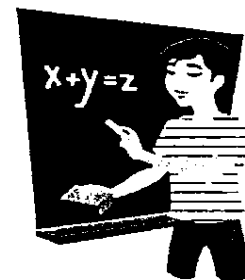


STEPS IN SOLVING AN EQUATION



1. Remove grouping symbols: (use the distributive property)
2. Simplify each side: (combine like terms on each side). When you are finished there should be no more than 2 terms on each side.
3. If the variable is on both sides, get it on one side by adding or subtracting
4. Remove any numbers added to or subtracted from the variable by doing the opposite operation
5. Remove any numbers multiplied or divided into the variable by doing the opposite operation.
6. Check

Example

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

Step 1: remove grouping symbols

$$2x - 6 + 3x = 10x - 15 - 1$$

Step 2: combine like terms

$$5x - 6 = 10x - 16$$

Step 3: put variables together

$$\begin{array}{r} -10x \\ -5x - 6 = -16 \end{array}$$

Step 4: remove numbers added/subtracted

$$\begin{array}{r} +6 \\ -5x = -10 \end{array}$$

Step 5: remove numbers mult/divided

$$\begin{array}{r} -5x \\ -5 = -5 \end{array}$$

$$x = 2$$

Step 6: Check

$$2(2-3) + 3(2) = 5(2 \cdot 2 - 3) - 1$$

$$4 - 6 + 6 = 5(4 - 3) - 1$$

$$4 = 5(1) - 1$$

$$4 = 5 - 1$$

$$4 = 4$$

Section 2.2: Solving Equations Practice Problems

1. Is -3 a solution of: $-x - 5 = 2x - 2$?

2. Is -2 a solution of: $-x^2 + 10 = -3|x| + 12$?

Solve for the variable. Check your work.

3. $-7 + x = -7$ _____

4. $b + (-3) = 8$ _____

5. $-y + 3 = -15$ _____

6. $-5 + \frac{a}{4} = 11$ _____

7. $2w + 3 = 10$ _____

8. $3 - 6r = 15$ _____

9. $\frac{2}{5}x - 4 = 8$ _____

10. $-2 - \frac{3}{4}f = -14$ _____

Section 2.2: Solving Equations Practice Problems Continue

11. $2(3k - 4) = 22$ _____

12. $-(x - 8) + 3x + 5 = 17$ _____

13. $3x + 4 = 2x - 5$ _____

14. $2(3r + 4) = 5(-2r - 8)$ _____

15. $\frac{2}{5}x - 4 = 8$ _____

16. $-2 - \frac{3}{4}f = -14$ _____

17. $3x + 4 = 2x - 5$ _____

18. $2(3r + 1) + 6 = 5(-2r - 8)$ _____

19. $-\frac{2}{9} = \frac{5}{6}x - \frac{1}{3}$ _____

20. $\frac{1}{2}b + \frac{13}{3} = -\frac{3}{4}b + 2b$ _____

Answers:

- | | |
|--------|--------------------|
| 1) no | 11) 5 |
| 2) yes | 12) 2 |
| 3) 0 | 13) -9 |
| 4) 11 | 14) -3 |
| 5) 18 | 15) 30 |
| 6) 64 | 16) 16 |
| 7) 3.5 | 17) -9 |
| 8) -2 | 18) -3 |
| 9) 30 | 19) $2/15$ |
| 10) 16 | 20) $5\frac{7}{9}$ |