

Solving Math 9 Equations Review

February-23-17
8:55 AM

Mathematics 9
Equation Solving
Solving Math 9 Equations Review

Remember that there are six major types of equations that we have learned to solve and check.

How to Solve Complex Equations

1. Get rid of all brackets first using Distributive Property.
2. Get rid of all fractions by multiplying the entire equation by the common denominator.
3. Combine any like terms on each side of the equation.
4. Use basic equation solving rules to solve for the variable.
5. Remember to use BEDMAS rules when doing the check.

A. Solve and check the following equations.

$$1) \quad \cancel{-8} - 3x = \cancel{-2}$$

$$\cancel{-8} + 8 - 3x = \cancel{-2} + 8$$
$$\underline{-3x} = \underline{6}$$

$$\boxed{x = -2}$$

Check

$$\begin{aligned} -8 - 3x &= -2 \\ -8 - 3(-2) &= -2 \\ -8 + 6 &= -2 \\ -2 &= -2 \checkmark \end{aligned}$$

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

$$\cancel{-3x} + 6 = \cancel{3x} + 12$$
$$\underline{-2x} + \underline{6} = \underline{12}$$

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

$$\boxed{x = -3}$$

Check

$$\begin{aligned} x + 6 &= 3x + 12 \\ (-3) + 6 &= 3(-3) + 12 \\ 3 &= -9 + 12 \\ 3 &= 3 \checkmark \end{aligned}$$

$$3) \quad 5n - 3 - 2n = 3 + 7n - 2$$

$$\begin{array}{r} 3n - 3 = 7n + 1 \\ -7n \quad -7n \end{array}$$

$$\begin{array}{r} -4n - 3 = 1 \\ \quad \quad \quad +3 \end{array}$$

$$\begin{array}{r} -4n = 4 \\ \underline{-4} \quad \underline{-4} \end{array}$$

$$\boxed{n = -1}$$

Check

$$\begin{aligned} 5n - 3 - 2n &= 3 + 7n - 2 \\ 5(-1) - 3 - 2(-1) &= 3 + 7(-1) - 2 \\ -5 - 3 + 2 &= 3 - 7 - 2 \\ -6 &= -6 \checkmark \end{aligned}$$

$$4) \quad 4(y+1) = 2(11-y)$$

$$\begin{array}{r} 4y + 4 = 22 - 2y \\ +2y \quad \quad \quad +2y \end{array}$$

$$\begin{array}{r} 6y + 4 = 22 \\ \quad \quad \quad -4 \quad \quad -4 \end{array}$$

$$\begin{array}{r} 6y = 18 \\ \underline{6} \quad \underline{6} \end{array}$$

$$\boxed{y = 3}$$

Check

$$\begin{aligned} 4(y+1) &= 2(11-y) \\ 4(3+1) &= 2(11-(3)) \\ 4(4) &= 2(8) \\ 16 &= 16 \checkmark \end{aligned}$$

$$3) \quad \frac{1}{3}(2y+7) = -\frac{1}{2}(y+7)$$

$$6 \left[\frac{2}{3}y + \frac{7}{3} = -\frac{1}{2}y - \frac{7}{2} \right]$$

$$\begin{array}{r} 4y + 14 = -3y - 21 \\ +3y \quad \quad \quad +3y \end{array}$$

$$\begin{array}{r} 7y + 14 = -21 \\ \quad \quad \quad -14 \quad \quad -14 \end{array}$$

$$\begin{array}{r} 7y = -35 \\ \underline{7} \quad \underline{7} \end{array}$$

$$\boxed{y = -5}$$

Check

$$\begin{aligned} \frac{1}{3}(2y+7) &= -\frac{1}{2}(y+7) \\ \frac{1}{3}(2(-5)+7) &= -\frac{1}{2}((-5)+7) \\ \frac{1}{3}(-10+7) &= -\frac{1}{2}(2) \\ \frac{1}{3}(-3) &= -1 \\ -1 &= -1 \checkmark \end{aligned}$$

Assignment: Solving Math 9 Equations Review Assignment

Name: _____

Solving Math 9 Equations Review Assignment

Solve and check the following equations.

1. $4y - 9 = 15$	<u>Check</u>
2. $2(x - 5) = -16$	<u>Check</u>
3. $5y + 2 = 2y - 7$	<u>Check</u>

4. $5(m+1) = -2(m+8)$

Check

5. $\frac{1}{3}n + \frac{1}{6} = \frac{1}{3}$

Check

6. $-\frac{1}{5}(m+17) = -3$

Check

7. $4m - 6 + 2m = 3m - 7 + 2m$

Check

8. $2y - 8 = 3y - 18$

Check

9. $\frac{1}{6} = \frac{1}{4} - \frac{1}{3}n$

Check

10. $1 + 6m + 1 = -6 + 4m - 2$

Check

11. $5a + 2 - 3a - 1 = 6a + 5 - 2a - 2$

Check

12. $\frac{1}{2}(y-1) = \frac{1}{4}(y-3) - 2$

Check

13. $3x + \frac{1}{3}(x-3) - 7 = \frac{1}{2}(2x-2) + 7$

Check

Answers

1) $y = 6$

2) $x = -3$

3) $y = -3$

4) $m = -3$

5) $n = \frac{1}{2}$

6) $m = -2$

7) $m = -1$

8) $y = 10$

9) $n = \frac{1}{4}$

10) $m = -5$

11) $a = -1$

12) $y = -9$

13) $x = 6$