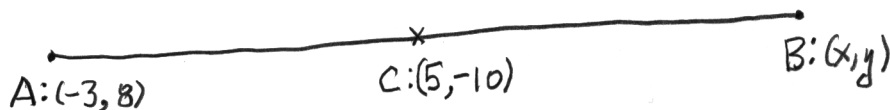


Name: ANSWER KEY

Score: \_\_\_\_\_

Given  $A: (-3, 8)$ , find the coordinates of the point  $B$  such that  $C: (5, -10)$  is the midpoint of segment  $\overline{AB}$ .



$$\text{Midpoint of } \overline{AB} = \left( \frac{-3+x}{2}, \frac{8+y}{2} \right)$$

$$\text{Midpoint of } \overline{AB} = (5, -10)$$

$$\therefore \left( \frac{-3+x}{2}, \frac{8+y}{2} \right) = (5, -10)$$

$$\Rightarrow \begin{cases} \frac{-3+x}{2} = 5 \\ \frac{8+y}{2} = -10 \end{cases} \Rightarrow \begin{cases} -3+x = 10 \\ 8+y = -20 \end{cases} \Rightarrow \begin{cases} x = 13 \\ y = -28 \end{cases}$$

$$\boxed{B(13, -28)}$$

$$\begin{aligned} \text{Check: Midpoint of } \overline{AB} \text{ where } A: (-3, 8), B: (13, -28) \\ = \left( \frac{-3+13}{2}, \frac{8-28}{2} \right) = \left( \frac{10}{2}, \frac{-20}{2} \right) = (5, -10) = C \end{aligned}$$