Geometry SOL Practice
Topic #2: Coordinate Formulas
Notes

Given: the ***coordinates*** of two points, determine the

- **slope** of containing the two points
- **midpoint** of the segment joining the two points
- the **distance** between the two points

generalization	**example**
Given: $A = (x_1, y_1)$ and $B = (x_2, y_2)$	Given: ***A*** = (-2, 3) and ***B*** = (4, -1)
slope $= \dfrac{y_1 - y_2}{x_1 - x_2}$	**slope** $= \dfrac{(3)-(-1)}{(-2)-(4)}$ $= \dfrac{4}{-6}$ $= -\dfrac{2}{3}$
midpoint $= \left(\dfrac{x_1 + x_2}{2}, \dfrac{y_1 + y_2}{2} \right)$	**midpoint** $= \left(\dfrac{(-2)+(4)}{2}, \dfrac{(3)+(-1)}{2} \right)$ $= \left(\dfrac{2}{2}, \dfrac{2}{2} \right)$ $= (1,1)$
distance $= \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2}$	**distance** $= \sqrt{((-2)-(4))^2 + ((3)-(-1))^2}$ $= \sqrt{(-6)^2 + (4)^2}$ $= \sqrt{36+16}$ $= \sqrt{52}$ $= 7.21$