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## [**Tiffany Hipkins**](https://ashford.instructure.com/courses/3058/users/39664)

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Math 221: Week 3 Discussion

y=x+4 This is my given equation

(1, -7) The parallel line is supposed to go through the **ordered pair**.

I have learned that two lines in a coordinate planes that do not intersect are parallel. Two non-vertical lines are parallel if and only if the **slopes** are the same. The **slope** that is provided is 1.

y-y1=m(x-x1) General form of the point slope equation

y-(-7) =1(x-(1) I plugged in the slope of the equation and the given points.

y+7=1(x-1) Then I looked at the signs that for two negatives turning to positives.

y+7=1x-1 The next step I took was to multiply the one by the parentheses.

y+7(-7) =1x-1(-7) Next I subtracted both sides by 7 to get the “y” variable by itself.

y=x-8 The answer that I got after combining the variables is the results for my parallel line.

The line has a y intercept is -8 from left to right to the origin and the x intercept is 8 located from top to bottom on the origin.

I learned that two non-vertical lines are perpendicular if an only if the product of their slopes are -1 and the slope is the **reciprocal** of a parallel lines slope. I will continue to use the general form of point slope equation. The perpendicular line must cross through the given points of (1, -7) So, the slope for a perpendicular equation is -1

y= x+4 This is the same equation that I was given

(1, -7) The given coordinates to use to plugged into the equation.

y-y1=m(x-x1) This is the general form of the point equation

y-(-7) =- 1(x-(1) I plugged in the points and my slope for this equation

y+7=-1x+1 A negative and a negative is a positive. Then I multiplied -1 to the terms inside the parenthesis eliminate the parenthesis.

y+7(-7) =-1x+1(-7) Next I subtracted 7 from both sides to get the “y” alone.

y=-1x-6 The line has a **y intercept** of -6 on the **origin**. And the **x intercept** is also at -6. I am a little unsure but would this equation mean undefined. I have watched to videos and read the E-book. I found the x intercept by plugging in zero for “y” and solved for x.