Step 3 Compare the slopes.

Since the slope of $\overline{PQ}$ is the same as the slope of ____, $\overline{PQ}$ is parallel to ____.

Since the slope of $\overline{QR}$ is the same as the slope of ____, $\overline{QR}$ is parallel to ____.

Quadrilateral *PQRS* is a parallelogram because _____.

Reflect

3. **What If?** Suppose you know that the lengths of $\overline{PQ}$ and $\overline{QR}$ in the figure in Example 1B are each $\sqrt{20}$. What type of parallelogram is quadrilateral *PQRS*? Explain.

_____

_____

_____

Your Turn

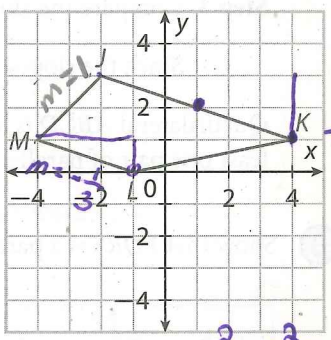
Show that each figure is the given type of quadrilateral.

4. Show that *JKLM* is a trapezoid. → 1 pair of // sides

JKLM is a trap.
b/c $\overline{ML} \parallel \overline{JK}$

So... slopes are ≅

$\frac{+1}{-3}$ $\frac{\text{rise}}{\text{run}} = m$



$\frac{+2}{-6} = \frac{-1}{3}$

5. Show that *ABCD* is a parallelogram. → opp. sides // opp. sides ≅

$\overline{AB} \parallel \overline{DC}$ $m = \frac{3}{2}$

$\overline{BC} \parallel \overline{AD}$ $m = -2$

$\overline{DC} \cong \overline{BA} = \sqrt{52}$

$\overline{AD} \cong \overline{BC} = \sqrt{5}$

$\sqrt{52}$

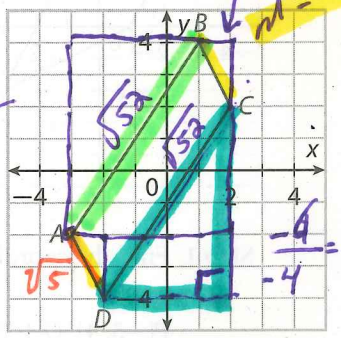
$\sqrt{4} \cdot \sqrt{13}$

$2\sqrt{13}$

$1^2 + 2^2 = c^2$

$c = \sqrt{5}$

$m = -2$



$\frac{+6}{+4}$ $m = \frac{3}{2}$

$\frac{-4}{-4} = \frac{3}{2}$

$a^2 + b^2 = c^2$

$4^2 + 6^2 = c^2$

$52 = c^2$

$\sqrt{52} = c$