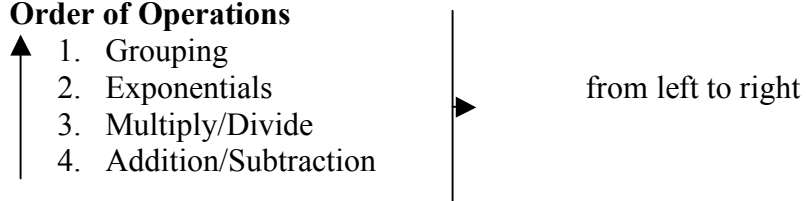


Linear Equations

Strategy

Transform equations into $ax + b = c$ format, then use the Order of Operations in reverse using the opposite operation to isolate the variable.

Order of Operations

- 
1. Grouping
 2. Exponentials
 3. Multiply/Divide
 4. Addition/Subtraction

from left to right

Solve the following equations.

1. $3x + 4 = 19$

2. $4x - 2 = 18$

3. $5x + 6 = 36$

4. $7x - 6 = 22$

5. $x/2 + 6 = 10$

6. $y/4 - 3 = 7$

7. $3x + 5 = 10 + 2x$

8. $7x - 5 = 4x + 1$

9. $10x - 3 = 6x + 21$

10. $9x + 6 = 2x - 15$

In the next group of problems, there are parentheses. The general strategy is to transform equations that you don't recognize into equations you do by using the Properties of Real Numbers. Since we have not done problems with parentheses, we get rid of them by using the Distributive Property, then go back to our original strategy – Order of Operations in reverse using the opposite operation.

11. $3(2x + 1) - 4 = 11$

12. $4(3x - 2) - 2x = 22$

13. $10 - 2(x - 4) = 12$

14. $3(2x - 3) + 4x = 5x + 16$

We can not make these more difficult, we can only make them longer! Get rid of the parentheses, combine like terms, and write equation in $ax + b = c$ format.

15. $5(2x + 3) - 2(x - 4) = 2x - 1$

16. $6x - 3(x - 8) = 4(x - 7) + 6$