

## Section 5.7 – Chapter Summary

### Problem Set 1

**Find the slope of the line through the following points and determine if the line is increasing or decreasing.**

- (3, 4) and (4, 2)
- (-4, -1) and (-6, -6)
- (2.5, -4) and (1, 5.1)
- (1, 2) and (4, 7)
- (5, 2) and (11, 10)
- (7, 5) and (-5, -2)

**Determine if the following equations are linear or non-linear.**

- $y = 3x + 1$
- $y = \sqrt[4]{x}$
- $y = -3$
- $4x + y - 3 = 1$
- $4y = 2x + 3$
- $3x^2 + y = 0$

**Find the coordinates of two points on the following lines.**

- $y = 3x - 4$
- $-2x + 3y = 4$
- $3x - 2y - 3 = 0$

**Find the x- and y-intercepts of the following lines.**

- $3x + 2y = 0$
- $-2x - y = -1$
- $y = 2x - 5$

**Graph the following equations using the method of your choice.**

- $y = -2x + 2$
- $y = x - 3$
- $3x + 4y = 12$
- $x + 2y = 2$
- $4y + \frac{2}{5}x = 4$
- $y = 2.2x - 0.4$

**Find the equation of the lines through the following points.**

- (4, 2) and (3, 0)
- (5, -5) and (1, 2)
- (-2, 5) and (3, 5)
- (1, 1.2) and (-2.7, 1)
- (6, 4) and (-3, -5)
- $\left(\frac{2}{3}, -\frac{1}{3}\right)$  and (-2, 1)
- $\left(\frac{4}{3}, -1\right)$  and  $\left(\frac{2}{3}, \frac{7}{4}\right)$
- (3, 0) and (3, -1)
- (10, -4) and (12, 6)

**Determine if the following pairs of lines are parallel, perpendicular or neither.**

- $y = 4x + 1$  and  $y = -3x - 2$
- $3x + 2y = 2$  and  $6x + 4y = 10$
- $x + y = 0$  and  $x + 3y = 4$
- $x = 0$  and  $y = 0$
- $3y + x = 7$  and  $y - 3x = 5$
- $2x + 2y = 2y$  and  $x - 2y = 4$
- $5x + 2y = -1$  and  $5y = 8 + 2x$
- $x + 1 = y$  and  $y = -x + 4$
- $3x + 1 = 3y$  and  $6x + 2 = 3y$

**Find the equations of the lines parallel to the following lines that pass through the given points.**

43.  $y = 4x + 1$  through  $(2, 4)$

44.  $3x + 2y = 2$  through  $(1, 2)$

45.  $3y + 2x = 3$  through  $(6, 0)$

**Find the equations of the lines that are perpendicular to the following lines that pass through the given points.**

46.  $y = 3x + 2$  through  $(1, 2)$

47.  $3x - 4y = 3$  through  $(-2, 3)$

48.  $y = -\frac{4}{5}x + 2$  through  $(3, 2)$