**Math 120 Intermediate Algebra**  

*Other Equations of Lines*

**Ex 1** What is the slope of a line that passes through \((x_1, y_1)\) and \((x, y)\)? *Multiply both sides be denom. to obtain point-slope form.*

**Point-Slope Form**
Any equation of the form \(y - y_1 = m(x - x_1)\) is said to be written in **point-slope** form and has a graph that is a straight line.
The slope is \(m\). The line passes through \((x_1, y_1)\).

**Do #1 and #2 from Points-Slope Equation of the Line Handout.**

**Parallel and Perpendicular Lines**
Two lines are parallel if they have the same slope or if they are both vertical.

Two lines are perpendicular if the product of their slopes is \(-1\) or if one line is vertical and the other line is horizontal.

**Do #3-#5 from handout.**

**Ex 2** If time permits Without graphing, determine if the graphs of the pair of equations are parallel, perpendicular, or neither.

\[
\begin{align*}
2x - 5y &= -3 \\
2x + 5y &= 4
\end{align*}
\]

**Ex 3** If time permits (#48) In 1994, the life expectancy of males was 72.4 years. In 2004, it was 75.2 years. Let \(E(t)\) represent life expectancy and \(t\) the number of years since 1990. *Assume that a constant rate of change exists for the model.*

a) Find a linear function that fits the data.
b) Use the function of part (a) to predict the life expectancy of males in 2012. 77.44 years

*Must memorize point-slope and slope-intercept form for quizzes and exams.*