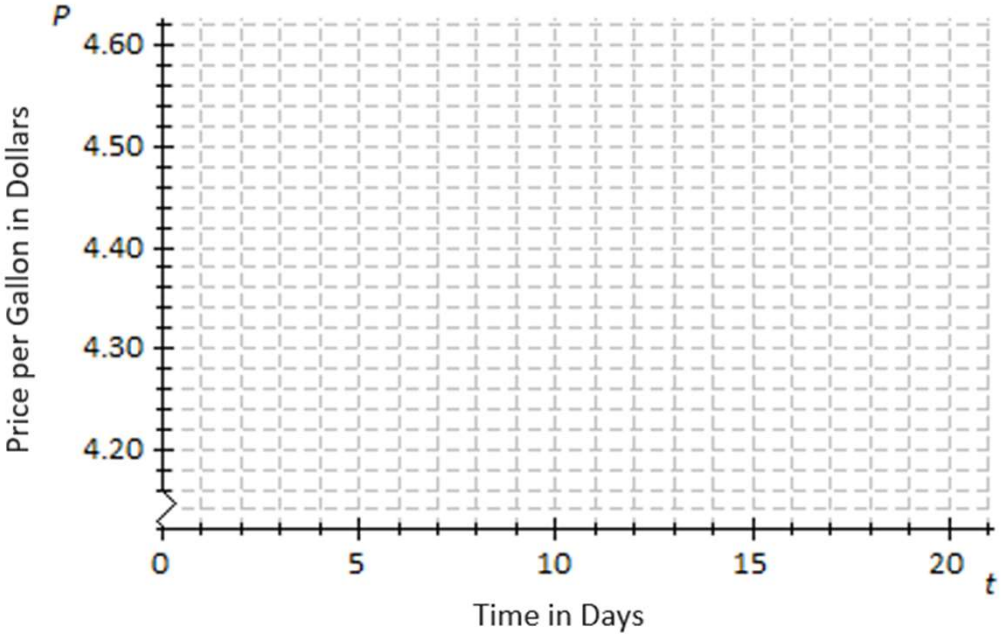
Representations of a Line

1. Suppose that the price of gasoline has been falling. At the beginning of last month ($t = 0$), the price was $\$4.60$ per gallon. Twenty days later ($t = 20$), the price was $\$4.20$ per gallon. Assume that the price per gallon, P, fell at a constant rate over the twenty days.



a) Identify the ordered pairs given in the problem. Plot both points on the coordinate plane above and draw a line connecting the 2 points.

b) What is the rate of change? What does it mean within the context of the problem?

c) What is the function that models the relationship between the number of days and the price per gallon?

d) What was the price of gasoline after 9 days?

e) After how many days was the price $\$4.32$?

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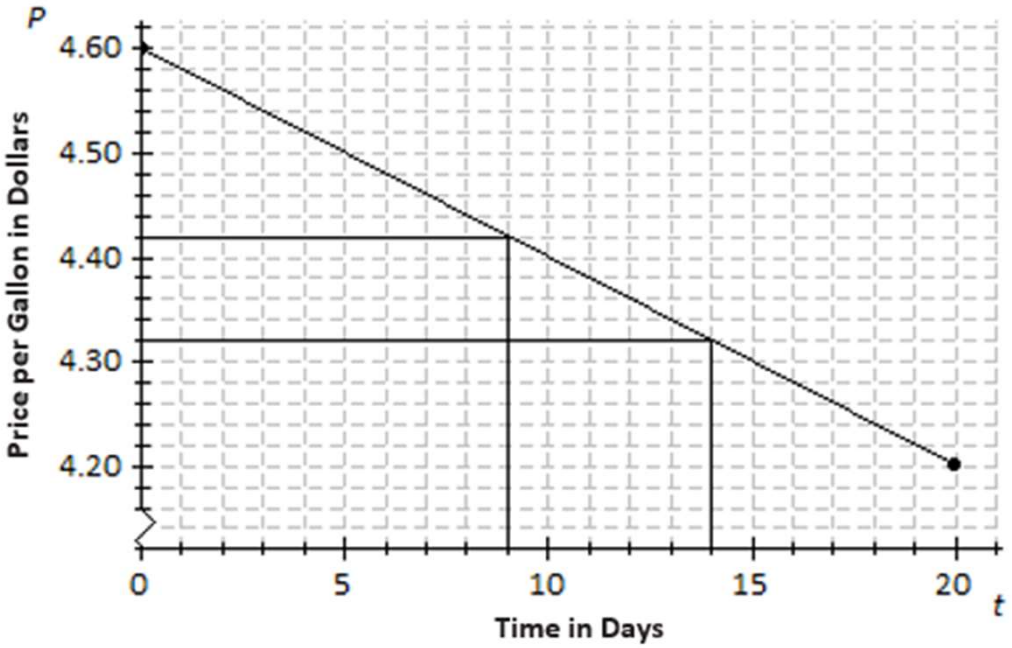

a) Identify the ordered pairs given in the problem. Plot both points on the coordinate plane above and draw a line connecting the 2 points.

$(0, 4.60)$ *and* $(20, 4.20)$*; see the graph above.*

b) What is the rate of change? What does it mean within the context of the problem?

Using points $(0, 4.60)$ and $(20, 4.20)$, the rate of change is -0.02 because $\frac{4.20 - 4.60}{20 - 0} = \frac{-0.4}{20} = -0.02$. The price of gas is decreasing $\$0.02$ each day.

c) What is the function that models the relationship between the number of days and the price per gallon?

$P = -0.02t + 4.6$

d) What was the price of gasoline after 9 days?

$\$4.42$*; see the graph above.*

e) After how many days was the price $\$4.32$?

14 *days; see the graph above.*