

Day 10 - 6.5 Notes: Proving Special Parallelograms

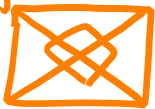
Target: Show algebraically that a quadrilateral is a rectangle, rhombus, or square.

✓ How do you know a parallelogram is a rectangle?

1. All $\angle S \cong (90^\circ)$ and 2. Diags \cong

✓ How do you know a parallelogram is a rhombus?

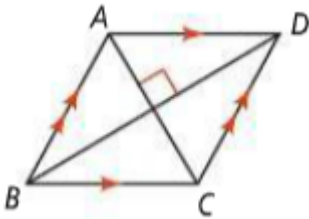
1. Diags \perp 2. All Sides \cong 3. Diags bisect $\angle S$



✓ How do you know a parallelogram is a square?

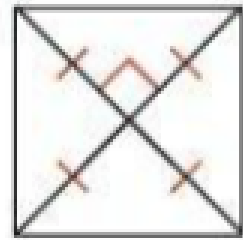
If it satisfies ALL the properties of Rectangle, Rhombus, and Parallelogram

Let's Practice! Determine whether the parallelogram is a rectangle, rhombus or square. Justify why!



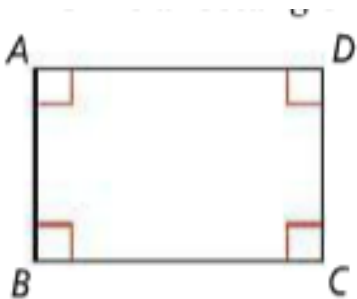
1. Rhombus

Why? Diags \perp



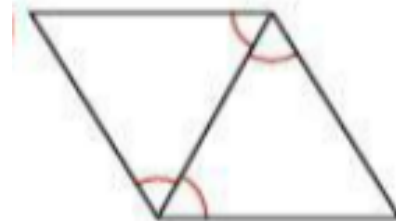
2. Square

Why? Diags \perp AND \cong
(Rhom) (Rect)



3. Rectangle

Why? All $\angle S \cong$

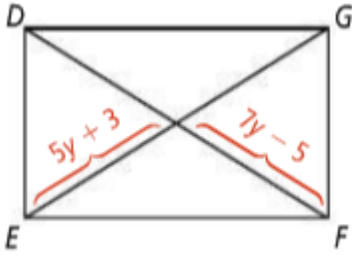


4. Rhombus

Why? Diags bisect $\angle S$

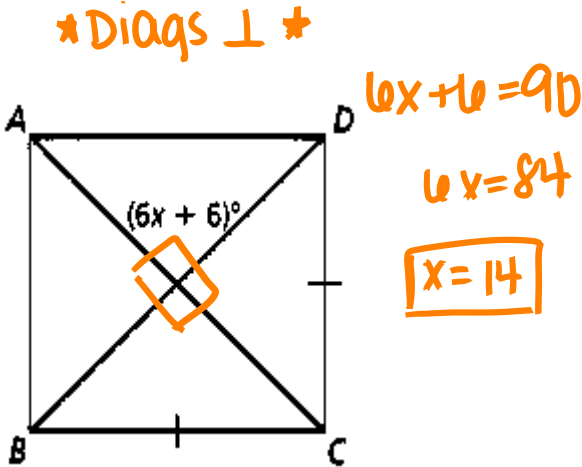
Algebra Time!

1. For what value of y makes DEFG a rectangle?

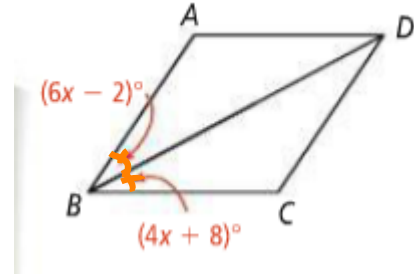


*Diags \cong
 $5y + 3 = 7y - 5$
 $8 = 2y$
 $y = 4$

3. For what value of x makes ABCD a square?



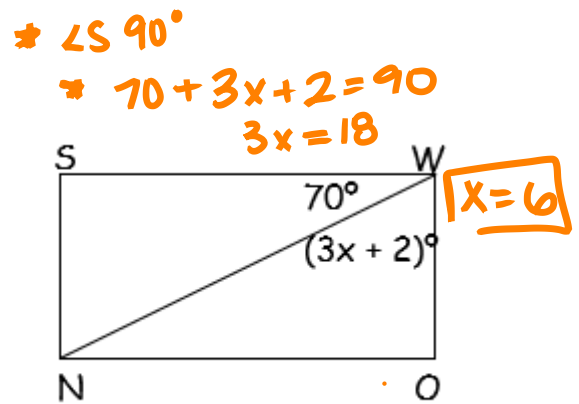
2. For what value of x makes ABCD a rhombus?



Diag bisects \angle s

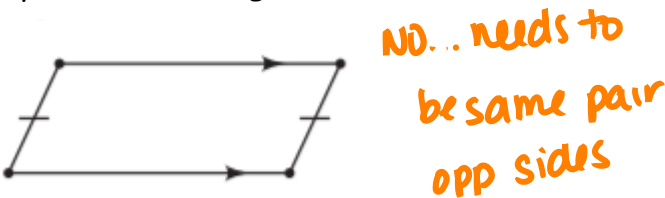
$6x - 2 = 4x + 8$
 $2x = 10$
 $x = 5$

4. For what value of x makes SNOW a rectangle?



Find the student mistake! Billy was asked if the following quadrilaterals were parallelograms. Justify if his reasoning is correct or not.

1. Yes. Since one pair of opposite sides is both parallel and congruent.



2. No. Only one pair of opposite sides is congruent. Not enough information.

