Equations of Lines-Part 1

1. Find the equation of a line given the slope and y-intercept.
2. Find the equation of a line given the slope and a point.

Find the equation of the line with the given information. Write answers in slope-intercept form, if possible.

You will need to know 2 formulas:
   1. Slope-intercept formula: \( y = mx + b \)
   2. Point-Slope formula. \( y - y_1 = m(x - x_1) \)

Ex. #1: \( m = \frac{2}{5}; \) y-intercept = -5

Ex. #2: \( m = 0; \) y-intercept = -\( \frac{1}{2} \)

Find an equation of a line given a slope and a point:
Use the Point-Slope Formula: \( y - y_1 = m(x - x_1) \)
\( m = \) slope \hspace{1cm} Point \((x_1, y_1)\)

Ex. #3: \( m = 5; \) through (-2,1)

Ex. #4: \( m = -\frac{3}{5}; \) through (-4,-2)
Extra Practice: \( m = \frac{2}{3} \); through (4, -1)

<table>
<thead>
<tr>
<th>Horizontal</th>
<th>Vertical</th>
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<tbody>
<tr>
<td>Equation: ( y = ) number</td>
<td>Equation: ( x = ) number</td>
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<tr>
<td>( m = 0 ) only has a y-intercept</td>
<td>( m ) is undefined only has an x-intercept</td>
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Ex. #5: \( m = 0 \); through (-5, 3)  
Ex. #6: \( m \) is undefined; through (-2, -7)