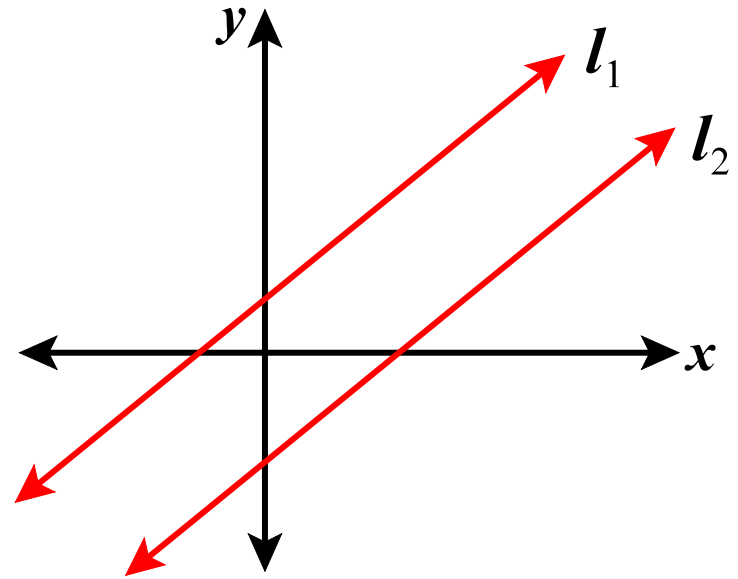


III. Parallel lines:

$$l_1 \parallel l_2 \iff m_1 = m_2$$

(i.e., same slope)

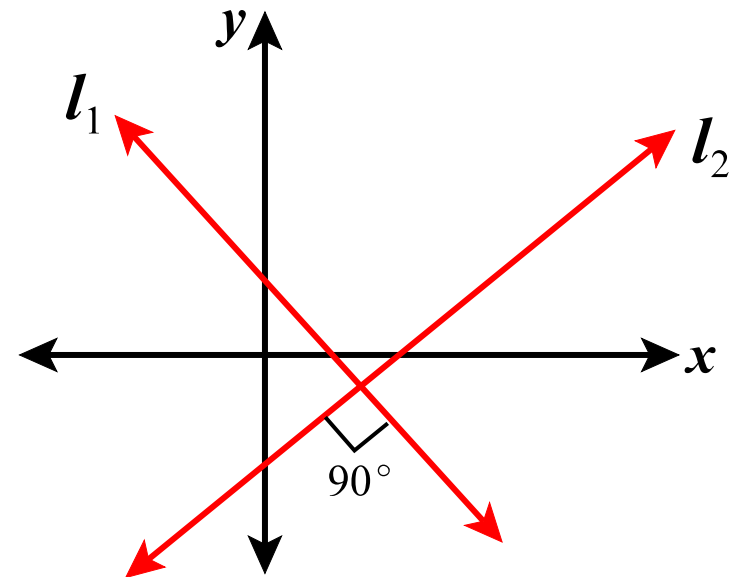


IV. Perpendicular lines:

$$l_1 \perp l_2 \iff m_1 \cdot m_2 = -1$$

or $m_1 = -1/m_2$

(i.e., slopes are negative reciprocals)



V. Examples (pp.151-152): Exercises #34,38,46,50

HW: pp.151-152 / Exercises #27,33,37,45,49,53
Read section 3.1 (pp.166-176)

Miscellaneous info...

DO NOT write that the “**x**-intercept = a ” and/or that the “**y**-intercept = b .” Instead, use expressions which state that the “**x**-intercept @ $(a,0)$ ” and/or the “**y**-intercept @ $(0,b)$.”

More info, see (text) p.85 / Study Tip

Perpendicular line concepts are addressed only for purposes of exposure to these ideas, and will not be covered on any of the in-class quizzes or exams (this semester)...

Systems of Linear Equations Intro

I. General Form:

$$\mathbf{a}_1 \mathbf{x} + \mathbf{b}_1 \mathbf{y} = \mathbf{c}_1$$

$$\mathbf{a}_2 \mathbf{x} + \mathbf{b}_2 \mathbf{y} = \mathbf{c}_2$$

where \mathbf{a}_i , \mathbf{b}_i , and \mathbf{c}_i are *constants*

II. Methods for Solving:

- a. Graphing
- b. Substitution
- c. Addition (*a.k.a.*, the “elimination method”)
- d. Matrices
 1. row-reduction (section 3.4, not covered)
 2. determinants (section 3.5, not covered)
 3. matrix inverse (not in text, not covered)

I. A Graphing Example (p.177): Exercise #10

II. Two Lines, Three Possibilities

1. Lines intersect at a point, whose (x,y) -coordinates are the “unique” ordered pair **solution**...
2. Lines are parallel (never intersect), no ordered pair satisfying both equations exists, and thus there is **no solution**...
3. Lines are the same and all the points on it have (x,y) -coordinates which satisfy both equations, and thus there are an **infinite number of solutions**...

III. A Substitution Example (p.177): Exercise #32

IV. An Elimination Example (p.177): Exercise #48

V. Practice Problems (pp.177-178):

Exercises #18,~~40~~,~~68~~

HW: pp.177-178 / Exercises #3-59 (every other odd)

Read section 3.2 (pp.182-191)