

## Section 5.2 – The Equation of a Line

### Problem Set 1

**Identify the following equations as linear or non-linear.**

1.  $y = 3x - 1$                       2.  $-2(x + 1) + x = 3y$                       3.  $3x^3 = y + 2$                       4.  $4x + 3 = 3y - 4$   
5.  $-3(x + 4) + 1 = x + y$                       6.  $1/y = x$                       7.  $x = 1$                       8.  $x + y - 1 = 2 + \frac{y}{4}$

**Determine whether or not the following points are on the given line.**

9.  $(4, 0)$  on  $y = 3x + 2$                       10.  $(-1, 0)$  on  $y = 2x - 1$                       11.  $(0, 1)$  on  $y = 3x$                       12.  $(1.3, -2.5)$  on  $y = 3x + 1$   
13.  $(3, 2)$  on  $y = \frac{1}{3}x + 1$                       14.  $(2, 4)$  on  $-2x + 3y = 12$                       15.  $\left(\frac{2}{3}, \frac{1}{5}\right)$  on  $3x - 5y = 1$                       16.  $\left(-\frac{1}{8}, \frac{3}{8}\right)$  on  $y = -4x + 1$

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

17.  $y = 4x + 5$                       18.  $y = -2x + 1$                       19.  $y = 2x - .5$                       20.  $y = 3x - 1$   
21.  $3x + y = 1$                       22.  $y = -\frac{1}{5}x + \frac{2}{5}$                       23.  $\frac{2y}{7} - \frac{3x}{2} = -\frac{1}{14}$                       24.  $-2x + 4y = 0$

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

25.  $y = 3x + 2$                       26.  $y = -3x + 8$                       27.  $y = 2.5x - 4.6$                       28.  $4y - x = 4$   
29.  $y = -\frac{x}{2} + \frac{5}{2}$                       30.  $2x + 5y = 10$                       31.  $\frac{y}{5} + \frac{x}{5} = 1$                       32.  $-3x + 6y = 0$