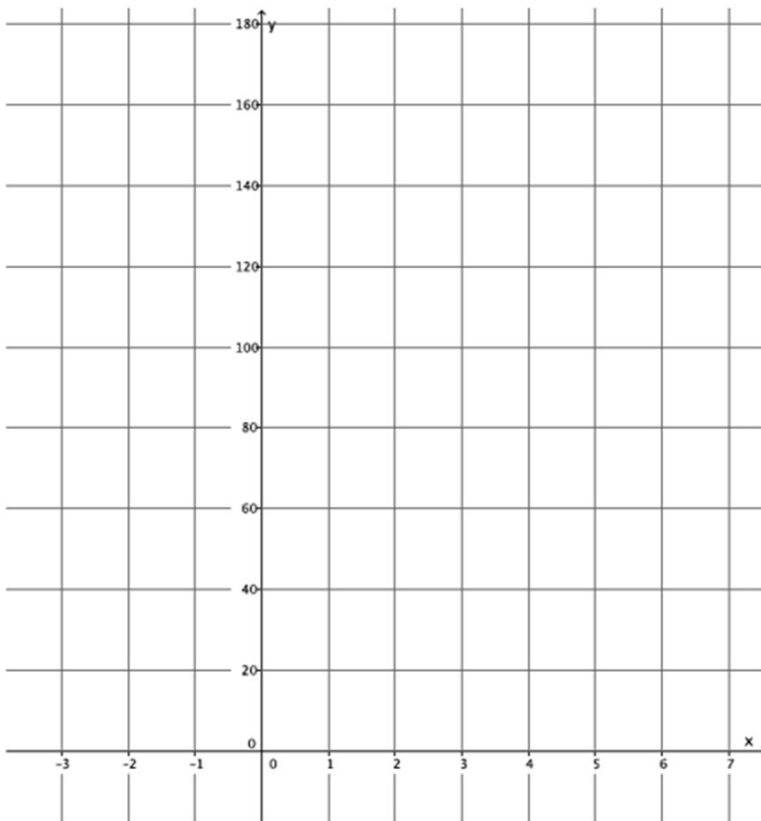


## System of Equations Word Problems (Graphs)

Two cars drive from town A to town B at constant speeds. The blue car travels 25 miles per hour, and the red car travels 60 miles per hour. The blue car leaves at 9:30 a.m., and the red car leaves at noon. The distance between the two towns is 150 miles.

a) Who will get there first? Write and graph the system of linear equations that represents this situation.



b) At approximately what point do the graphs of the lines intersect?

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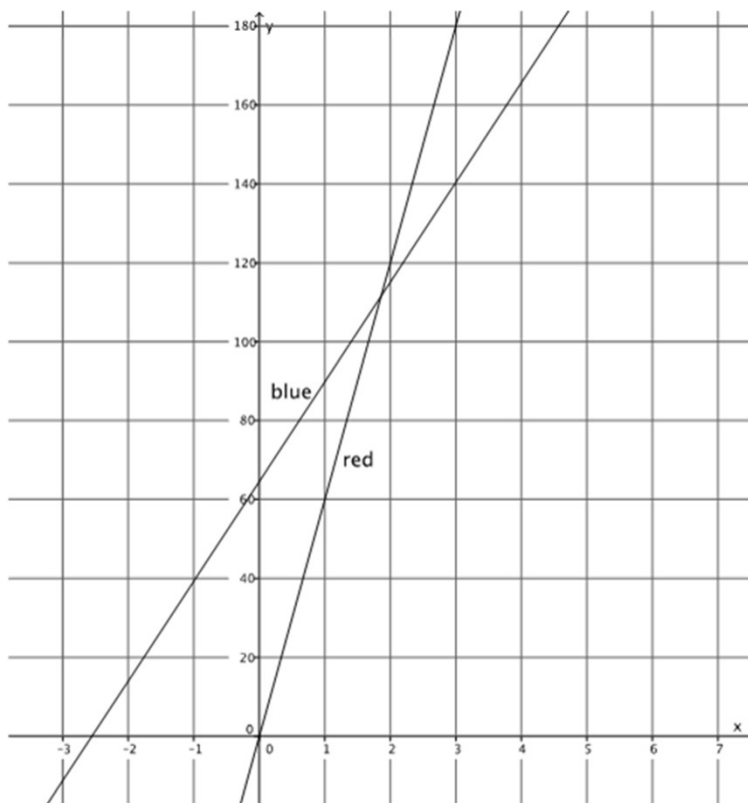
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a) Who will get there first? Write and graph the system of linear equations that represents this situation.

*The linear equation that represents the distance traveled by the blue car is  $y = 25(x + 2.5)$ , which is the same as  $y = 25x + 62.5$ . The linear equation that represents the distance traveled by the red car is  $y = 60x$ . The system of linear equations that represents this situation is*

$$\begin{cases} y = 25x + 62.5 \\ y = 60x \end{cases}$$



*The red car will get to town B first.*

b) At approximately what point do the graphs of the lines intersect?

*The lines intersect at approximately (1.8, 110).*

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