

HW01

Consider the following equation. $3y - 24 = 4x$

- (a) Determine the x - and y - intercepts of the given equation. If one of the intercepts does not exist, state "absent" for that intercept.
- (b) Graph the given equation by plotting the x and y intercepts. If an intercept does not exist, use another point to plot the graph.

Determine whether or not these points are the vertices of a right angled triangle: $(3, -5), (9, -5), (9, 0)$.

For the points $A = (-6, -1)$ and $B = (2, -10)$.

- (a) Find the distance between A and B .
- (b) Find the coordinates of the midpoint.
- (c) Determine the slope of the line that passes through A and B . Please enter your answer in simplest form. If the slope is undefined state "Undefined".

Find the slope of the line determined by the following equations. Please enter your answer in simplest form. If the slope is undefined state "Undefined".

- (a) $5y + 3x = 7$
- (b) $4y = 8$
- (c) $3x - 1 = 0$
- (d) $y = 4x - 1$

Consider the following equation. $x + 4y = 5$

- (a) Rewrite the equation in slope-intercept form.
- (b) Given $x = -7$, find the value for y and graph.
- (c) Given $x = -3$, find the value for y and use the points to complete the graph of the line.

Write the slope-intercept form of the equation for the line that passes through the points $(-6, 3)$ and $(1, 4)$.

Consider the following equations of two lines. Reduce all fractions to lowest terms. $6 - \frac{2y-5x}{2} = 5x + 4$ and $5x - 2y = 10$

- (a) Rewrite the first equation in slope-intercept form.
- (b) Rewrite the second equation in slope-intercept form.
- (c) Determine if these two lines are perpendicular.

Consider the following equation of a line. Reduce all fractions to lowest terms. $8x + 4y = 15$

- (a) Rewrite this equation in slope-intercept form.
- (b) Find the equation, in slope-intercept form, for the line which is parallel to this line and passes through the point $(-7, 8)$.

Complete the sentences below:

The line $y = 5x + 2$ and $y = ax - 1$ are **perpendicular** if $a =$ _____.

The line $y = 3x - 1$ and $y = ax$ are **parallel** if $a =$ _____.

The slope of a **vertical** line is _____ ; the slope of a **horizontal** line is _____.