Exceptions in the Equation of a Straight Line
(horizontal, vertical, don’t see an “a” value, don’t see a “b” value)

1. Identify the slope and y-intercept, then write the equation of the line in the Cartesian-grid below:

![Graph](image1.png)

2. Identify the slope and y-intercept, then write the equation of the line in the Cartesian-grid below:

![Graph](image2.png)

3. Identify the slope and y-intercept, then write the equation of the line in the Cartesian-grid below:

![Graph](image3.png)
Exceptions in the Equation of a Straight Line
(horizon\(t\)al, vertical, don’t see an “a” value, don’t see a “b” value)

1. Identify the slope and \(y\)-intercept, then write the equation of the line in the Cartesian-grid below:

\[
\begin{align*}
a &= \frac{y_2 - y_1}{x_2 - x_1} = \frac{-3 - (-3)}{2 - (-4)} = \frac{0}{2} = 0 \\
y &= ax + b \\
y &= 0 \times x + b \\
-3 &= 0 \times (2) + b \\
-3 &= b \\
\rightarrow y &= -3
\end{align*}
\]

2. Identify the slope and \(y\)-intercept, then write the equation of the line in the Cartesian-grid below:

\[
\begin{align*}
a &= \frac{y_2 - y_1}{x_2 - x_1} = \frac{-2 - y}{4 - 4} = \frac{-6}{0} = \text{impossible} \\
\rightarrow \text{The } x\text{-value is always } x = 4
\end{align*}
\]

3. Identify the slope and \(y\)-intercept, then write the equation of the line in the Cartesian-grid below:

\[
\begin{align*}
a &= \frac{y_2 - y_1}{x_2 - x_1} = \frac{-2 - 2}{5 - (-5)} = \frac{-4}{10} = -0.4 \\
y &= ax + b \\
y &= -0.4x + b \\
-2 &= -0.4(5) + b \\
-2 &= -2 + b \\
+2 &= b \\
0 &= b \\
\rightarrow y &= -0.4x
\end{align*}
\]
4. Identify the slope and y-intercept, then write the equation of the line in the Cartesian-grid below:

5. Isolate ‘y’ in the following equation, then identify the slope and y-intercept of the rule:

\[ 5x + 5y = 0 \]

6. Isolate ‘y’ in the following equation, then identify the slope and y-intercept of the rule:

\[ 2x - 3y - 30 = 0 \]
4. Identify the slope and y-intercept, then write the equation of the line in the Cartesian-grid below:

\[ a = \frac{y_2 - y_1}{x_2 - x_1} = \frac{5 - 0}{5 - 0} = \frac{5}{5} = 1 \]

\[ y = ax + b \]

Answer:
\[ y = 1x + b \]

or
\[ y = 1x \]

or
\[ y = x \]

5. Isolate 'y' in the following equation, then identify the slope and y-intercept of the rule:

\[ 5x + 5y = 0 \]

\[ -5y \]

\[ \frac{-5x}{5} = \frac{-5x + 0}{5} \]

\[ y = -1x + 0 \]

or

\[ y = -x \]

Answer:
\[ a = -1 \]

\[ b = 0 \]

6. Isolate 'y' in the following equation, then identify the slope and y-intercept of the rule:

\[ 2x - 3y - 30 = 0 \]

\[ -2x \]

\[ 3y \]

\[ -2x + 30 \]

\[ -3 \]

\[ \frac{-3y}{-3} = \frac{-2x + 30}{-3} \]

\[ y = 0.6x - 10 \]

Answer:
\[ a = 0.6 \]

\[ b = -10 \]