Class: Honors Geometry
Date: 9/14/06
Topic: Lesson 3-6 (Slopes of Parallel and Perpendicular Lines)

Slopes of parallel lines	2 non-vert lines are $\parallel$ *iff* their slopes are $=$
	Any 2 vert lines are $\parallel$
	Any 2 horiz lines are $\parallel$
Example	Pg. 161, #2
	Line 1: (1, 3) & (-5, 1) $\rightarrow$ $m = \dfrac{3-1}{1-(-5)} = \dfrac{2}{6} = \dfrac{1}{3}$
	Line 2: (4, 2) & (-4, -2) $\rightarrow$ $m = \dfrac{2-(-2)}{4-(-4)} = \dfrac{4}{8} = \dfrac{1}{2}$
	Not parallel, diff slopes
Example	Pg. 161, #10
	$3x + 4y = 12 \rightarrow y = -\dfrac{3}{4} + 3, m = -\dfrac{3}{4}$
	$6x + 2y = 6 \rightarrow y = -3x + 3, m = -3$
	Not parallel, diff slopes
Example	Pg. 162, #14
	Line AB: $-x + 2y = 4$, $C(-2, 4)$, $m = \dfrac{1}{2}$
	$y - 4 = \dfrac{1}{2}(x + 2)$

Slopes of perpendicular lines	If 2 non-vert lines are $\perp$, product of their slopes is -1
	If the slopes of 2 lines have a product of -1, they are $\perp$
	Any horiz line and vert line are $\perp$
Example	Pg 162, #18
	Line 1: (6, 3) & (1, -1) $\rightarrow m_1 = \dfrac{3-(-1)}{6-1} = \dfrac{4}{5}$
	Line 2: (-4, 4) & (1, -1) $\rightarrow m_2 = \dfrac{4-(-1)}{-4-1} = \dfrac{5}{-5} = -1$
	$m_1 * m_2 = -\dfrac{4}{5} \neq -1 \rightarrow$ no they are not perpendicular
Example	Pg 162, #22
	Line MN: $y + 2x = -8$; $P(4, 4) \rightarrow y = -2x - 8 \rightarrow m = -2$
	Perpendicular line: $m = \dfrac{1}{2} \rightarrow y - 4 = \dfrac{1}{2}(x - 4)$
Example	Pg 162, #24
	$m = \dfrac{2}{3}$
	Perpendicular line: $m = -\dfrac{3}{2}$, $b = 0 \rightarrow y = -\dfrac{3}{2}x$