Section 2.4 Guided Notebook

Section 2.4 Parallel and Perpendicular Lines

- ☐ Work through Objective 1
- ☐ Work through Objective 2
- ☐ Work through Objective 3
- ☐ Work through Objective 4
- ☐ Work through Objective 5

Section 2.4 Parallel and Perpendicular Lines

Section 2.4 Objective 1 Understanding the Definition of Parallel Lines

Write down the Theorem found in Objective 1:

Work through the video that accompanies Example 1 and write your notes here:

Show that the lines $y = -\frac{2}{3}x - 1$ and $4x + 6y = 12$ are parallel.

Section 2.4 Objective 2 Understanding the Definition of Perpendicular Lines
Write down the Theorem found in Objective 2:

Draw and label Figure 30 here:

Work through the video that accompanies Example 2 and write your notes here:
Show that the lines $3x-6y=-12$ and $2x+y=4$ are perpendicular.

Write down the Summary of Parallel and Perpendicular Lines following Example 2 here:

Write down the **Tip** seen on page 2.4-9.

Section 2.4 Objective 3 Determining Whether Two Lines Are Parallel, Perpendicular, or Neither

Watch the video that accompanies Example 3 and take notes here:

For each of the following pairs of lines, determine whether the lines are parallel, perpendicular, or neither.

a. $3x - y = 4$
$x + 3y = 7$

b. $y = \frac{1}{2}x + 3$
$x + 2y = 1$

c. $x = -1$
$x = 3$

Section 2.4 Objective 4 Finding the Equations of Parallel and Perpendicular Lines

You may want to turn back to your notes from Section 2.3 and write down the following equations of lines:

Point-Slope Form

Slope-Intercept Form

Standard Form

Horizontal Line

Vertical Line

Watch the video that accompanies Example 4 and take notes here:

Find the equation of the line parallel to the line $2x+4y=1$ that passes through the point $(3,-5)$. Write the answer in point-slope form, slope-intercept form, and standard form.

Watch the video that accompanies Example 5 and take notes here:
Find the equation of the line perpendicular to the line $y = -5x + 2$ that passes through the point $(3, -1)$. Write the answer in slope-intercept form.