

## Algebra Review to Accompany Chapter 3

### Problem 1

Solve the equation

(a)  $2x - 5 = 4x - 9$

(b)  $0.5x - 3 = 7$

(c)  $\frac{5}{3}(y + 2) = \frac{1}{2} - y$

(d)  $3t - \frac{2(t-1)}{3} = 4$

(e)  $2(r + 5) - 3 = 3(r - 8) + 21$

(f)  $B - 4[B - 3(1 - B)] = 42$

(g)  $1.06s - 0.01(248.4 - s) = 22.67s$

### Problem 2

Solve for the indicated variable.

(a)  $l = l_0 + \frac{k}{2}w$ , for  $w$ .

(b)  $h = v_0t + \frac{1}{2}at^2$ , for  $a$ .

(c)  $by - d = ay + c$ , for  $y$ .

(d)  $S = \frac{rL-a}{r-1}$ , for  $r$ .

(e)  $2x - (xy' + yy') + 2yy' = 0$ , for  $y'$

### Problem 3

Solve the systems of equations

(a) 
$$\begin{cases} x + y = 3 \\ x - y = 5 \end{cases}$$

(b) 
$$\begin{cases} 3x - 2y = 6 \\ y = 2x - 5 \end{cases}$$

(c) 
$$\begin{cases} 2x + 3y = 7 \\ y = -\frac{3}{5}x + 6 \end{cases}$$

(d) 
$$\begin{cases} 2(x + y) = 3 \\ x = y + 3(x - 5) \end{cases}$$

### Problem 4

Graph the functions and find the points of intersection

(a)  $y = x$  and  $y = 3 - x$

(b)  $y = 2x$  and  $2x + y = 12$

**Problem 5**

Factor

(a)  $x^2 + 3x + 2$

(b)  $x^2 + 2x - 3$

(c)  $x^2 + 3x - 28$

(d)  $3x^2 - x - 4$

(e)  $u^2 - 2u$

**Problem 6**

Complete the square

(a)  $w^2 + 7w$

(b)  $2r^2 + 20r$

(c)  $3t^2 + 24t - 13$

**Problem 7**

Solve the quadratic equations

(a)  $-3t^2 + 4t + 9 = 0$

(b)  $3y^2 = 6y + 18$

(c)  $v^2 - 4v - 9 = 0$