

So Far this semester you should be able to:

From Sec 1-3:

- Solve an equation for a variable and state restrictions

From Sec 1-4:

- Solve inequalities and flip symbol when necessary
- Solve compound inequalities

From Sec 1-5:

- Solve absolute value equations and inequalities

From Sec 2-1:

- Give Domain and Range of a relation
- Tell if a relation is a function
- Use function notation

Write the equation of the line that passes through these two points:

$(-2, -5)$ and $(5, 23)$

Slope-int

$$\begin{aligned} y &= mx + b \\ -5 &= 4(-2) + b \\ +8 & \quad +8 \\ 3 &= b \end{aligned}$$

$$\boxed{y = 4x + 3}$$

PT-slope

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{23 - (-5)}{5 - (-2)} = \frac{28}{7} = 4$$

$$\boxed{y + 5 = 4(x + 2)}$$

$$\text{or } \boxed{y - 23 = 4(x - 5)}$$

Sec 2-2: Linear Equations

Three forms for the equation of a linear function:

Slope-Intercept Form $y = mx + b$

Point - Slope Form $y - y_1 = m(x - x_1)$

Standard Form $Ax + By = C$

Write the equation of the line that passes through this pair of points. Give your answer in Point-Slope Form:

$(3, -4)$ and $(1, -1)$

$$\frac{-4 - (-1)}{3 - 1} = \frac{-3}{2}$$

$$\boxed{y + 4 = \frac{-3}{2}(x - 3)} \text{ or } \boxed{y + 4 = \frac{-3}{2}(x - 1)}$$

You can now finish Hwk #3 by doing the problems from Sec 2-2.

You'll need graph paper for #'s 1, 3, 4, and 6.

For #'s 26 & 28 write the answers in both Point-Slope and Slope-Intercept Forms.

Write the equation of the line that passes through this pair of points:

$(-5, 3)$ and $(2, 3)$

$$y = 3$$

Write the equation of the line that passes through this pair of points:

$(4, 7)$ and $(4, -1)$

$$x = 4$$

Parallel Lines:

- Same slope
- Different y-intercept

Given the line $y = 4x - 7$, write an equation of the line that is parallel to this line and passes through the point $(3, 10)$.

$$m = 4$$

$$y - 10 = 4(x - 3)$$

Perpendicular Lines:

Slopes are opposite reciprocals
(their product = -1)

Given the line $y = 2x + 3$, write an equation of the line that is perpendicular to this line and passes through the point $(-6, 1)$.

$$m = -\frac{1}{2}$$
$$y - 1 = -\frac{1}{2}(x + 6)$$

Is each pair of lines parallel, perpendicular, or neither?

1.

$$y = 3x - 7$$
$$y = -3x + 8$$

Neither

2.

$$y = \frac{2}{3}x - 4$$
$$y = \frac{3}{2}x - 9$$

Neither