3.1 Graphing Equations

(Lecture notes pg. 35)

\[ \frac{N}{0} = \text{"No" Undefined} \]

\[ \frac{0}{k} = \text{"Ok" Zero} \]

33. \[ y = -\frac{1}{3}x + 1 \]

\[ \frac{1}{3}x - y = 1, \quad \rightarrow \text{Yes linear} \]

37. \[ y = |x + 1| \]

When you see absolute value bars, first find the variable value that makes the inside zero.

\[ x + 1 = 0 \]

\[ x = -1 \]

If \( x = -3 \), then \[ y = |-3 + 1| = |-2| = 2 \]

If \( x = -2 \), then \[ y = |-2 + 1| = |-1| = 1 \]
3.4 Graphing Equations

(Lecture notes pg. 35)

\[
\frac{N}{0} = \text{“No” undefined}
\]

\[
\frac{0}{k} = \text{“Ok” Zero}
\]

3) See screen

\[
y = -\frac{1}{3}x - 1
\]

\[
\frac{-2}{3}\text{x} + y = -1
\]

\[
\rightarrow \text{Yes linear}
\]

82) \[y = |x + 1|\]

<table>
<thead>
<tr>
<th>(x)</th>
<th>(y)</th>
</tr>
</thead>
<tbody>
<tr>
<td>-3</td>
<td>2</td>
</tr>
<tr>
<td>-2</td>
<td>1</td>
</tr>
<tr>
<td>-1</td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>1</td>
<td>3</td>
</tr>
</tbody>
</table>

*When you see absolute value bars, first find the variable value that makes the inside zero.*

\[
x + 1 = 0
\]

\[
x = -1
\]

If \(x = -3\), then \(y = |-3 + 1| = |-2| = 2\)

If \(x = -2\), then \(y = |-2 + 1| = |-1| = 1\)
If $x = -1$, then $y = |-1 + 1| = |0| = 0$

If $x = 0$, then $y = |0 + 1| = |1| = 1$

If $x = 1$, then $y = |1 + 1| = |2| = 2$

What $x$ value is farthest from zero?

What $y$ value is farthest from zero?

$x$-scale: -5 to 5

$y$-scale: -5 to 5

Graph $|x| = y^3 + 1$

Assume values for $y$.

<table>
<thead>
<tr>
<th>$x$</th>
<th>$y$</th>
</tr>
</thead>
<tbody>
<tr>
<td>-7</td>
<td>2</td>
</tr>
<tr>
<td>0</td>
<td>-1</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>0</td>
</tr>
</tbody>
</table>

Pick "easy" numbers, with a mix of positive, negative, and zero

If $y = -2$, then $x = (-2)^3 + 1 = -7$

If $y = -1$, then $x = (-1)^3 + 1 = 0$

If $y = 0$, then $x = (0)^3 + 1 = 1$

If $y = 1$, then $x = (1)^3 + 1 = 2$

If $y = 2$, then $x = (2)^3 + 1 = 9$
3.1.1  See SCREEN  \[
\begin{align*}
y &= 50x \\
\left(-50k + b\right) &= 0
\end{align*}
\]

Cannot be negative

\[
\begin{array}{c|c|c}
X & Y \\
0 & 0 \\
1 & 50 \\
2 & \text{[ drawn, not shown]}
\end{array}
\]

If \( x = 0 \), then \( y = 50(0) = 0 \)

If \( x = 1 \), then \( y = 50(1) = 50 \)

\( X \)-scale: 0 to 5
\( Y \)-scale: 0 to 50

Ray
Line