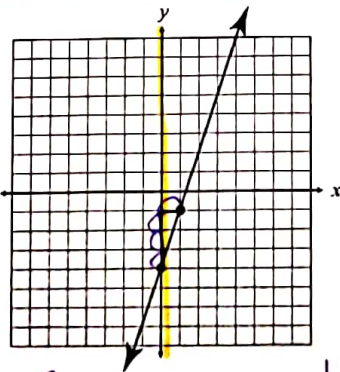
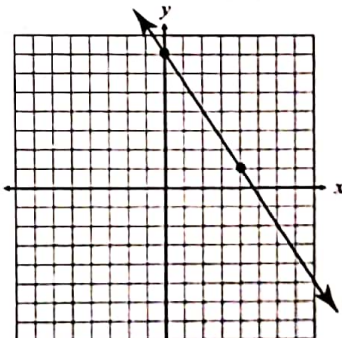
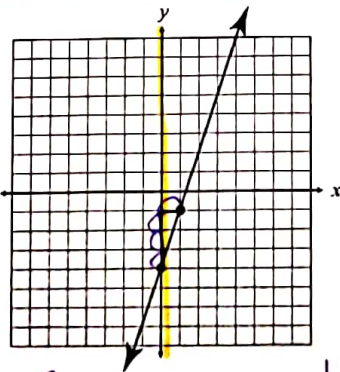
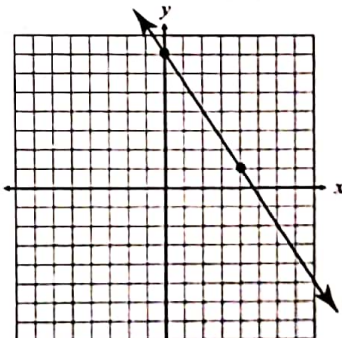
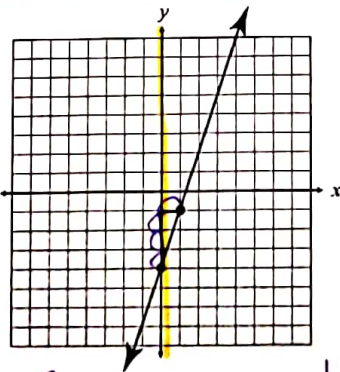
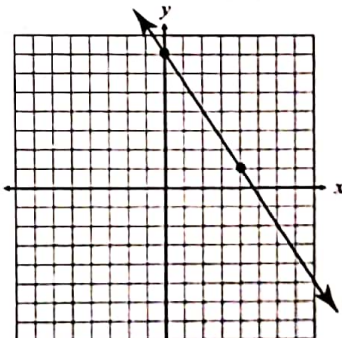
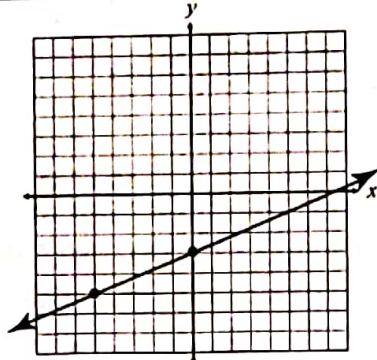


Name: <span style="font-size: 2em; font-family: cursive;">NOTES</span>	Date: _____
Topic: _____	Class: _____

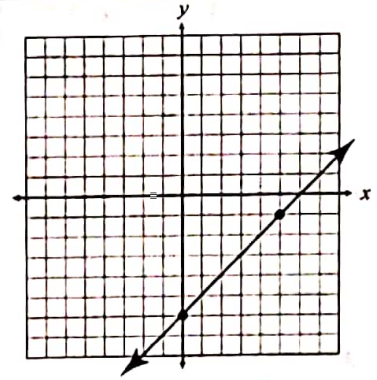
Main Ideas/Questions	Notes/Examples												
<h2>Slope-Intercept Form</h2>	<p>Linear equations are frequently written in <b>slope-intercept form</b>:</p> <div style="border: 1px solid black; padding: 10px; width: fit-content; margin: 10px auto;"> <math display="block">y = mx + b</math> </div> <p><math>m</math> is the <u>slope</u> and <math>b</math> is the <u>y-intercept</u></p>												
<h2>Examples</h2>	<p><b>Directions:</b> Given the slope and y-intercept of the line, write the equation in slope-intercept form.</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 5px;">1. slope = 2; y-intercept = -1</td> <td style="padding: 5px;"><u><math>y = 2x - 1</math></u></td> </tr> <tr> <td style="padding: 5px;">2. slope = <math>-\frac{3}{5}</math>; y-intercept = 4</td> <td style="padding: 5px;"><u><math>y = -\frac{3}{5}x + 4</math></u></td> </tr> <tr> <td style="padding: 5px;">3. slope = -3; y-intercept = 2</td> <td style="padding: 5px;"><u><math>y = -3x + 2</math></u></td> </tr> <tr> <td style="padding: 5px;">4. slope = -1; y-intercept = 7</td> <td style="padding: 5px;"><u><math>y = -1x + 7</math> or <math>y = -x + 7</math></u></td> </tr> <tr> <td style="padding: 5px;">5. slope = <math>\frac{1}{4}</math>; y-intercept = 0</td> <td style="padding: 5px;"><u><math>y = \frac{1}{4}x</math></u></td> </tr> <tr> <td style="padding: 5px;">6. slope = <math>-\frac{5}{2}</math>; y-intercept = -3</td> <td style="padding: 5px;"><u><math>y = -\frac{5}{2}x - 3</math></u></td> </tr> </table>	1. slope = 2; y-intercept = -1	<u><math>y = 2x - 1</math></u>	2. slope = $-\frac{3}{5}$ ; y-intercept = 4	<u><math>y = -\frac{3}{5}x + 4</math></u>	3. slope = -3; y-intercept = 2	<u><math>y = -3x + 2</math></u>	4. slope = -1; y-intercept = 7	<u><math>y = -1x + 7</math> or <math>y = -x + 7</math></u>	5. slope = $\frac{1}{4}$ ; y-intercept = 0	<u><math>y = \frac{1}{4}x</math></u>	6. slope = $-\frac{5}{2}$ ; y-intercept = -3	<u><math>y = -\frac{5}{2}x - 3</math></u>
1. slope = 2; y-intercept = -1	<u><math>y = 2x - 1</math></u>												
2. slope = $-\frac{3}{5}$ ; y-intercept = 4	<u><math>y = -\frac{3}{5}x + 4</math></u>												
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<h2>Given a Graph</h2>	<p><b>Directions:</b> Identify the slope and y-intercept of the line on the graph. Then, write the equation of the line in slope-intercept form.</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 5px; vertical-align: top;"> <p>7.</p>  <p style="margin-left: 20px;"><math>\frac{\text{Rise}}{\text{Run}} = \frac{3}{1}</math></p> <p><math>m = \underline{3}</math>    <math>b = \underline{-4}</math></p> <p>Equation: <u><math>y = 3x - 4</math></u></p> </td> <td style="width: 50%; padding: 5px; vertical-align: top;"> <p>8.</p>  <p><math>m = \underline{-\frac{6}{4} = -\frac{3}{2}}</math>    <math>b = \underline{7}</math></p> <p>Equation: <u><math>y = -\frac{3}{2}x + 7</math></u></p> </td> </tr> </table>	<p>7.</p>  <p style="margin-left: 20px;"><math>\frac{\text{Rise}}{\text{Run}} = \frac{3}{1}</math></p> <p><math>m = \underline{3}</math>    <math>b = \underline{-4}</math></p> <p>Equation: <u><math>y = 3x - 4</math></u></p>	<p>8.</p>  <p><math>m = \underline{-\frac{6}{4} = -\frac{3}{2}}</math>    <math>b = \underline{7}</math></p> <p>Equation: <u><math>y = -\frac{3}{2}x + 7</math></u></p>										
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9.



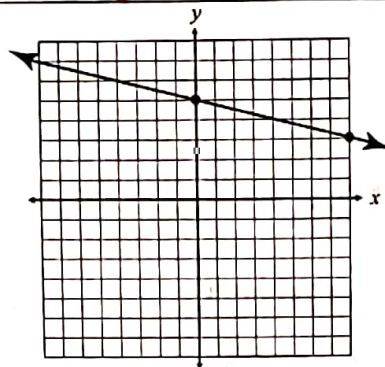
Equation:  $y = \frac{2}{5}x - 3$

10.



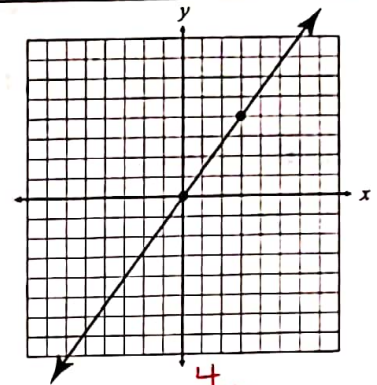
Equation:  $y = x - 2$

11.



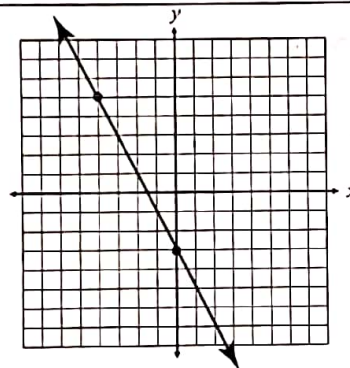
Equation:  $y = -\frac{1}{4}x + 5$

12.



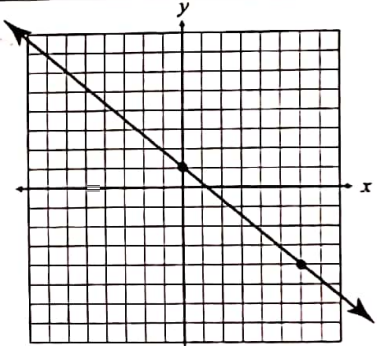
Equation:  $y = \frac{4}{3}x$

13.



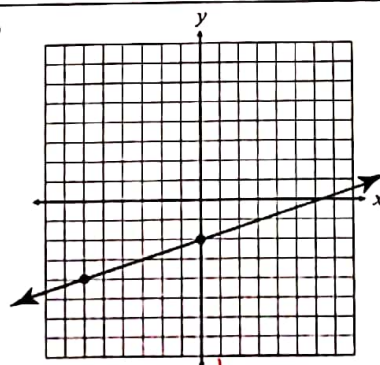
Equation:  $y = -2x - 3$

14.



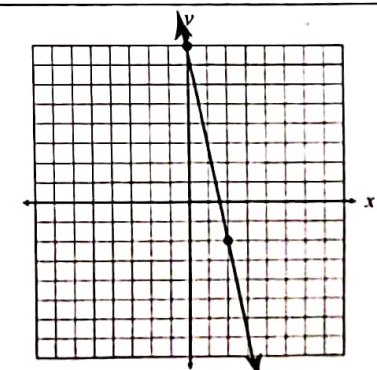
Equation:  $y = -\frac{5}{6}x + 1$

15.



Equation:  $y = \frac{1}{3}x - 2$

16.



Equation:  $y = -5x + 8$

on 10/30 homework

#4  $\begin{matrix} x & y \\ (-5, & 4) \end{matrix}$   $m = -3$   $y = mx + b$

2nd

$$\begin{aligned} 4 &= -3(-5) + b \\ 4 &= 15 + b \\ -15 & \quad -15 \\ \hline -11 &= b \end{aligned}$$

$$y = -3x - 11$$

#4  $\begin{matrix} x & y \\ (-5, & 4) \end{matrix}$   $m = -3$

$(x, y)$   
 $y = mx + b$   
↑ slope      ↑ y-int

4th

$$\begin{aligned} 4 &= -3(-5) + b \\ 4 &= 15 + b \\ -15 & \quad -15 \\ \hline -11 &= b \end{aligned}$$

$$y = -3x - 11$$

#4  $\begin{matrix} x & y \\ (-5, & 4) \end{matrix}$   $m = -3$

$(x, y)$   
 $y = mx + b$  ← y-int  
↑ slope

6th

$$\begin{aligned} 4 &= -3(-5) + b \\ 4 &= 15 + b \\ -15 & \quad -15 \\ \hline -11 &= b \end{aligned}$$

$$y = -3x - 11$$