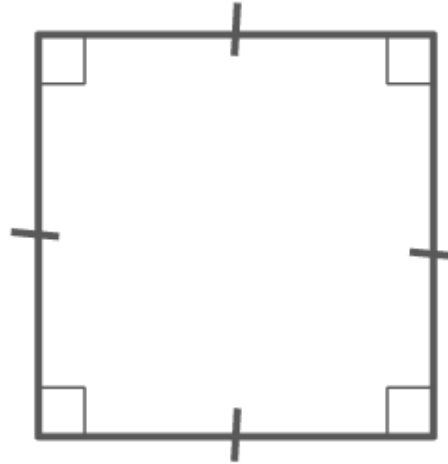
A parallelogram is a rectangle if and only if its diagonals are congruent.

If PQRS is a rectangle, then $\overline{QS} \cong \overline{PR}$



Squares

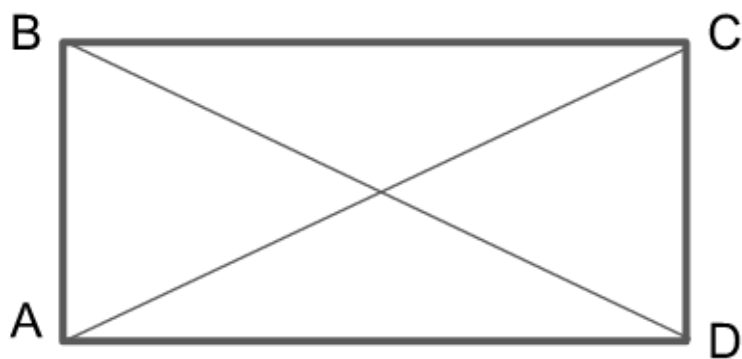
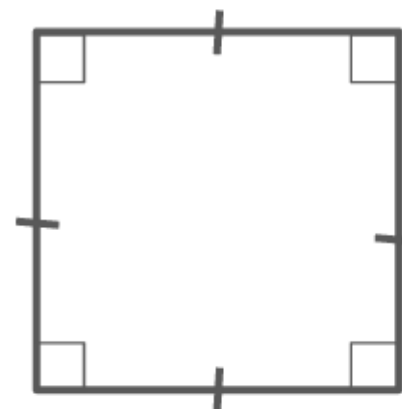
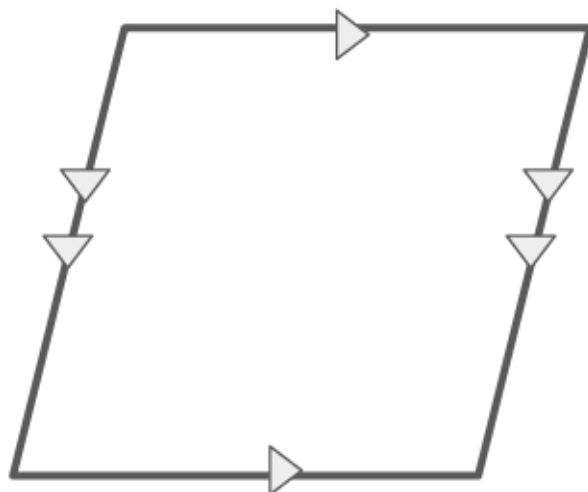
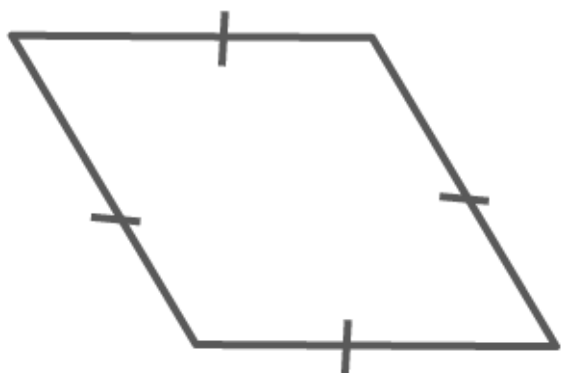
A square is a parallelogram with four congruent sides and four right angles.



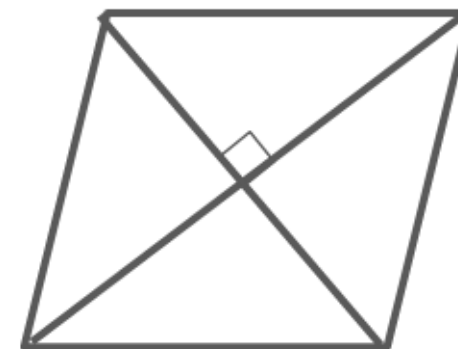
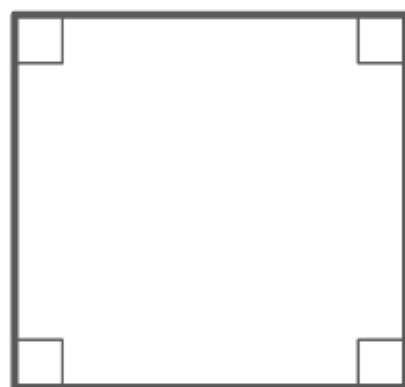
Square Corollary

A quadrilateral is a square if and only if it is a rhombus *and* a rectangle.

Parallelogram, Rectangle, Rhombus, or Square?



$\overline{AC} \cong \overline{DB}$



How can we organize this information?

Games

Bluff

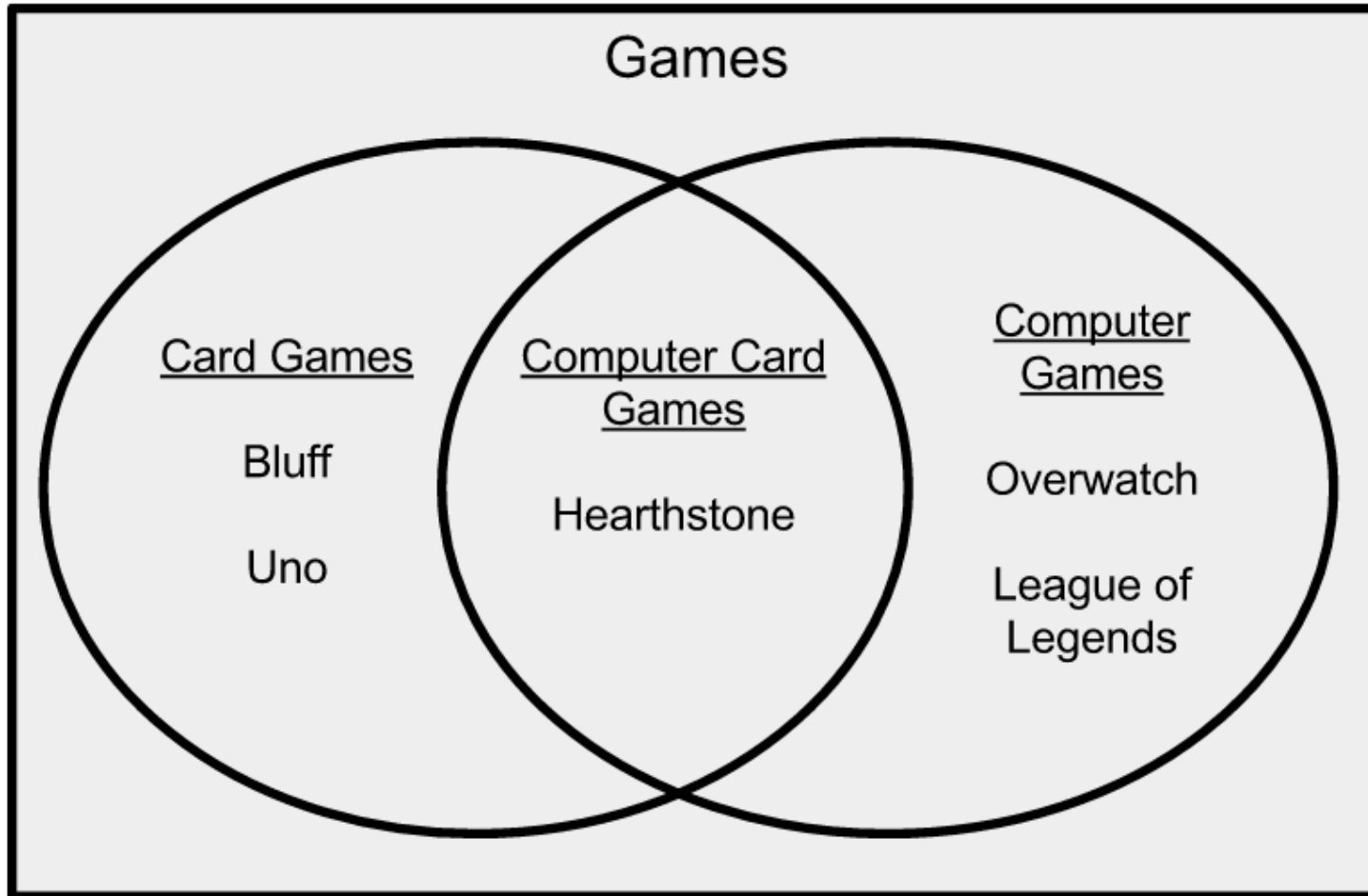
Uno

Overwatch

League of Legends

Hearthstone

Venn Diagrams:



Bluff

Uno

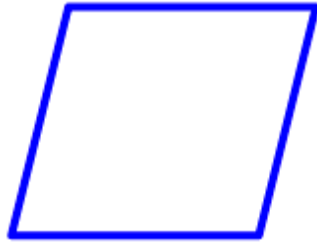
Overwatch

League of Legends

Hearthstone

Rhombuses:

Opposite sides are parallel
Four congruent sides



Parallelograms:

Opposite sides are parallel



Rectangles:

Opposite sides are parallel
Four right angles



Squares:

Opposite sides are parallel
Four right angles
Four congruent sides

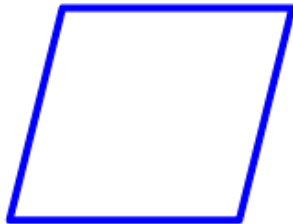




Parallelograms:
Opposite sides are parallel

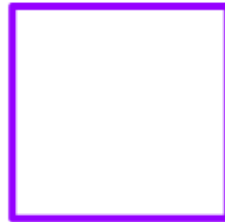
Rhombuses:

Opposite sides are parallel
Four congruent sides



Squares:

Opposite sides are parallel
Four right angles
Four congruent sides



Rectangles:

Opposite sides are parallel
Four right angles



