Meramec College Algebra Quiz 6 Solution Fall 2008

NAME: _____Score_____/10

Please **print** your name

All calculations are to be exact. NO DECIMALS.

If you use a formula, write the formula before using it.

1. Calculate the length of the line segment joining the points (3, -2) and (-5, 2)

$$d = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2} = \sqrt{(3+5)^2 + (2+2)^2} = \sqrt{64+16} = \sqrt{80} = 4\sqrt{5}$$

2. Calculate the midpoint of the line segment joining the points (3, -2) and (-5, 2)

$$\text{midpoint is } \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right) = \left(\frac{3+(-5)}{2}, \frac{-2+2}{2}\right) = (-1, 0)$$

Note: Many of you wrote 3 + - 5 in the numerator. This is absolutely incorrect. NEVER write two operation symbols next to each other. Grouping symbols as used in the above solution are absolutely required.

3. Calculate the slope of the line through the points (3, -2) and (-5, 2)

$$m = \frac{y_1 - y_2}{x_1 - x_2} = \frac{2-(-2)}{-5-3} = \frac{4}{-8} = -\frac{1}{2}$$

4. What is the slope of the graph of $y = \sqrt{2}x - 7$?

The slope is $\sqrt{2}$

5. What is the y-intercept of the graph of $y = \sqrt{2}x - 7$

The y-intercept is -7.

The easiest way to determine answers to questions 4 and 5 is to compare the given equation with the general equation y = mx + b for a linear equation in two variables where m represents the slope and b represents the y-intercept.