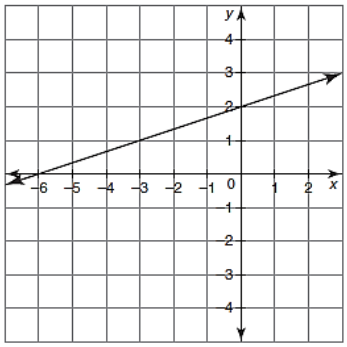
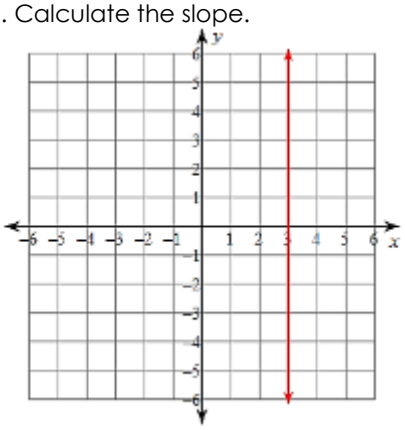
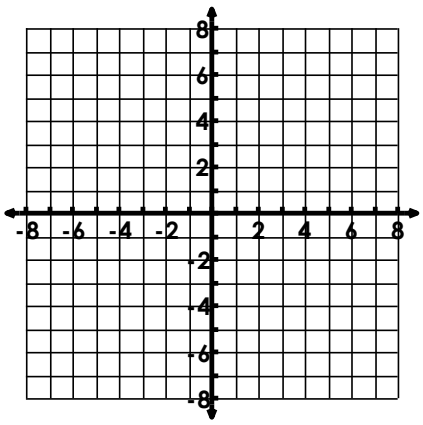
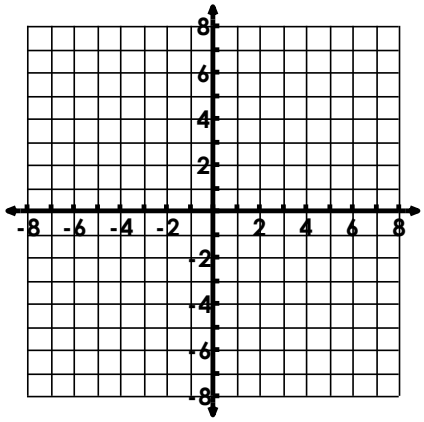
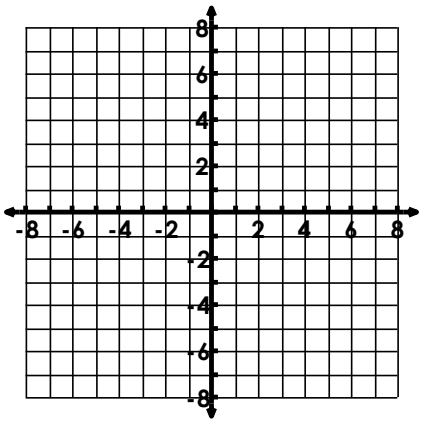
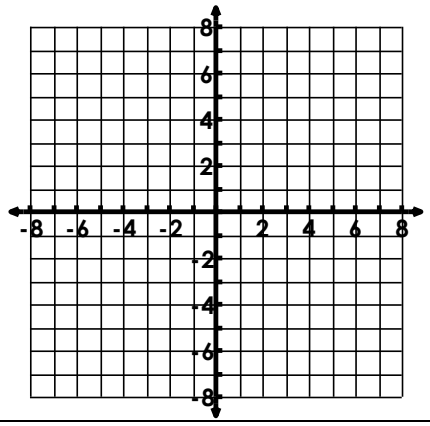
Algebra 1
Unit 5

Name:_____
Date:_____ Block:_____

**Unit 5: Linear Functions Review**

<table>
<tr><th>What you need to know & be able to do</th><th>Things to remember</th><th colspan="2">Examples</th></tr>
<tr><td rowspan="2">1. Calculate the slope (rate of change)</td><td rowspan="2">"slope"<br><br>$m = \frac{y_2 - y_1}{x_2 - x_1}$<br><br>$\frac{\text{Change in y}}{\text{Change in x}}$</td><td>a. Calculate the slope. Then write the equation of the line.<br>  </td><td>b. Calculate the rate of change between the following points on a line.<br><br>(0, -4) & (-3, 11)</td></tr>
<tr><td>c. Calculate the slope.<br><table><tr><th>x</th><th>y</th></tr><tr><td>−1</td><td>13</td></tr><tr><td>0</td><td>−2</td></tr><tr><td>4</td><td>−62</td></tr><tr><td>10</td><td>−152</td></tr></table></td><td>d. Calculate the slope.<br>  </td></tr>
<tr><td>2. Calculate the y-intercept</td><td>Point where graph crosses y-axis<br><br>(0, b)</td><td>a. Name the y-intercept:<br><table><tr><td>x</td><td>0</td><td>1</td><td>3</td><td>4</td></tr><tr><td>y</td><td>8</td><td>6</td><td>2</td><td>0</td></tr></table></td><td>b. Name the y-intercept:<br><table><tr><th>X</th><th>Y</th></tr><tr><td>2</td><td>3</td></tr><tr><td>5</td><td>9</td></tr><tr><td>6</td><td>11</td></tr><tr><td>8</td><td>15</td></tr><tr><td>10</td><td>19</td></tr></table></td></tr>
</table>

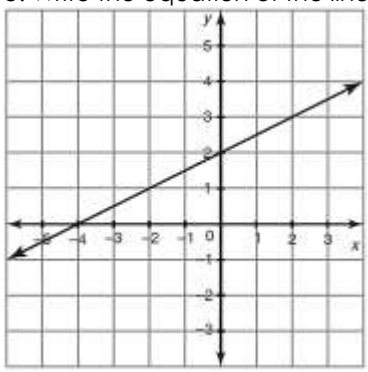
<table>
<tr>
<td rowspan="2">3. Graph a linear function</td>
<td rowspan="2">$y = mx + b$<br><br>*Always graph the y-intercept first and then use slope to determine next point.<br><br>HOY VUX</td>
<td>a. Graph: $f(x) = -\frac{2}{3}x + 6$<br>  </td>
<td>b. Graph: $-4x + 2y = 12$<br>  </td>
</tr>
<tr>
<td>c. Graph x = -3. Name slope & y-intercept<br>  </td>
<td>d. Graph y = 4. Name slope & y-intercept.<br>  </td>
</tr>
<tr>
<td>4. Convert from standard to slope intercept form</td>
<td>Slope Intercept:<br>y =mx + b<br><br>Standard: Ax + By = C</td>
<td>a. Solve for y: 4x + 2y = 8</td>
<td>b. Determine the slope and y-intercept:<br>3x – 6y = -12.</td>
</tr>
<tr>
<td>5. Write the equation of a line.</td>
<td>$y = mx + b$</td>
<td>a. Write the equation of the line that has a slope of $-\frac{1}{2}$ and contains the point (4, 6).</td>
<td>b. Write the equation of the line that contains the points (-2, 2) and (2, -6).</td>
</tr>
</table>

c. Write the equation of the line that has a slope of 5 and y-intercept at (0, 3).

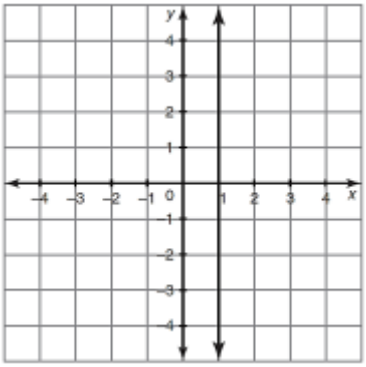
d. Write the equation of the line the corresponds to the following table:

| x | 2 | 4 | 6 | 8 |
|---|---|---|---|---|
| y | -6 | -4 | -2 | 0 |

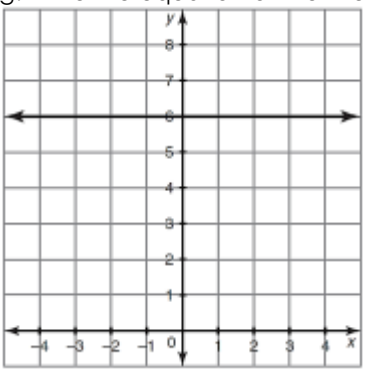
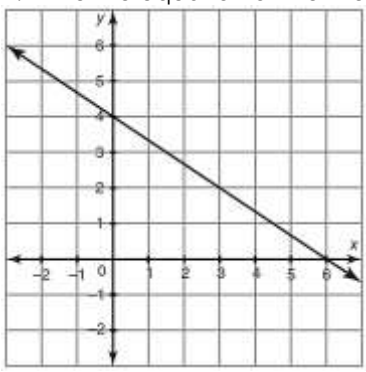
e. Write the equation of the line:



f. Write the equation of the line:



g. Write the equation of the line:



h. Write the equation of the line: