1. A **relation** is a set of ordered pairs.

A **function** is a relation in which each **input** / independent (**x** value) corresponds to exactly one **output** / dependent (**y** value). *Hint: every input (**x**-value) is DIFFERENT!*  

3. Examples:

<table>
<thead>
<tr>
<th>Input</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>-2</td>
<td>-4</td>
</tr>
<tr>
<td>-1</td>
<td>-1</td>
</tr>
<tr>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>1</td>
<td>5</td>
</tr>
</tbody>
</table>

Yes

4. **DOMAIN** = the set of all **x** values. Example: \{ \} and \{ \}

5. **RANGE** = the set of all **y** values. Example: \{ \} and \{ \}

6. If you do not have a table of input and output values, and you are given a GRAPH instead, you can still determine if it is a **function** by using the **vertical line test**.

7. Examples:  

8. REVIEW: A **linear** equation does NOT have any **exponents** in it. \( y = mx + b \) is a true example, or **x** as denominators.

9. NOW, let's take what we learned with SLOPE and reverse/apply the knowledge. Take the following linear equations and GRAPH the slope line 😊

\[
\begin{align*}
  y &= -2x + 4 \\
  y &= -\frac{1}{3}x + 0 \\
  x - 2y &= 6 \\
  6x + 6y &= 24
\end{align*}
\]