

## SLU PreCalculus Spring 2007 Quiz 2 Commentary

1) The class average on this quiz was 5 out of a possible 10 points. That is still unacceptable.

2) The most frequently missed questions were the two questions (6 & 7) asking for the equations of circles. We assume that the equations for a circle (as well as many other fundamental equations and formulas from college algebra) are well known to students entering a PreCalculus course. The quick review provided in the "Preliminaries" section of the website and discussed during the first week of class should remind you of these formulas.

3) Question 9 was the next most frequently missed question. The responses that I saw lead me to surmise that many of you are trying to simply memorize letters rather than understanding the formula. A consideration of the picture below quite clearly illustrates that the coordinates of the midpoint (of a line segment between two points) are the averages of the corresponding coordinates of the two points.

**Fact:** The **midpoint** of the line segment joining two points  $(x_1, y_1)$  and  $(x_2, y_2)$  is the point

$$\left( \frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$$

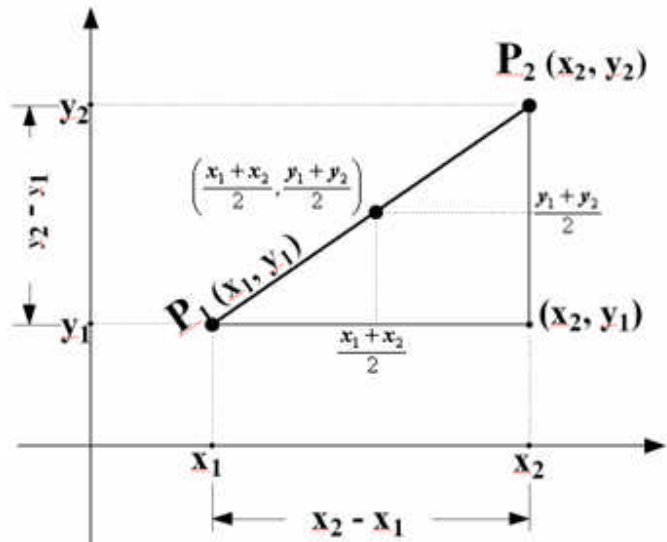
**Fact:** The **slope** of the non-vertical line through two points  $(x_1, y_1)$  and  $(x_2, y_2)$  is

$$m = \frac{y_1 - y_2}{x_1 - x_2} = \frac{y_2 - y_1}{x_2 - x_1}$$

The familiar Pythagorean Formula yields the distance formula from the same diagram.

**Fact:** The **distance** between two points  $(x_1, y_1)$  and  $(x_2, y_2)$  is

$$d = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2}$$



4) Finally it seemed that many of you did not know the definition of graph. We use that concept a lot in this course.