

SOLVING EQUATIONS

flow chart

Equation:

$$3x - 1 = 5$$

STEP 1:

Move anything on the same side as the variable (x) to the other side of the equal sign. In this case -1, we add 1 to both sides to eliminate

ALWAYS START WITH
NUMBERS AWAY FROM
THE VARIABLE!

$$3x - \cancel{1} = 5$$

$+1$ $+1$

IN THIS CASE, SUBTRACTING 1, WE PERFORM
THE OPPOSITE OPERATION OF ADDITION

STEP 2:

Perform the opposite operation to isolate the variable. Since a number next to a variable is considered multiplication, we DIVIDE the number away from the variable and do the same to the other side.

$$3x = 6$$

WHAT DOES IT
MEAN WHEN A
NUMBER IS NEXT
TO SOMETHING?
MULTIPLY!

$$\frac{\cancel{3}x}{3} = \frac{6}{3}$$

IN THIS CASE, MULTIPLYING 3 BY X, WE PERFORM
THE OPPOSITE OPERATION OF DIVISION

STEP 3:

Once the variable is isolated, your equation has been solved!

$$x = 2$$

STEP 4:

Check your solution.

$$\begin{aligned} 3(2) - 1 &= 5 \\ 6 - 1 &= 5 \\ 5 &= 5 \end{aligned}$$



Date:

Multi-Step Equations

Solve each equation for X

1. $2x + 3 = 15$

2. $6x - 4 = 20$

3. $10 - 2x = 8$

4. $\frac{x}{3} + 4 = -2$

5. $\frac{x}{-4} + 1 = 3$

6. $5x = 8 - 3x$

7. $3 - 2x = x$

8. $\frac{3}{4}x + 1 = 10$

9. $5x + 25 = 10x$

10. $-11x = 36 + x$

Multi-Step Equations

Solve each equation. Check your solution.

$$4x - 1 = 5x + 3$$

$$7x + 2 = 23$$

$$2(x - 1) = -18$$

$$-10 + x = -6x$$

$$-3 = 6(x - 5)$$

$$8 = 4(x - 3)$$

$$-2.5(4x - 1) = 7.5$$

$$0.2x + 7 = 0.5x$$

$$0.3(x + 2) = 4$$