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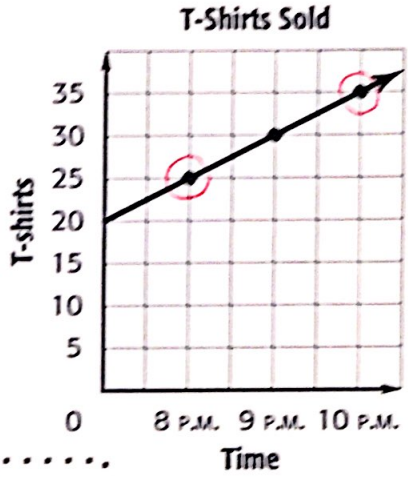
Constant Rate of Change Continued — Lesson 1.7

I. Use a Graph

- The graph represents the number of T-shirts sold at a band concert. Use the graph to find the constant rate of change in number per hour.



To find the rate of change, pick any two points on the line,

such as (8, 25) and (10, 35).

Label the points: (8, 25) (10, 35)

(8, 25): x_1, y_1 — (10, 35): x_2, y_2

$$\frac{\text{change in number}}{\text{change in hours}} = \frac{y_2 - y_1}{x_2 - x_1} = \frac{35 - 25}{10 - 8}$$

$$= \frac{10}{2} = \frac{10 \div 2}{2 \div 2} \rightarrow \frac{5}{1}$$

Write as a unit rate.

5 t-shirts per hour

Examples

DIRECTIONS: Find the unit rate to determine the constant rate of change by analyzing points on the graph. Highlight and underline important information.

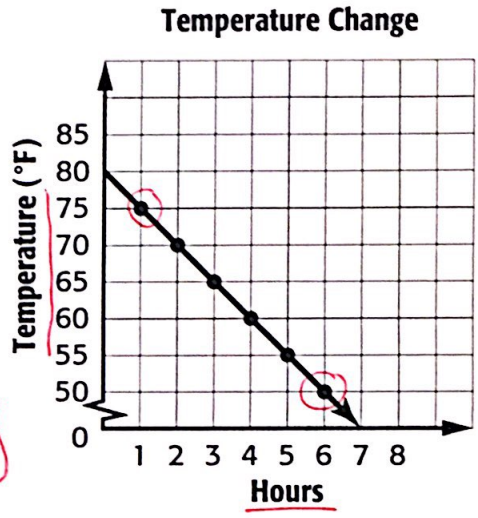
1. • Pick 2 points:

$(1, 75), (6, 50)$

$x_1, y_1 \quad x_2, y_2$

• $\frac{\text{change in temp.}}{\text{change in time}} = \frac{y_2 - y_1}{x_2 - x_1} =$

$= \frac{50 - 75}{6 - 1} = \frac{-25}{5} =$ **-5 °F per hour**



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2. • Pick 2 points:

$(1, 3), (5, 15)$

$x_1, y_1 \quad x_2, y_2$

• $\frac{\text{change in ~~ppl~~ lb}}{\text{change in ppl}} = \frac{y_2 - y_1}{x_2 - x_1} =$

$= \frac{15 - 3}{5 - 1} = \frac{12}{4} =$ **3 lb / person**