



## Problem 1- Visually estimating slopes

Press [APPS] and select Cabri Jr. Open the file **MATHMAN**.

Math Man is cross-country skiing from left to right.

- Which part(s) of the hill has the best “ski slope” for Math Man? Explain.

Now open the file **DIPPER**. You will see a representation of the “Big Dipper”, a formation commonly recognized in the night sky.

The slopes of the lines of the segments are:

$\{-0.1, -0.2, -0.4, -9.5, -1.4, 2.7\}$

- Each segment is labeled with a letter. Match the slope with the segment. Record your answers below.
- How did you determine which slope belonged with which segment?

## Self-Check Point

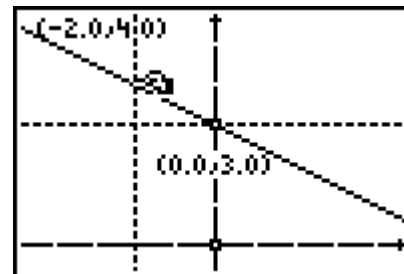
- I already know about  $y = mx + b$  and what each letter means. True False

## Problem 2 – Exploring precise slope

Open the file **SLOPE**.

Move the point at  $(-2, 4)$ , so the solid line has a slope of  $\frac{2}{3}$ .

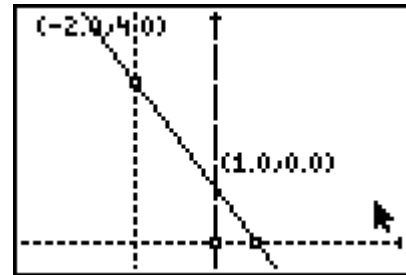
- What are the coordinates of your point?
- How did you determine where to place your point?
- What is the equation of the line in slope-intercept form?





Move the point at  $(0, 3)$  to  $(1, 0)$ . Now move the other point so that you have the line  $y = x - 1$ .

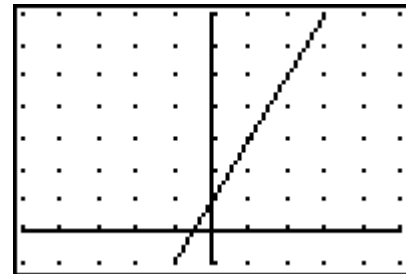
- What is the slope of the line?
- What are the coordinates of your point?
- Did your method of placing the point change? Explain why or why not.



### Problem 3 – Slope-Intercept Equation

Use the graph at the right to answer the following questions. The points  $(0, 1)$  and  $(1, 3)$  are on the line.

- What is the slope of the line?
- What is the  $y$ -intercept of the line?
- What is the equation of the line?



### Problem 4 – Assessing Understanding

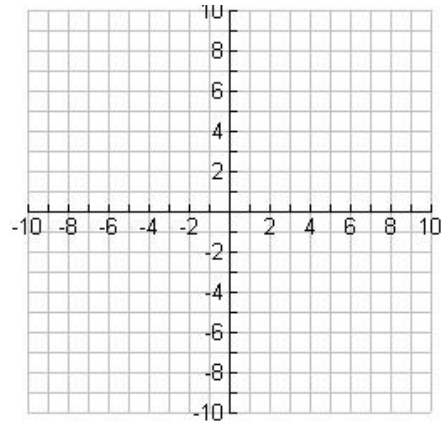
- What kind of line has a slope equal to 0?
- Name the slope and  $y$ -intercept:  $y = -3x + 1$
- Name the slope and  $y$ -intercept:  $y = \frac{2}{5}x - 8$
- Name the slope:  $y + x = 9$
- Name the slope:  $y = -4$



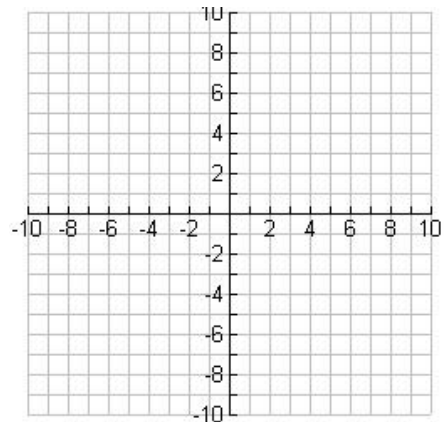
- True or False:  $(0, 6)$  is the  $y$ -intercept of  $y = 2x - 6$ .
- True or False:  $(0, 0)$  is the  $y$ -intercept of  $y = -3x$ .
- True or False:  $(0, 4)$  is an  $x$ -intercept since  $x = 0$ .

## Extensions/Homework

1. Draw a line on the graph at the right with  $y$ -intercept  $(0, 4)$  and any positive slope. Write its equation.



2. Draw a line on this worksheet that goes through  $(8, 3)$  and has slope  $m = 1$ . Write its equation.



3. Draw a horizontal line that goes through  $(4, -1)$ . Write its equation.

