

Practice 2-3

..... *Example Exercises*

Example 1

- Suppose you are filling an old well. After 2 h, the hole is still 12 ft deep. After 5 h, the hole is 8 ft deep.
 - Write an equation to represent the filling rate.
 - Use the equation to predict when the hole will be filled.
 - Use the equation to estimate the depth of the hole when you started.
- An embankment has coordinates (4, 9) and (6, 7). Find an equation of a line that could be used to represent this embankment.

Write the equation of each line.

- through $(-1, 4)$ and $(3, 0)$
- through $(-2, -4)$ and $(5, 4)$
- through $(3, 0)$ and $(5, -2)$
- through $(-1, 0)$ and $(4, -9)$
- through $(-3, -3)$ and $(4, 0)$
- through $(0, 0)$ and $(1, 1)$

Example 2

- The 1995 guidelines for healthy adult weights at different heights state that an adult who is 5'6" tall should weigh at least 118 lb. One who is 5'8" should weigh at least 125 lb. An adult 5'11" should weigh at least 136 lb. You are helping several people who are recovering from illnesses to regain a healthy weight.
 - Graph the data. Use inches for height. Draw a trend line.
 - Write an equation for the trend line in slope-intercept form.
 - Predict the lowest healthy weight for an adult who is 6'2" tall.
 - Does a weight of 105 lb meet the guidelines for an adult who is 5'4"?
 - Would you expect the prediction from your trend line to be correct for your 6-yr old nephew who is already 4'11"? Explain.
- Beth conducted a chemistry experiment. The data she collected appears in the table.

Temp of Solvent ($^{\circ}\text{C}$)	15	20	25	27	36	40	43	47
Powder Dissolved (g)	15	13	17	21	23	26	30	31

- Graph the data. Draw a trend line.
- Write an equation for the trend line in slope-intercept form.
- Predict the amount of powder that would dissolve if the temperature of the solvent were 60°C .