Exploring Slopes of Lines Name \_ On the Graphing Calculator Date \_

1) Google the words “Graphing Calculator”. Click on the second hit. Or, use this URL:

<http://my.hrw.com/math06_07/nsmedia/tools/Graph_Calculator/graphCalc.html>

2) Enter the following linear functions into y1, y2, y3, and y4. Select “GRAPH”, then answer the questions that follow. (Note: Lines are color-coded so the equation and graph can be easily compared for each of the lines.)

y1 = 2x + 1 y2 = x + 1

y3 = 0.5x + 1 y4. = 0.2x + 1

A) What do you notice about lines with positive slopes?

B) What happens to the lines as the positive slopes increase?

C) What ordered pair represents the point where these lines meet?

3) Enter the following linear functions into y1, y2, y3, and y4. Select “GRAPH”, then answer the questions that follow.

y1 = -2x + 3 y2 = -x + 3

y3 = -0.5x + 3 y4. = -0.2x + 3

A) What do you notice about lines with negative slopes?

B) What happens to the lines as the negative slopes decrease?

C) What ordered pair represents the point where these lines meet?

4) Enter the following linear functions into y1, y2, y3, and y4. Select “GRAPH”, then answer the questions that follow.

y1 = 0x + 5 y2 = 0x + -5 y3 = 0x + 2 y4. = 0x + -2

A) What do you notice about lines with slopes of zero?

B) How are these lines related to one another?

C) Why doesn’t it make sense to ask the same question for Part C for these lines as was asked in the previous two sets of linear equations?

5) Enter the following linear functions into y1, y2, y3, and y4. Select “GRAPH”, then answer the questions that follow.

y1 = 2x + 5 y2 = 2x - 5 y3 = 2x + 2 y4. = 2x

A) What do you notice about lines with the same slope?

B) Explain how this relationship is possible.

6) Enter the following linear functions into y1, y2, y3, and y4. Select “GRAPH”, then answer the questions that follow.

y1 = 2x + 5

y2 = -0.5x + 5

y3 = 4x + 2

y4. = -0.25x + 2

A) How does the line in y1 appear in relation to the line in y2?

B) How does the line in y3 appear to compare in relation to the line in y4?

C) Compare the slopes in y1 and y2. Then compare the slopes in y3 and y4. What do you notice?