1. Simplify $2x + (4x - 6) + 9 - (6x - 3)$

2. Simplify $9m - \frac{2}{3}(3m - 7) + 5m$

3. Simplify $2(\frac{3}{2}m + 1) + 3(\frac{5}{3}m - 2)$

4. Simplify $3c\left(\frac{1}{3}d - 9\right) - 7(c + 1) + d(c + 4)$

5. In which step does a mistake first appear in simplifying the expression
    $0.5(-12c + 6) - 3(c + 4) + 10(c - 5)$?

    > **Step 1:** $-6c + 3 - 3(c + 4) + 10(c - 5)$
    > **Step 2:** $-6c + 3 - 3c - 12 + 10(c - 5)$
    > **Step 3:** $-6c + 3 - 3c - 12 + 10c - 50$
    > **Step 4:** $7c - 41$

6. Solve $-5x - (-7 - 4x) = -2(3x - 4)$

7. Solve $0.3(12x - 16) = 0.4(12 - 3x)$

8. What is the value of x in the equation $2(x - y) = -\frac{4}{5}(x - 5)$ when $y = -9$?

9. The length of a rectangle is $5x + 4$ and the width is $4x - 4$. Find the dimensions if the perimeter is 108.

10. A city employee paints curbs in parking lots and replaces road signs. It takes 0.5 hours to paint a parking lot curb and 2.5 hours to replace a road sign. The function below can be used to find c, the number of parking lot curbs the employee paints when he replaces r road signs.

    $$c = \frac{40 - 2.5r}{0.5}$$

    If the employee painted 20 curbs, how many road signs did her replace?

11. A military cargo plane can carry a maximum weight of 160,000 pounds. A company uses one of these planes to ship 2,000 pound containers and 8 tanks that weigh 5000 pounds each. Write and solve an equation to show the number of containers the company can load on the plane.

12. The total cost of renting a banquet hall is a function of the number of hours the hall is rented. The owner of the banquet hall charges $85 per half hour plus a $50 cleaning fee. Write and solve an equation to find the cost of renting the hall for 4 hours.

13. An online music service lets customers download an unlimited number of songs for $0.25 each after paying a membership fee of $5.00 per month. Write and solve an equation to show how many songs were purchased over a three month time period if you spent $33.75.

14. Solve $5(3 - x) = -2x + 6$.

15. Solve $y = -6(x - 18) - 2$ when $y = 46$.

16. Solve $-3x + 2y = 5y - 9$ when $y = -2$.

17. Solve $5x + 7y = 22$ when $y = -4$.

18. Solve $7x - 2y = 8$ when $x = -1$.