## Algebra 3 Assignment # 1 Linear Equations

- (1) Sketch a graph of each of the following lines please.
  - (a) 4x 2y = 6(b)  $\frac{1}{4}x - \frac{1}{2}y = 1$ (c) 2x + y = y - 4(d) y + 5 = 5
- (2) Determine whether each of the following sets of points is collinear.
  - (a) (2, -2), (6, 4), (-4, 11) (b) (3, 9), (-1, 1), (2, 7)
- (3) Find all values of the constant k if the line connecting the points (-4, 1) and (k, 5) is to be:
  (a) parallel, (b) perpendicular to the line connecting the points (3, k) and (-3, 6).
- (4) Write an equation of a line which satisfies each of the following please.
  - (a) Passes through (-2, 5) with slope  $-\frac{3}{2}$ .
  - (b) Passes through (4, -7) with slope  $\frac{2}{5}$ .
  - (c) Passes through (3, 6) and (-6, 0).
  - (d) Passes through (-5, 3) and (2, 3).
  - (e) Passes through (8, -1) and is parallel to 3x 4y = 2.
  - (f) Passes through (8, -1) and is perpendicular to 3x 4y = 2.
- (5)  $\triangle ABC$  has vertices A (-1, -1), B (1, 3), C (4, 2). Write the equation of the altitude to  $\overrightarrow{BC}$  please.

## Algebra 3 Assignment # 1 Answers

(1) (a) y = 2x - 3(b)  $y = \frac{1}{2}x - 2$ (c) x = -2(d) y = 0

(3) (a) 
$$\mathbf{k} = -6$$
 or  $\mathbf{k} = 8$  (b)  $\mathbf{k} = 0$ 

(4) (a) 
$$y = -\frac{3}{2}x + 2$$
  
(b)  $y = \frac{2}{5}x - \frac{43}{5}$   
(c)  $y = \frac{2}{3}x + 4$   
(d)  $y = 3$   
(e)  $y = \frac{3}{4}x - 7$   
(f)  $y = -\frac{4}{3}x + \frac{29}{3}$ 

(5) y = 3x + 2