

Name: \_\_\_\_\_

1. Simplify the given algebraic expression:

(a)  $5(5x + 4) - 12$

(b)  $3(7x - 9) + 11x$

(c)  $7(5y - 4) + 2(3y + 5)$

(d)  $6(2y - 9) - (7y + 3)$

2. Solve and check the linear equation.

(a)  $6x - 15 = 15$

(b)  $3(x - 2) + 8 = 2(x + 5)$

(c)  $10 - \frac{x}{2} = \frac{x}{3}$

(d)  $\frac{11x}{12} = \frac{x}{2} + 5$

3. Solve the following equations. Determine whether each equation is an identity, conditional equation, or an inconsistent equation.

(a)  $5x + 24 = 8(x + 3) - 3x$

(c)  $\frac{x + 6}{2} - 7 = \frac{2x - 8}{3}$

(b)  $6(x + 1) = 9 + 6x$

(d)  $\frac{3}{x - 3} = 3 + \frac{x}{x - 3}$