Solving Math 9 Equations Part 2

February-08-17
11:00 AM

Mathematics 9
Equation Solving
Solving Math 9 Equations Part 2

Over the last couple of classes we have been looking at solving one-step and two-step equations. Today we will look at another new multi-step equation.

Things to Remember

1. Isolate the variable by doing the opposite what the question suggest.
2. Whatever you do to one side of the equation, you must do the same to the other side.
3. Algebra Rules are opposite of BEDMAS Rules. Add & Subtract first, Divide last.
4. Always do a check to make sure your answer is correct.

Solve and check the following equations.

A. Equation Type #4 (Multi-Step)

1) $4m + 6 = 2m + 14$

$-2m \qquad -2m$

$2m + 6 = 14$
$\quad -6 \quad -6$

$\dfrac{2m}{2} = \dfrac{8}{2}$

$\boxed{m = 4}$

Check

$4m + 6 = 2m + 14$
$4(4) + 6 = 2(4) + 14$
$16 + 6 = 8 + 14$
$22 = 22 \checkmark$

2) $x + 6 = 3x + 12$

$-3x \qquad -3x$

$-2x + 6 = 12$
$\quad -6 \quad -6$

$\dfrac{-2x}{-2} = \dfrac{6}{-2}$

$\boxed{x = -3}$

Check

$x + 6 = 3x + 12$
$(-3) + 6 = 3(-3) + 12$
$3 = -9 + 12$
$3 = 3 \checkmark$

3) $1 + 5y = -15 - 3y$

$+3y +3y$

$\cancel{1} + 8y = -15$

$-1 -1$

$\dfrac{\cancel{8}y}{\cancel{8}} = -\dfrac{16}{8}$

$\boxed{y = -2}$

$1 + 5y = -15 - 3y$

$1 + 5(-2) = -15 - 3(-2)$

$1 - 10 = -15 + 6$

$-9 = -9 \checkmark$

4) $3a - 8 = 4a - 13$

$-4a -4a$

$-a - \cancel{8} = -13$

$+8 +8$

$\dfrac{-\cancel{1}a}{\cancel{-1}} = \dfrac{-5}{-1}$

$\boxed{a = 5}$

Check

$3a - 8 = 4a - 13$

$3(5) - 8 = 4(5) - 13$

$15 - 8 = 20 - 13$

$7 = 7 \checkmark$

5) $4 - 2n = 4n + 22$

$-4n -4n$

$\cancel{4} - 6n = 22$

$-4 -4$

$\dfrac{-\cancel{6}n}{-\cancel{6}} = \dfrac{18}{-6}$

$\boxed{n = -3}$

Check

$4 - 2n = 4n + 22$

$4 - 2(-3) = 4(-3) + 22$

$4 + 6 = -12 + 22$

$10 = 10 \checkmark$

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