Name: _____   Date: _____

Effects of changing slope or y-intercept

Part 1: Calculator Investigation of changing the y-intercept of an equation

In your calculators y= screen enter the equation y = 2x + 5 into y_1

Question: What is the y-intercept of this equation? _____

Question: If the y-intercept were decreased by 7, what would be the new y-intercept? _____

Write a new equation using the new y-intercept and the same slope as the equation above.

Enter this equation into y_2 on your calculator. Compare the graphs.

Question: If the original y-intercept were increased by 3, what would be the new y-intercept? _____

Write a new equation using the new y-intercept and same slope as the original equation.

Enter this equation into y_2 on your calculator. Compare the graphs.

Analysis: What effect does changing the y-intercept of an equation have on the graph?

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Part 2: Calculator investigation of changing the slope of an equation

In your calculators y= screen enter the equation y = 2x + 5 into y_1

Question: What is the slope of this equation? _____

Question: If the original slope were doubled, what would be the new slope?

Write an equation using the new slope and same y-intercept as the original equation.

Enter the new equation into y_2. Compare the graphs.

Question: If the original slope were tripled, what would be the new slope?

Write an equation using the new slope and same y-intercept as the original equation.

Enter the new equation into y_2. Compare the graphs.

Question: If the original slope were halved, what would be the new slope?

Write an equation using the new slope and same y-intercept as the original equation.

Enter the new equation into y_2. Compare the graphs.

Analysis: What effect does changing the slope have on the graph?

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Part 3: Assessment Section

Get into the Navigator application on your calculator. We will answer a few quick poll questions based on the knowledge you just discovered from the previous parts.

Question 1: Which line would you get if you increased the y-intercept of the green line by 4?

    a. Blue line
    b. Red line
    c. Orange line
    d. White line

Question 2: Which line would you get if you decreased the y-intercept of the white line by 3?

    a. Blue line
    b. Red line
    c. Orange line
    d. Green line

Question 3: Which line has a y-intercept that has been decreased from the blue line?

    a. Red line
    b. Orange line
    c. Green line
    d. White line

Question 4: Which line would you get if you doubled the slope of the red line?

    a. Orange line
    b. Blue line
    c. Green line
    d. White line
    e. Purple line

Question 5: Which line would you get if you halved the slope of the blue line?

    a. Orange line
    b. Red line
    c. Green line
    d. White line
    e. Purple line

Question 6: Which line would you get if you multiplied the slope of the white line by 4?

 a. Orange line
 b. Red line
 c. Green line
 d. Blue line
 e. Purple line

Question 7: What would be the equation you increased the y-intercept by 2 and multiplied the slope by -2?

 a. $y = 4x - 3$
 b. $y = 1 - 4x$
 c. $y = 2 + 4x$
 d. $y = -4x - 2$

Question 8: What would be the equation you decreased the y-intercept by 6 and multiplied the slope by .5?

 a. $y = .5x + 5$
 b. $y = -6 - x$
 c. $y = -7 + x$
 d. $y = x + 6$

Question 9: What effect does increasing the y-intercept by 2 and keeping the same x-intercept have on the slope of the line?

 a. The slope is doubled
 b. The slope is halved
 c. There is no change in the slope
 d. The slope changes from positive to negative