

Good afternoon: do the warm up in your notebook

Find the slope of a line perpendicular to the segment with endpoints (3,2) and (-2,4).

$$\frac{\Delta y}{\Delta x} = \frac{4-2}{-2-3} = \frac{2}{-5} \perp \left(\frac{5}{2}\right) \text{ opposite reciprocal}$$

Slope formula??
 $\frac{\Delta y}{\Delta x}$

Find the midpoint of the same segment.

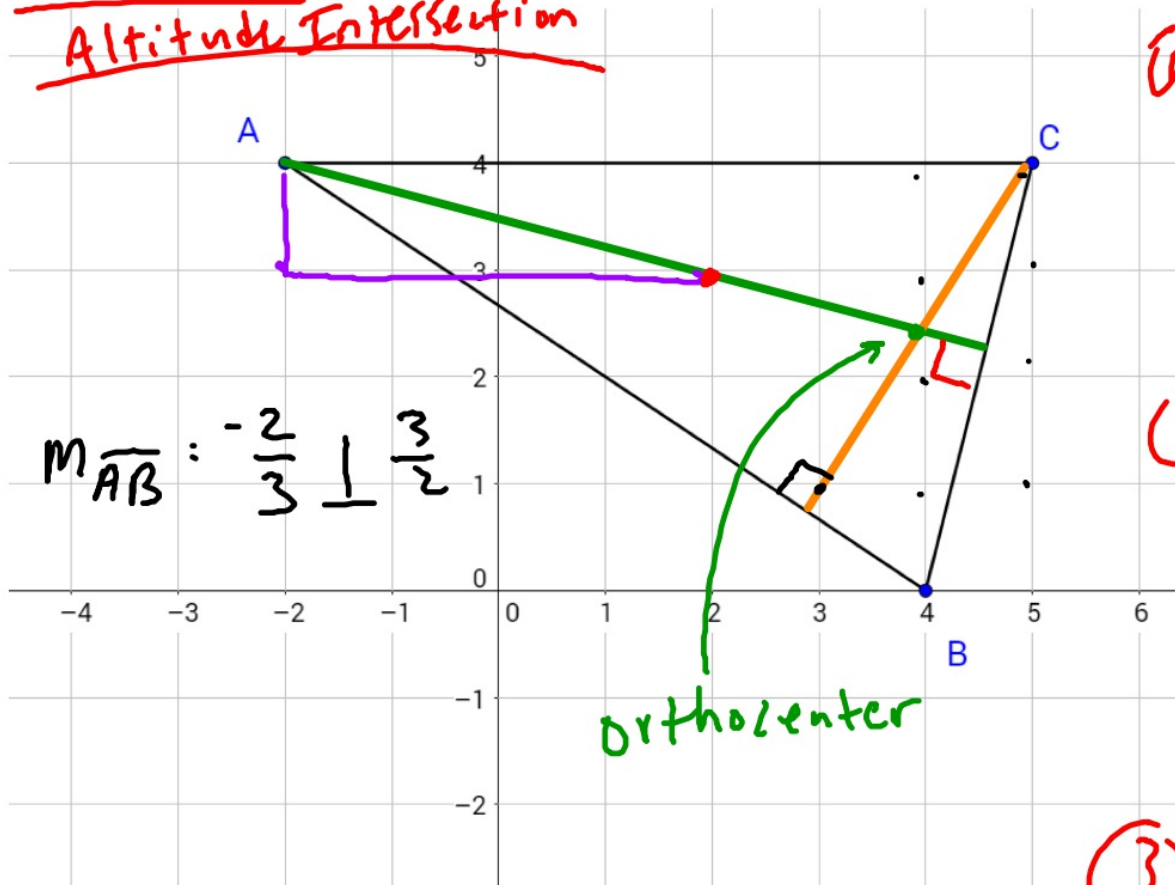
$$\begin{aligned} &\text{average} \left(\frac{3+(-2)}{2}, \frac{2+4}{2} \right) \\ &\left(\frac{1}{2}, \frac{6}{2} \right) \rightarrow \left(\frac{1}{2}, 3 \right) \end{aligned}$$

Reminders

Next assess: 11/30

Orthocenter and Circumcenter in the Coordinate Plane

Altitude Intersection



① Pick a side, find slope, then \perp slope

$$m_{\overline{BC}} = \frac{4}{1} \perp -\frac{1}{4}$$

② Apply \perp slope from vertex not on chosen side.

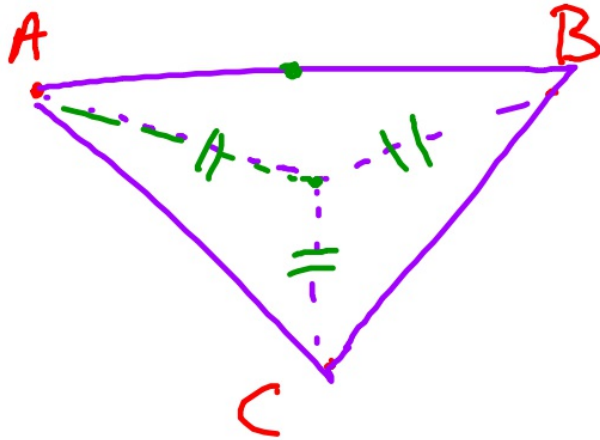
From A, $-\frac{1}{4}$

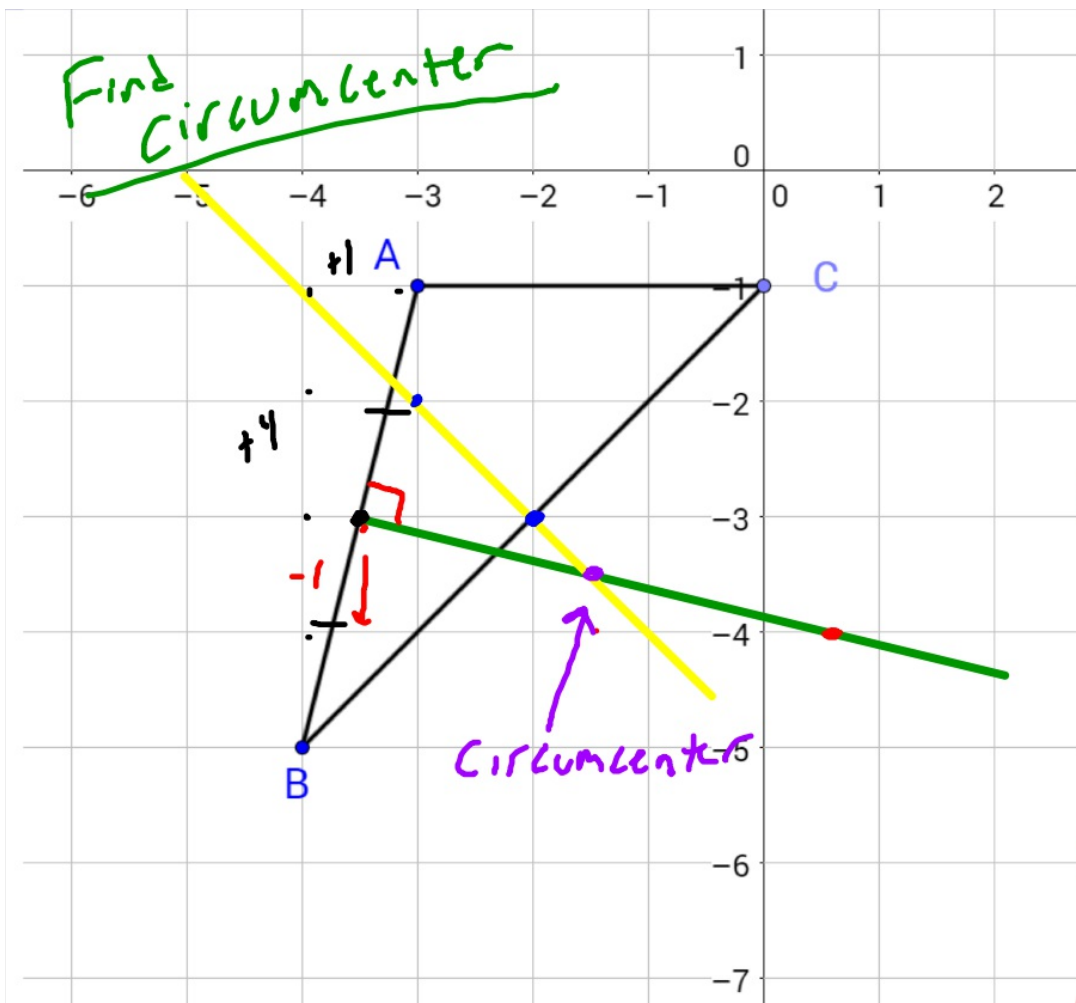
$$(\Delta y = -1, \Delta x = 4)$$

③ Make line.

④ Repeat.

Three towns are currently underserved by public transportation, so a light rail station will be built to serve the residents. Where should the station be built so that it is equidistant from each town center?





① Pick side, find midpoint

$$\text{Midpt } \overline{AB} : \left(\frac{-3 + -4}{2}, \frac{-1 + -5}{2} \right)$$

$$(-3.5, -3)$$

② Find slope of same side, then find its \perp slope

$$m_{AB} : \frac{\Delta y}{\Delta x} = \frac{4}{1} \perp \frac{-1}{4}$$

③ Apply \perp slope from mid point.

④ Repeat.

Centers on the Coordinate Plane

Centroid: average the 3 pairs of coordinates

Circumcenter: midpoint and perpendicular slope

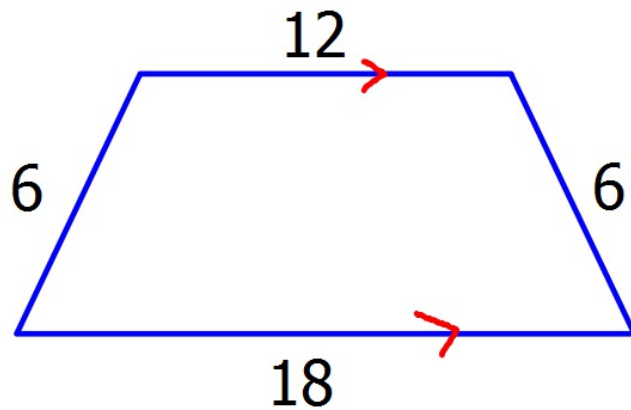
Orthocenter: vertex and perpendicular slope of opposite side

Share with your elbow partner something
you have learned so far today

Quadrilaterals!

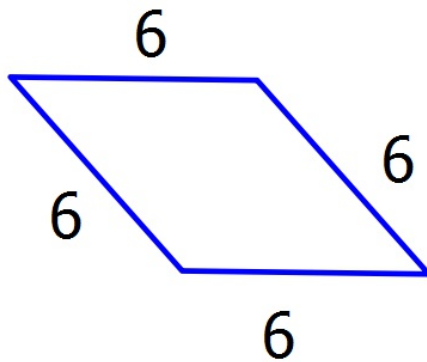
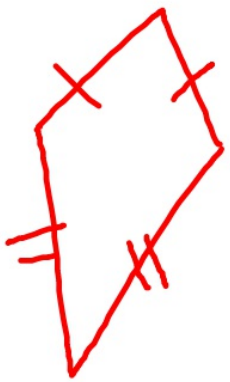


What is the most specific name for this quadrilateral?



- A trapezoid
- B rectangle
- ✓ C isosceles trapezoid
- D parallelogram
- E I don't know yet

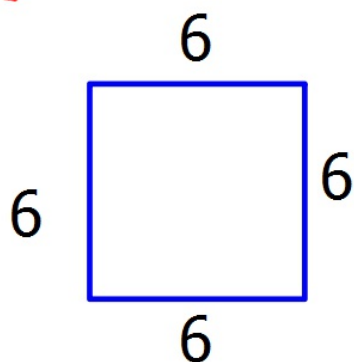
What is the most specific name for this quadrilateral?



- A square
- B kite
- ✓ C rhombus
- D parallelogram
- E I don't know yet

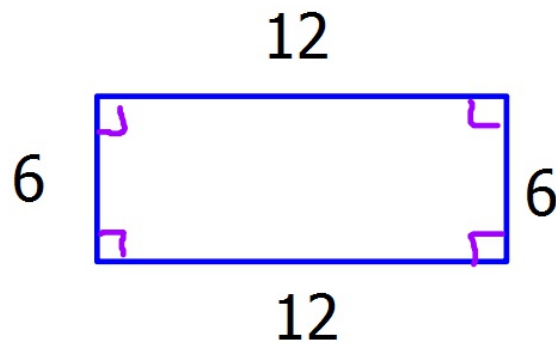
What is the most specific name for this quadrilateral?

Assume



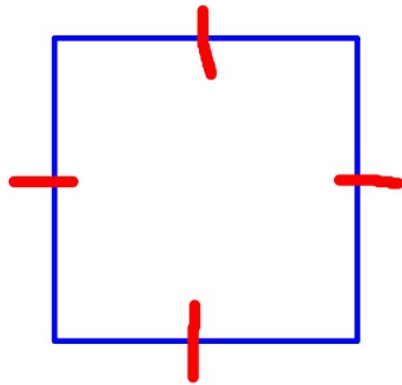
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What is the most specific name for this quadrilateral?



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- D trapezoid
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What is the most specific name for this quadrilateral?



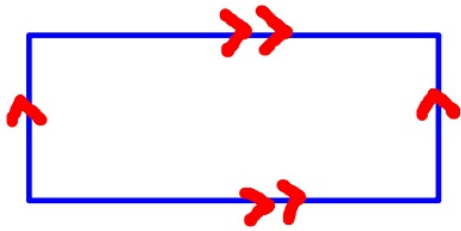
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Have a Happy Thanksgiving!

