

## CAR TROUBLE (SAMPLE RESPONSES)

### Possible Solution #1

Students display their ability to use the midpoint formula.

$$\begin{aligned} M &: \left( \frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right) \\ &= \left( \frac{108 + 24}{2}, \frac{32 + (-31)}{2} \right) \\ &= \left( \frac{132}{2}, \frac{1}{2} \right) = (66, 0.5) \end{aligned}$$

Amber's family should return to their home because they have not reached the midpoint of the line segment yet.

### Possible Solution #2

Students display their knowledge that to find a midpoint they must average the  $x$ - and  $y$ -values in the given coordinates. (This can be done without formally using the midpoint formula.)

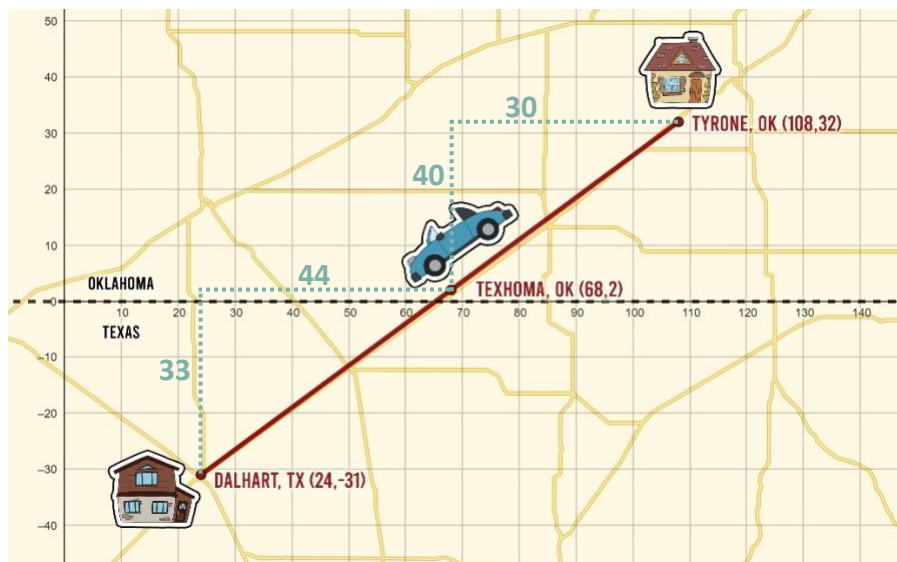
$$x\text{-values: } 24 + 108 = 132; \frac{132}{2} = 66$$

$$y\text{-values: } -31 + 32 = 1; \frac{1}{2} = 0.5$$

Amber's family should return to their home because they have not yet made it to the midpoint of their trip.

### Possible Solution #3

Students use slope to analyze the similarities and differences between the distances from Tyrone to Texhoma and from Texhoma to Dalhart.



Amber's family should return home because they are closer to their home than their grandmother's house.