1.) Solve the inequality and name three solutions:

\[-2x + 7 < 17\]

\[-2x < 10\]

\[-2x < -2\]

\[x > -5\]

\[-4, -3, -2, ...\]

2.) Find the slope: \((-2, 4)\) and \((-6, 9)\).

\[m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{9 - 4}{-6 - (-2)} = \frac{5}{-4} = -\frac{5}{4}\]

3.) Twice a number added to four is the same as one subtracted from the number. What is the number?

\[2x + 4 = x - 1\]

\[-x\]

\[x + 4 = -1\]

\[-4\]

\[x = -5\]
13. Which graph represents the line $y = \frac{2}{3}x - 2$?

- Option A: $b = 2$
- Option C: $m = \frac{2}{3}$
- Option D: $m = \frac{2}{3}$

14. Which best represents the equation of the line?

- Option A: $y = 2x$
- Option B: $y = \frac{1}{2}x + 1$
- Option C: $y = -2x - 1$
- Option D: $y = \frac{1}{2}x - 1$

*Note: The text "neg. slope" is handwritten in the image.*
Write the equation of the table below.

<table>
<thead>
<tr>
<th>X</th>
<th>3</th>
<th>6</th>
<th>9</th>
<th>12</th>
<th>15</th>
<th>18</th>
<th>21</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>10</td>
<td>12</td>
<td>14</td>
<td>16</td>
</tr>
</tbody>
</table>

Unfortunately, the y-intercept cannot always be found by looking at the table.

Option #1: Work Backwards

Fill in the table for $x = 0$

<table>
<thead>
<tr>
<th>X</th>
<th>3</th>
<th>6</th>
<th>9</th>
<th>12</th>
<th>15</th>
<th>18</th>
<th>21</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
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<td>6</td>
<td>8</td>
<td>10</td>
<td>12</td>
<td>14</td>
<td>16</td>
</tr>
</tbody>
</table>

Option #2: Use the Point-Slope Formula

$m = \frac{2}{3}$

$b = 2$

$y = \frac{2}{3}x + 2$
### Writing Linear Equations

**Main Ideas/Questions**

**Writing Linear Equations**
(Given a Point and Slope)

<table>
<thead>
<tr>
<th>Main Ideas/Questions</th>
<th>Notes/Examples</th>
</tr>
</thead>
</table>

To write the equation of the line passing through point \((x_1, y_1)\) with slope \((m)\), you can use the point-slope formula:

**Point-Slope Formula:**

\[
y - y_1 = m(x - x_1)
\]

*Be sure to distribute and solve for \(y\)!*

---

**For tables without \(x = 0\)**

<table>
<thead>
<tr>
<th>(X)</th>
<th>3</th>
<th>6</th>
<th>9</th>
<th>12</th>
<th>15</th>
<th>18</th>
<th>21</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Y)</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>10</td>
<td>12</td>
<td>14</td>
<td>16</td>
</tr>
</tbody>
</table>

\[
m = \frac{2}{3} \quad ; \quad \left(9, 8\right)
\]

\[
(y - y_1) = m(x - x_1)
\]

\[
y - 8 = \frac{2}{3}(x - 9)
\]

\[
y = \frac{2}{3}x - 6 + 8
\]

\[
y = \frac{2}{3}x + 2
\]
Writing an equation given a point and the slope.

1. (4, 1); slope = 2
   \[ y - y_1 = m(x - x_1) \]
   \[ y - 1 = 2(x - 4) \]
   \[ y - 1 = 2x - 8 \]
   \[ 0 + 1 = 2x - 7 \]
   \[ y = 2x - 7 \]

2. (2, 4); slope = \( \frac{1}{2} \)
   \[ y - y_1 = m(x - x_1) \]
   \[ y - 4 = \frac{1}{2}(x - 2) \]
   \[ y - 4 = \frac{1}{2}x - 1 \]
   \[ 0 + 4 = \frac{1}{2}x + 3 \]
   \[ y = \frac{1}{2}x + 3 \]

3. (-6, 0); slope = \( \frac{2}{3} \)
   \[ y - y_1 = m(x - x_1) \]
   \[ y - 0 = \frac{2}{3}(x + 6) \]
   \[ y = \frac{2}{3}x + 4 \]

4. (-8, -1); slope = \( -\frac{3}{4} \)
   \[ y - y_1 = m(x - x_1) \]
   \[ y + 1 = -\frac{3}{4}(x + 8) \]
   \[ 0 + 1 = -\frac{3}{4}x - 1 \]
   \[ y = -\frac{3}{4}x - 7 \]
Warm Up

November 1, 2018

1.) If \( x \) is an integer, what is the minimum value of \( x \) that satisfies the inequality?
\[-7(x - 2) + 1 < x\]

2.) Arianna went to Marshall's and purchased a shirt for $21.75 and socks for $3.99. If tax was 7.5%, what was her total bill?

3.) Identify the slope and \( y \)-intercept:
\[2y + 5x = 16.\]
To write a linear equation given two points, \((x_1, y_1)\) and \((x_2, y_2)\), follow this process:

1. Use the Slope Formula
2. Use the Point-Slope Formula

<p>| 7. ((-3, 7)) and ((1, -1)) | 8. ((-6, -7)) and ((3, -4)) |</p>
<table>
<thead>
<tr>
<th>Question</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.</td>
<td>(2, -1) and (4, -6)</td>
</tr>
<tr>
<td>10.</td>
<td>(-3, -8) and (2, 7)</td>
</tr>
</tbody>
</table>