

Worksheet: Solving Two-Step Equations

Instructions: Solve each of the following two-step equations. Show all steps clearly, and check your solutions by substituting them back into the original equations.

1.

$$3x + 4 = 19$$

2.

$$\frac{1}{2}x - 6 = 8$$

3.

$$7 - 2x = 13$$

4.

$$5x + 3 = 2x + 18$$

5.

$$\frac{3}{4}x + 5 = 11$$

6.

$$2(x - 3) = 8$$

7.

$$4 - \frac{1}{3}x = 2$$

8.

$$6x - 7 = 5x + 2$$

9.

$$\frac{2}{5}x - 4 = 6$$

10.

$$8x + 2 = 3x + 17$$

Solution Hints:

1. **Isolate the variable term:** Start by undoing the addition or subtraction.
2. **Solve for the variable:** After isolating the variable term, undo the multiplication or division.
3. **Check the solution:** Substitute your solution back into the original equation to ensure it satisfies the equation.

Example Solution for Problem 1:

1. Equation:

$$3x + 4 = 19$$

Step 1: Subtract 4 from both sides:

$$3x + 4 - 4 = 19 - 4$$

$$3x = 15$$

Step 2: Divide both sides by 3:

$$\frac{3x}{3} = \frac{15}{3}$$

$$x = 5$$

Check: Substitute

$$x = 5$$

back into the original equation:

$$3(5) + 4 = 19$$

$$15 + 4 = 19$$

$$19 = 19$$

(Correct)