

Exercise 16

Jason leaves Detroit at 2:00 PM and drives at a constant speed west along I-94. He passes Ann Arbor, 40 mi from Detroit, at 2:50 PM.

- (a) Express the distance traveled in terms of the time elapsed.
- (b) Draw the graph of the equation in part (a).
- (c) What is the slope of this line? What does it represent?

Solution

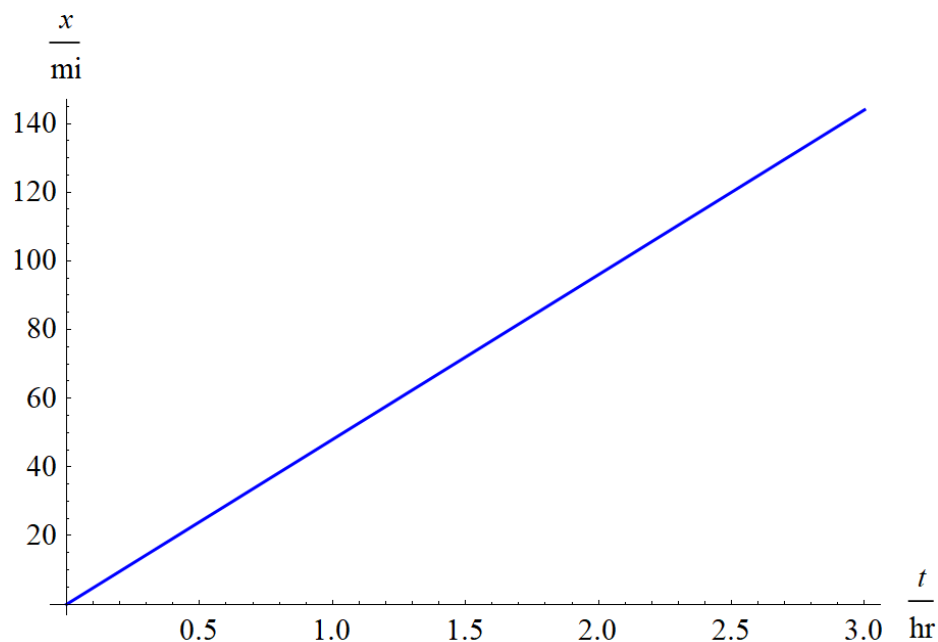
The distance one travels going at constant speed is $x = vt$, where t is the elapsed time and v is the speed.

$$v = \frac{40 \text{ mi}}{50 \cancel{\text{min}}} \times \frac{60 \cancel{\text{min}}}{1 \text{ hour}} = 48 \frac{\text{mi}}{\text{hr}}$$

Therefore, Jason travels a distance (in miles),

$$x = 48t,$$

where t is in hours.



The slope is 48 (miles per hour), and it represents how fast Jason is travelling.