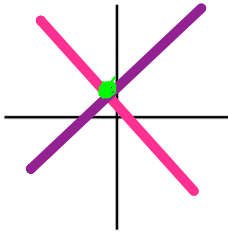
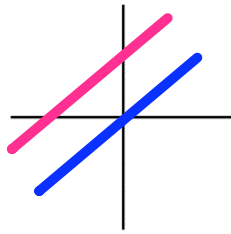


## Section 7.5 Special Types of Linear Systems

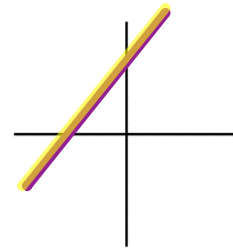
### Number of Solutions of a Linear System



One Solution



No Solution



Infinitely Many Solutions

### EXAMPLES

1. Show that this linear system has *no solution*.

$$-6x + 2y = -8$$

$$-3x + y = 7 \quad + 3x$$

$$+ 3x$$

$$y = (3x + 7)$$

$$-6x + 2(3x + 7) = -8$$

$$-6x + 6x + 14 = -8$$

$$14 \neq -8$$

No  $\mathbb{R}$

2. Show that this linear system has *infinitely many solutions*.

$$3 \begin{pmatrix} -x + 2y = -2 \\ 3x - 6y = 6 \end{pmatrix}$$

$$3x - 6y = 6$$

$$-3x + 6y = -6$$

$$0 = 0$$

all  $\mathbb{R}$