

1. Given:  $xy + z = 2x - z^2$

Solve for  $x$

$$\begin{array}{r} -2x - 2x \\ \hline xy - 2x + z = -z^2 \\ \underline{-x} \quad \underline{-z} \quad \underline{-z} \end{array}$$

$$\hline xy - 2x = -z^2 - z$$

$$x(y - 2) = -z^2 - z$$

$$x = \frac{-z^2 - z}{y - 2}$$

2. Find the ordered pair  $(x, y)$  that satisfies the system of equations below.

$$\begin{array}{l} x + 2y = 4 \\ 3x + 3y = 9 \end{array}$$

$x + 2(1) = 4$     $-3$   $\leftarrow$

$$\begin{array}{r} x + 2 = 4 \\ x = 2 \end{array}$$
$$\begin{array}{r} -3x - 6y = -12 \\ \hline -3y = -3 \\ \hline y = 1 \end{array}$$

$(2, 1)$

3. Line  $l$  has slope of  $-2/3$ . If it passes  $(0, k)$  and  $(3, 0)$ , find  $k$ .

$$-\frac{2}{3} = \frac{k-0}{0-3} = \frac{k}{-3}$$

$$3k = 6 \quad k = 2$$

4. Given:  $A = \frac{B-1}{1+2B}$ . Solve for  $B$ .

$$B-1 = A+2AB$$

$$\begin{array}{r} -2AB \quad -2AB \\ \hline \end{array}$$

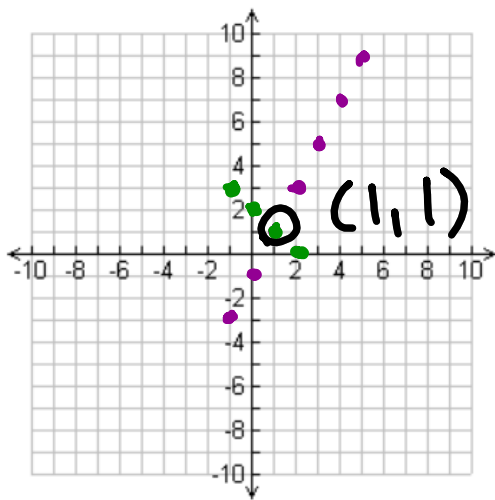
$$\underline{B-2AB-1} = A$$

$$B-2AB = A+1$$

$$B(1-2A) = A+1$$

$$B = \frac{A+1}{1-2A}$$

5. The graph of a line,  $y = 2x - 1$  in the  $xy$ -plane. The graph of a second line passes through the points  $(-1, 3)$  and  $(2, 0)$ . If the two lines intersect at the point  $(a, b)$ , what is the value of  $a + b$ ?



$$a + b = \underline{\underline{2}}$$

6. What is the sum and product of the roots for  $2x^2 - x = 2$ ?

$$S = \frac{-b}{a} = \frac{-(-1)}{2} = \frac{1}{2}$$

$$P = \frac{c}{a} = \frac{-2}{2} = -1$$

$$2x^2 - x - 2 = 0$$

7. Express the given expressions with quotient and remainder.

$$\frac{5x - 1}{x - 2}$$

$$\begin{array}{r} \underline{3)} \quad 5 \quad -1 \\ \quad \downarrow \quad 10 \\ \hline \quad 5 \quad 9 \end{array} \quad \left( 5 + \frac{9}{x-2} \right)$$