



Introduction to Linear Systems

Section 1.1



Example

Solve the following systems:

(a) $x + y = 3$

$$x - y = -1$$

(b) $x + y = 3$

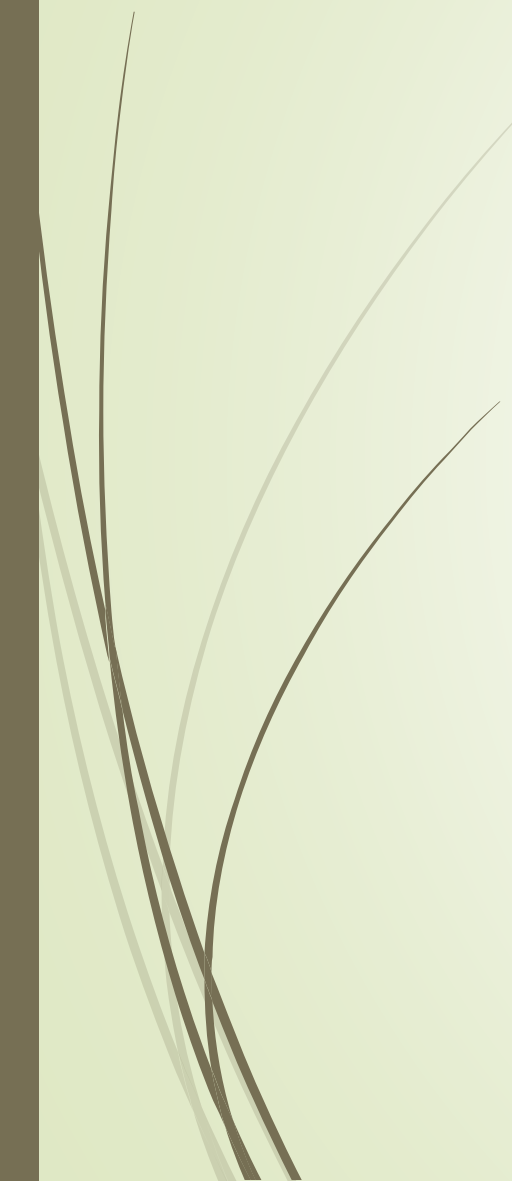
$$2x + 2y = 6$$

(c) $x + y = 3$

$$x + y = 1$$



Operations that Lead to Equivalent Systems of Equations

- Interchange two equations
 - Multiply an equation by a nonzero constant
 - Add a multiple of one equation to another equation
- 



Solve the system.

$$x_1 - 2x_2 + 3x_3 = 9$$

$$-x_1 + 3x_2 = -4$$

$$2x_1 - 5x_2 + 5x_3 = 17$$

Graphical Interpretation

$$x - y + z = 2$$

$$x + y - z = 1$$

$$x + y + z = 3$$

$$(x, y, z) = \left(\frac{3}{2}, \frac{1}{2}, 1\right)$$

