

Rate Word Problems

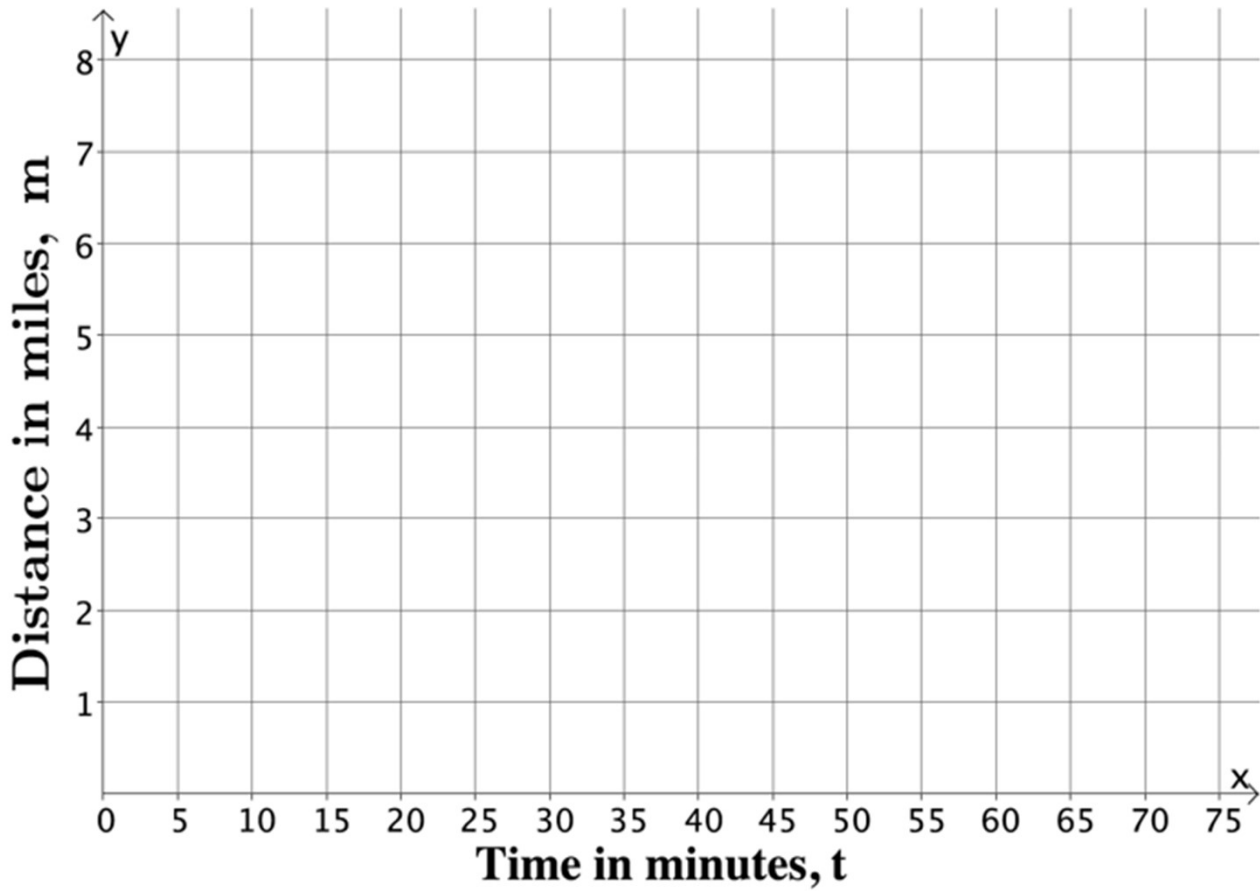
- Connor runs at a constant rate. It takes him 34 minutes to run 4 miles.
 - Write the linear equation in two variables that represents the number of miles Connor can run in any given time interval in minutes, t .

- Complete the table below. Use a calculator, and round answers to the tenths place.

t (time in minutes)	Linear Equation:	m (distance in miles)
0		
15		
30		
45		
60		

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c) Graph the data on a coordinate plane.



d) Connor ran for 40 minutes before tripping and spraining his ankle. About how many miles did he run before he had to stop? Explain.

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1. Connor runs at a constant rate. It takes him 34 minutes to run 4 miles.
- a) Write the linear equation in two variables that represents the number of miles Connor can run in any given time interval in minutes, t .

Let C be the constant rate that Connor runs in miles per minute, and let m represent the number of miles he ran in t minutes. Then,

$$\frac{4}{34} = C, \text{ and } \frac{m}{t} = C; \text{ therefore, } \frac{4}{34} = \frac{m}{t}.$$

$$\frac{4}{34} = \frac{m}{t}$$

$$34m = 4t$$

$$\frac{34}{34}m = \frac{4}{34}t$$

$$m = \frac{4}{34}t$$

$$m = \frac{2}{17}t$$

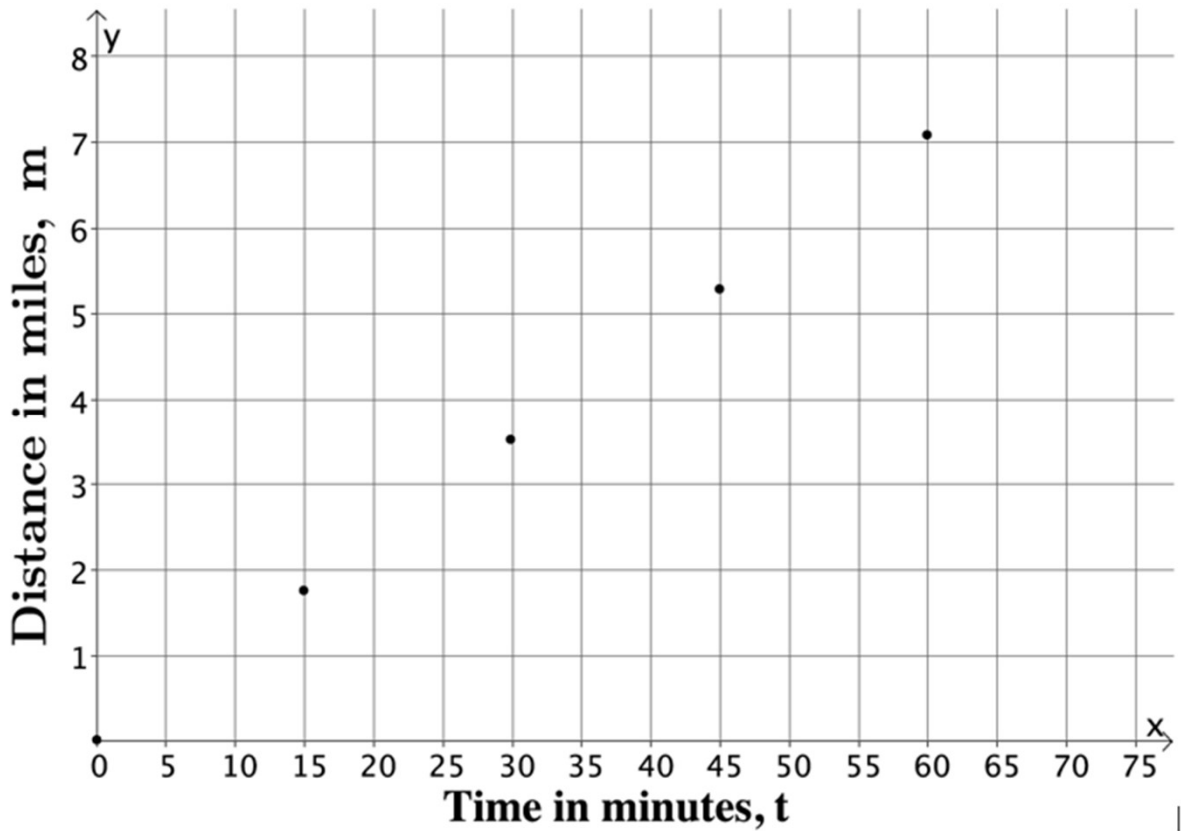
- b) Complete the table below. Use a calculator, and round answers to the tenths place.

t (time in minutes)	Linear Equation: $m = \frac{2}{17}t$	m (distance in miles)
0	$m = \frac{2}{17}(0)$	0
15	$m = \frac{2}{17}(15)$	$\frac{30}{17} \approx 1.8$
30	$m = \frac{2}{17}(30)$	$\frac{60}{17} \approx 3.5$
45	$m = \frac{2}{17}(45)$	$\frac{90}{17} \approx 5.3$
60	$m = \frac{2}{17}(60)$	$\frac{120}{17} \approx 7.1$

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c) Graph the data on a coordinate plane.



d) Connor ran for 40 minutes before tripping and spraining his ankle. About how many miles did he run before he had to stop? Explain.

Since Connor ran for 40 minutes, he ran more than 3.5 miles but less than 5.3 miles. Since 40 is between 30 and 45, then we can use those reference points to make an estimate of how many miles he ran in 40 minutes, probably about 5 miles.

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