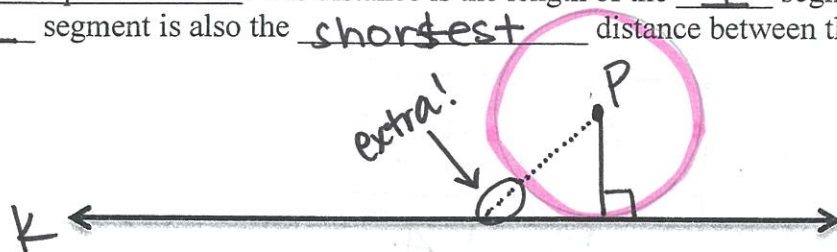


All About Perpendicular Lines (Day 1)

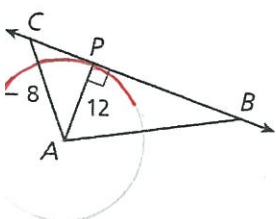
Lesson Objective

INBAT find the shortest distance from a point to a line

Distance from a point to a line: this distance is the length of the ⊥ segment from the point to the line.
 → This ⊥ segment is also the shortest distance between the point and the line.



Example:

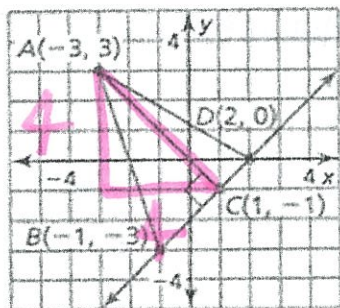


1. Name the shortest distance from point A to $\overline{BC}$: $AP = 12$
2. Write and solve an inequality to solve for the values of x that are valid.

$$12 < x - 8$$

$$\boxed{20 < x}$$

3. Find the distance from point A to $\overline{BD}$.



shortest dist: AC

$$AC^2 = 4^2 + 4^2$$

$$AC^2 = 16 + 16$$

$$\sqrt{AC^2} = \sqrt{32}$$

$$AC = \pm 4\sqrt{2}$$

$$\boxed{AC = 4\sqrt{2}}$$

$$\begin{aligned} &\sqrt{32} \\ &\sqrt{16 \cdot 2} \\ &\sqrt{16} \cdot \sqrt{2} \end{aligned}$$