



### Problem 1- Visually estimating slopes

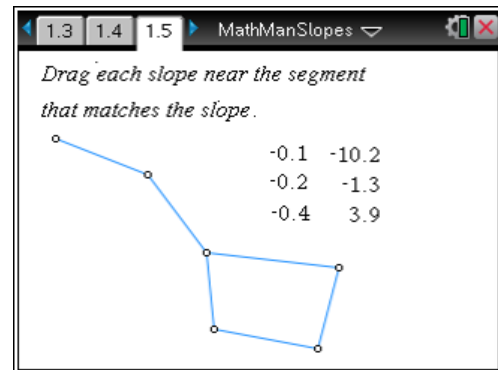
On page 1.3, view the slopes of the hill.

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

On page 1.4 and 1.5, you will see a formation of stars called the “Big Dipper”.

Drag the slope numbers near the segment that you feel has that slope value.

- Label the diagram at the right with where you placed each slope.



Use pages 1.7 and 1.8 to rate yourself.

- How did you do on placing the slopes next to the segment that has that slope?
- I already know about  $y = mx + b$  and what each letter means.

### Problem 2 – Exploring precise slope

On page 2.1, the open circle is your drag point. Move it until you have a slope of  $\frac{2}{3}$ .

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



On page 2.2, drag the open circle until you have the line  $y = x - 1$ .

- What is the slope? What are the coordinates of your point?
- Did your method of determining where to place the point change? Explain why.

### Problem 3 – Slope-Intercept Equation

Use the graph on page 3.1 to answer the following questions.

- 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

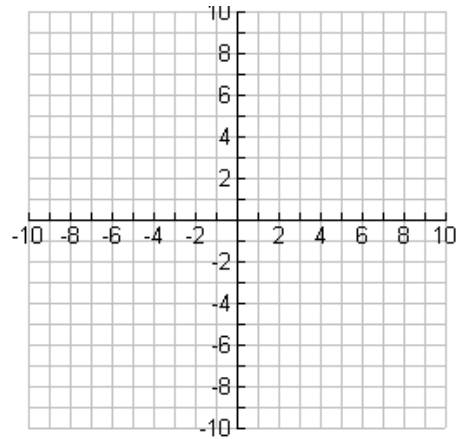
The sliders on page 4.2 will change the slope and  $y$ -intercept of the line. Use this page to answer the questions on page 4.3 to 4.10, which will assess your level of understanding.

- 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  $x = 0$ .

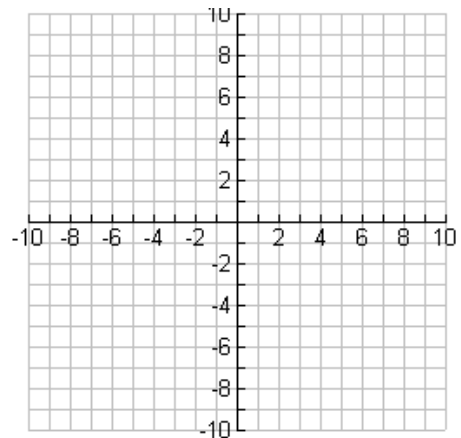


## Extensions/Homework

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.

