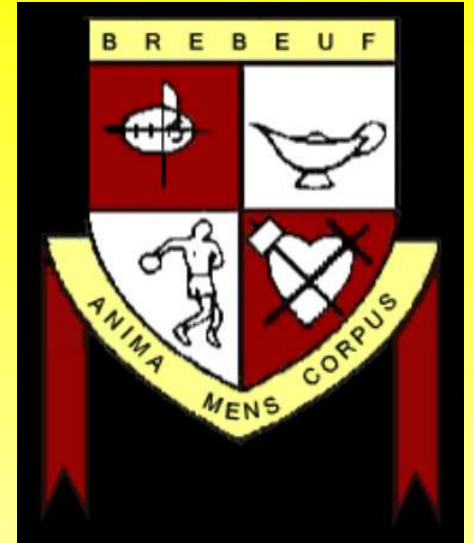
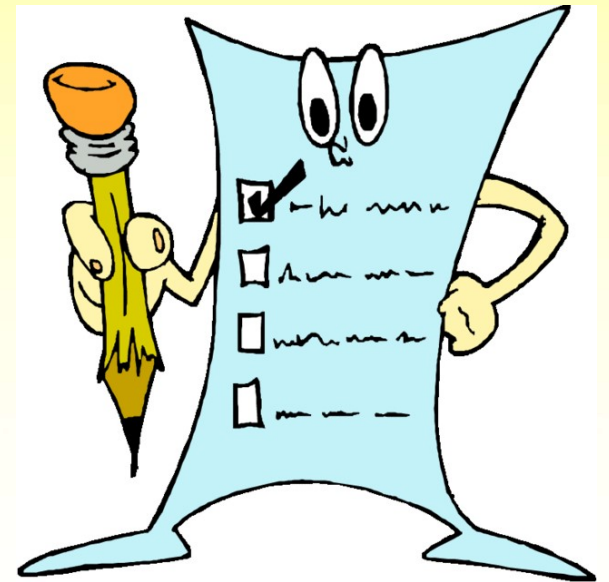


ST. JEAN DE BREBEUF MATHEMATICS



CHAPTER 3.2

INVESTIGATE SLOPE AND y -INTERCEPT



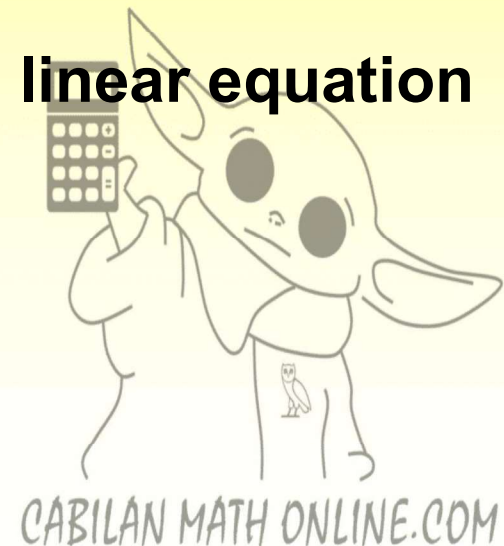
CHAPTER 3.2 INVESTIGATE SLOPE AND y-INTERCEPT

KEY CONCEPTS

Any linear relation can be modelled by an equation of the form $y = mx + b$,

where m represents the slope of the line and b represents the point where the line crosses the y -axis, the **y-intercept**.

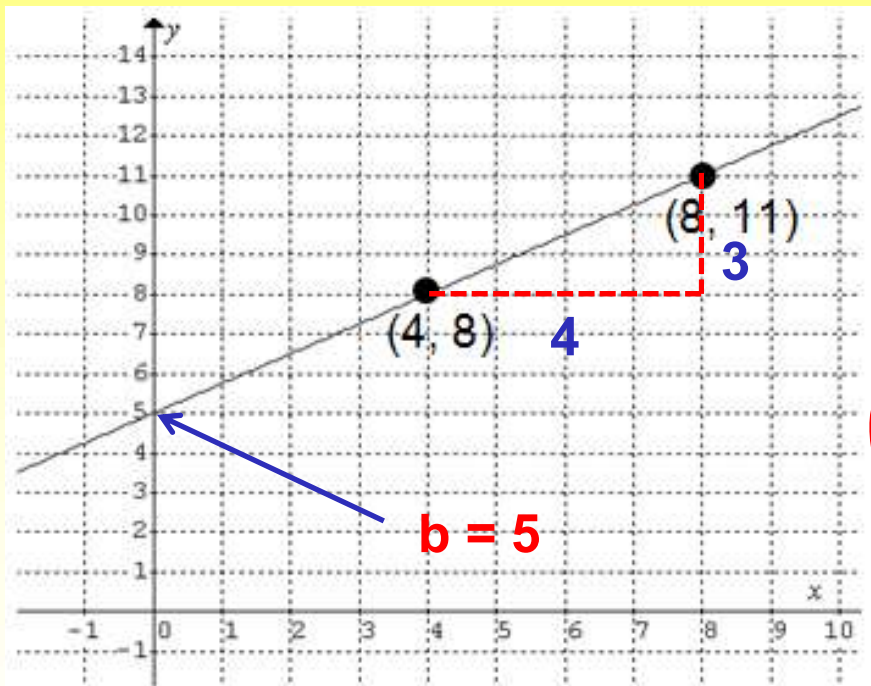
Conversely, if m and b can be determined, a **linear equation** can be generated.



CHAPTER 3.2 INVESTIGATE SLOPE AND y-INTERCEPT

EXAMPLE 3 Equations of Lines

(a) Using the information on the graph, determine the equation of the line in the form $y = mx + b$, where m represents the slope and b represent the y -intercept.



Step 1: Find the **slope** of the line

$$\text{slope}(m) = \frac{\text{rise}}{\text{run}}$$

$$\text{slope}(m) = \frac{3}{4}$$

Step 2: Find the **y-intercept**

$$\text{y-intercept } (b) = 5$$

Step 3: Substitute the **m** and **b** into the equation

$$y = mx + b$$

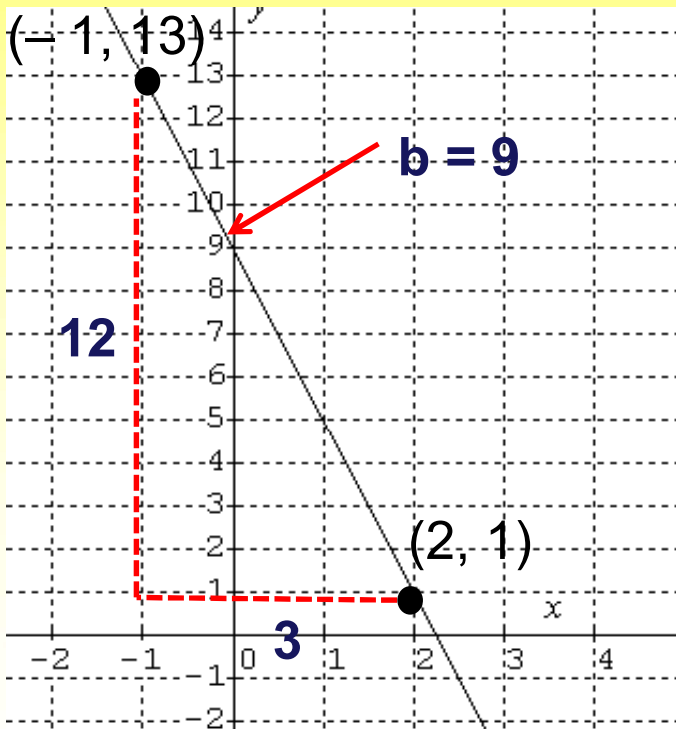
$$y = \frac{3}{4}x + 5$$

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CHAPTER 3.2 INVESTIGATE SLOPE AND y-INTERCEPT

EXAMPLE 3 Equations of Lines

(b) Using the information on the graph, determine the equation of the line in the form $y = mx + b$, where m represents the slope and b represent the y-intercept.



Since this line *falls* to the right
→ Slope will be **NEGATIVE**

Step 1: Find the **slope** of the line

$$\text{slope}(m) = \frac{\text{rise}}{\text{run}}$$

$$= -\frac{12}{3}$$
$$m = -4$$

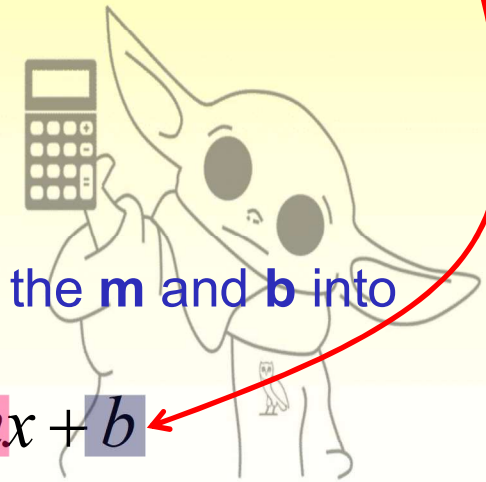
Step 2: Find the **y-intercept**

$$\text{y-intercept } (b) = 9$$

Step 3: Substitute the **m** and **b** into the equation

$$y = mx + b$$

$$y = -4x + 9$$



CHAPTER 3.2 INVESTIGATE SLOPE AND y-INTERCEPT

Homework:

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