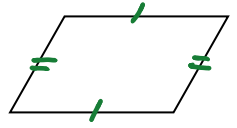


key

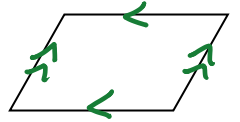
6.3 Proving parallelograms

Ways to Prove That a Quadrilateral is a Parallelogram:

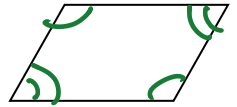
1) If both pair of opp sides are \cong then the quadrilateral is a parallelogram



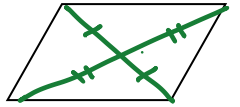
2) If both pairs of opp sides are \parallel then the quadrilateral is a parallelogram



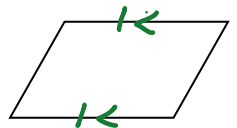
3) If both pairs of opp \angle s are \cong then the quadrilateral is a parallelogram



4) If diags bisect each other then the quadrilateral is a parallelogram

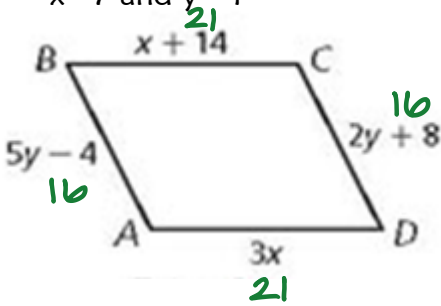


5) If 1 pair of opp sides \cong and \parallel then the quadrilateral is a parallelogram



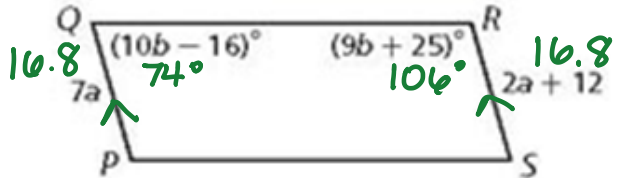
Practice:

1) Show that $ABCD$ is a parallelogram for $x=7$ and $y=4$



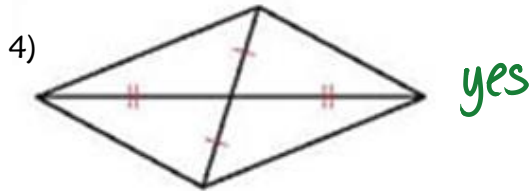
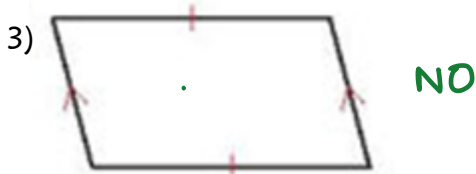
yes, b/c both pairs of opp sides \cong

2) Show that $PQRS$ is a parallelogram for $x = 2.4$ and $b = 9$.



yes, b/c one pair of opp sides \cong and \parallel

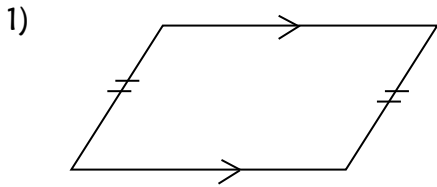
3-6 Determine if each quadrilateral must be a parallelogram. Justify your answer.



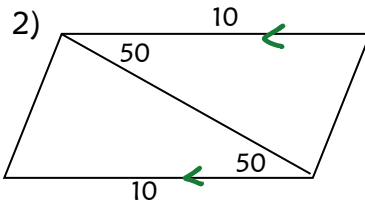
★ Partner Practice ★

6.2-6.3 Practice

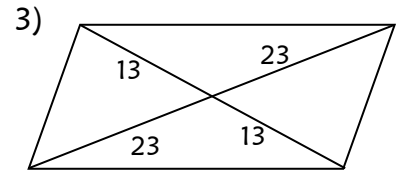
1-3 Determine if each shape is a parallelogram. If so, explain why.



NO,



yes, 1 pair of ^{opp} sides \parallel and \cong



yes, diags bisect each other

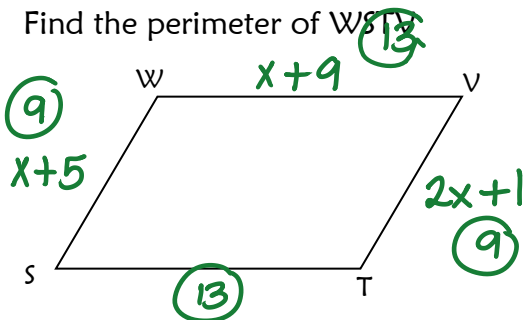
4) WSTV is a parallelogram

$$WS = x + 5$$

$$WV = x + 9$$

$$VT = 2x + 1$$

Find the perimeter of WSTV



$$x + 5 = 2x + 1$$

$$4 = x$$

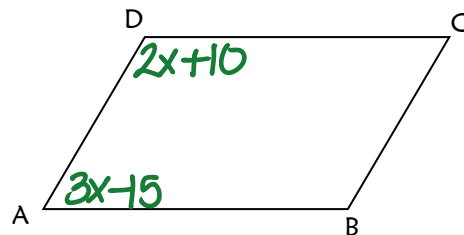
$$\text{Perimeter} = 13 + 13 + 9 + 9 = 44$$

5) ABCD is a parallelogram:

$$\angle A = 3x - 15$$

$$\angle D = 2x + 10$$

Find $m\angle D$ and $m\angle C$



$$2x + 10 + 3x - 15 = 180$$

$$5x - 5 = 180$$

$$5x = 185$$

$$x = 37$$

$$\angle D = 84^\circ$$

$$\angle C = 96^\circ$$