

# Lesson 96 Practice Problems

$$a. \begin{cases} x - 3y = 5 \\ xy = 3 \end{cases} \Rightarrow \begin{cases} x = 3y + 5 \\ y = \frac{-5 \pm \sqrt{25 - 4(3)(-3)}}{6} \end{cases}$$

$$(3y + 5)y = 3 \\ 3y^2 + 5y - 3 = 0$$

$$x = 3y + 5 \\ = 3 \left( \frac{-5 \pm \sqrt{61}}{6} \right) \\ = \frac{-5 \pm \sqrt{61}}{2}$$

$$y = \frac{-5 \pm \sqrt{25 + 36}}{6} \\ y = \frac{-5 \pm \sqrt{61}}{6}$$

$$\left( \frac{-5 + \sqrt{61}}{2}, \frac{-5 + \sqrt{61}}{6} \right)$$

$$\left( \frac{-5 - \sqrt{61}}{2}, \frac{-5 - \sqrt{61}}{6} \right)$$

$$b. E = \frac{kA}{D} \quad D \cdot E = \frac{kA}{D} \cdot D$$

$$75 = \frac{k \cdot 15}{85}$$

$$ED = kA \\ D = \frac{kA}{E}$$

$$k = 425$$

$$= \frac{425 \cdot 30}{20}$$

$$D = 637.5 \text{ deer}$$

$$\frac{E_1}{E_2} = \frac{D_2 A_1}{D_1 A_2} \left( \frac{D_1 A_2}{A_1} \right)$$

$$\frac{E_1 D_1 A_2}{E_2 A_1} = D_2 = \frac{75 \cdot 85 \cdot 30}{20 \cdot 15} = 637.5$$