

The background features a light gray gradient with several realistic water droplets of various sizes scattered across the surface. The droplets have highlights and shadows, giving them a three-dimensional appearance. The text is centered in the middle of the page.

SOLVING MULTI-STEP EQUATIONS

X GETS ALL DRESSED UP

Parenthesis

Exponents

MD Multiplication/Division

AS Addition/Subtraction

Apply when working just one side of the equation or when asked to simplify an expression.

X GETS UNDRESSED: SADMEP

SA Addition/Subtraction

DM Multiplication/Division

Exponents

Parenthesis

Apply when moving terms to the other side of the equation. (Across the equal sign)

X GETS ALL DRESSED UP

X GETS UNDRESSED

P

SA

E

DM

MD

E

AS

P





SOLVE

Get the variable by itself.



SIMPLE GUIDELINES FOR SOLVING

1. X NEEDS TO GET DRESSED UP BEFORE IT GETS UNDRESSED.

2. GET DRESSED (STAY ON SAME SIDE OF $=$) WITH PEMDAS

3. GET UNDRESSED (MOVE ACROSS $=$) WITH SADMEP

USE INVERSE (OPPOSITE) OPERATIONS

4. CHECK ANSWER BY PLUGGING IT INTO THE ORIGINAL PROBLEM.

TRUE MEANS CORRECT

FALSE MEANS FIX IT

Example: $5(x - 7) + 3x = 5 - 2(x - 5)$

Dressed: Distribute to eliminate ()

$$\underline{5x} - 35 + \underline{3x} = \underline{5} - 2x + \underline{10}$$

Dressed: Combine like terms (simplify)

$$8x - 35 = -2x + 15$$

X Undressed: Addition POE
gather variables on one side

$$\underline{+2x} \qquad \qquad \underline{+2x}$$

$$10x - 35 = 15$$

Simplify – just did the math

X Undressed: Addition POE

$$\underline{+35} \quad \underline{35}$$

$$\underline{10x} = \underline{50}$$

Simplify

X Undressed: Division POE

$$10 = 10$$

$$x = 5$$

Simplify

CHECK ANSWER

$$5(x - 7) + 3x = 5 - 2(x - 5) \quad \text{Potential answer: } x = 5$$

Plug in 5 every time you see x.

$$5(5 - 7) + 3(5) = 5 - 2(5 - 5)?$$

Either use PEMDAS to calculate by hand OR enter one side at a time into the calculator exactly as is and record the result.

$$5 = 5$$