Solving Math 9 Equations

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10:31 AM

Mathematics 9
Equation Solving
Solving Math 9 Equations

Over the last couple of classes we have been looking at solving one-step and two-step equations. Today we will begin to take a look at some of the new equations for Math 9.

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.

A. Fractions in Equation Solving

The easiest way to deal with fractions in an equation is to remove them by multiplying both sides of the equation by the common denominator.

1) $x+\frac{1}{2}=\frac{7}{2}$

$2\left(x+\frac{1}{2}\right)=\left(\frac{7}{2}\right)2$

$2x+x=7$

$-1 \quad -1$

$\frac{2}{2}x=\frac{6}{2}$

$x=3$

Check

$x+\frac{1}{2}=\frac{7}{2}$

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

$3\frac{1}{2}=\frac{7}{2}$

$\frac{7}{2}=\frac{7}{2}$ ✓

2) $\frac{2}{3}m=-\frac{1}{2}$

$6\left(\frac{2}{3}m\right)=\left(-\frac{1}{2}\right)6$

$\frac{4}{4}m=-\frac{3}{4}$

$m=-\frac{3}{4}$

Check

$\frac{2}{3}m=-\frac{1}{2}$

$\frac{2}{3}\left(-\frac{3}{4}\right)=-\frac{1}{2}$

$-\frac{1}{2}=-\frac{1}{2}$ ✓

3) $4+\frac{a}{2}=0$

$2\left(4+\frac{1}{2}a\right)=(0)2$

$8+a=0$

$-8 \quad -8$

$a=-8$

Check

$4+\frac{1}{2}a=0$

$4+\frac{1}{2}(-8)=0$

$4-4=0$

$0=0$ ✓

4) $1=-\frac{1}{4}n+3$

$4(1)=\left(-\frac{1}{4}n+3\right)4$

$4=-n+12$

$-12 \quad -12$

$-8=-n$

$\frac{-8}{-1}=\frac{-n}{-1}$

$8=n$

or

$n=8$

Check

$1=-\frac{1}{4}n+3$

$1=-\frac{1}{4}(8)+3$

$1=-2+3$

$1=1$ ✓

5) $\frac{1}{2}y+\frac{5}{6}=1$

$6\left(\frac{1}{2}y+\frac{5}{6}\right)=(1)6$

$3y+5=6$

$-5 \quad -5$

$\frac{3y}{3}=\frac{1}{3}$

$y=\frac{1}{3}$

Check

$\frac{1}{2}y+\frac{5}{6}=1$

$\frac{1}{2}\left(\frac{1}{3}\right)+\frac{5}{6}=1$

$\frac{1}{6}+\frac{5}{6}=1$

$\frac{6}{6}=1$

$1=1$ ✓

Assignment: Solving Math 9 Equations Assignment

Name:_____

Solving Math 9 Equations Assignment

Solve and check the following equations.

1. $-24 = 6x$	Check
2. $4 = y - 8$	Check
3. $-9 + 4n = -17$	Check
4. $8 = -3 - x$	Check

5. $8 = \frac{1}{3}m$	Check
6. $\frac{a}{4} = -3$	Check
7. $x - \frac{2}{3} = \frac{16}{3}$	Check
8. $3x - 4 = -10$	Check

9. $23 = 6m - 1$	Check
10. $\frac{a}{2} + 4 = 1$	Check
11. $\frac{3}{5}n - 7 = -10$	Check
12. $-4x + \frac{7}{2} = \frac{3}{2}$	Check

13. $\frac{3}{4}a = \frac{3}{8}$	Check
14. $5 = -8 - x$	Check
15. $m + \frac{1}{3} = \frac{5}{6}$	Check
16. $25n - 50 = -100$	Check

17. $-9+3x=-15$	Check
18. $-6a-2=-4$	Check
19. $2=\frac{1}{5}m$	Check
20. $-39=-9a-3$	Check

Answers

1) $x = -4$

2) $y = 12$

3) $n = -2$

4) $x = -11$

5) $m = 24$

6) $a = -12$

7) $x = 6$

8) $x = -2$

9) $m = 4$

10) $a = -6$

11) $n = -5$

12) $x = \frac{1}{2}$

13) $a = \frac{1}{2}$

14) $x = -13$

15) $m = \frac{1}{2}$

16) $n = -2$

17) $x = -2$

18) $x = \frac{1}{3}$

19) $m = 10$

20) $a = 4$