

Section 1.3

Linear Functions, Slope, and Applications

Introduction

Standard Form of a Line

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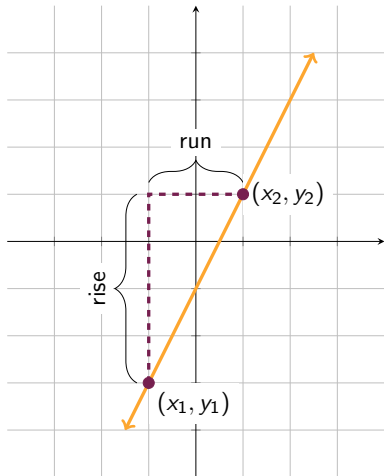
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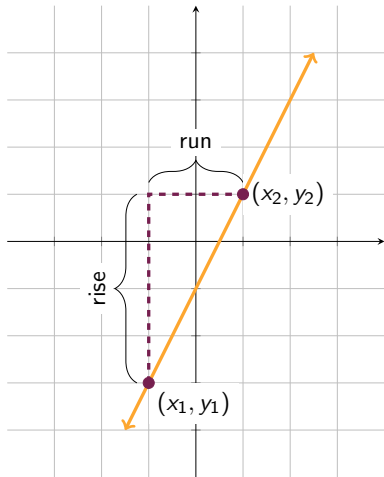
- ❖ This is called the *standard form* of a linear equation.
- ❖ The graph of a linear equation is a straight line.

Slope



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- ❖ The slope is represented by the variable m , and it's given by:

$$m = \frac{\text{rise}}{\text{run}} = \frac{y_2 - y_1}{x_2 - x_1}$$

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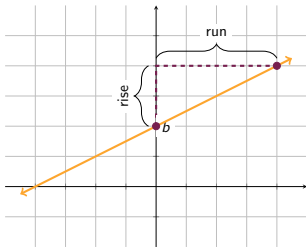
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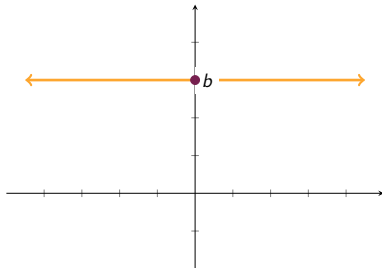
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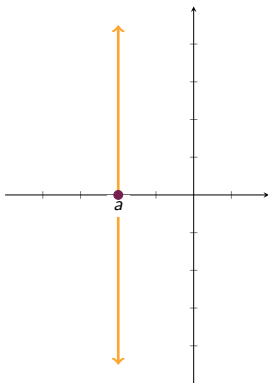
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$$2b^2 + y$$

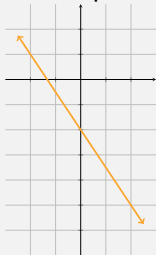
Examples (continued)

4. Find the slope (if it exists),
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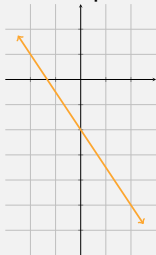
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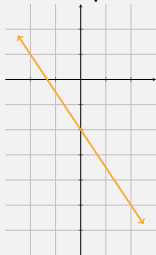


5. Find the slope (if it exists),
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Examples (continued)

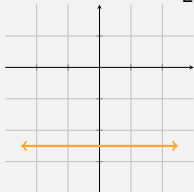
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5. Find the slope (if it exists),
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Slope: 0
y-intercept: $-\frac{5}{2}$



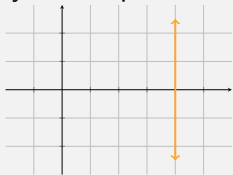
Examples (continued)

6. Find the slope (if it exists),
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Slope: undefined
y-intercept: none



Applications

Example

Superior Cable Television charges a \$95 installation fee and \$125 per month for the Star plan. Write an equation that can be used to determine the total cost, $C(t)$, for t months of the Star plan. Then find the total cost for 18 months of service.

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$$C(t) = 125t + 95$$

\$2345 for 18 months of service.