

Linear Equations; Distributive Property

Strategy

Transform equations that you don't recognize into $ax + b = c$ format by using the Properties of Real Numbers.

Get rid of the parentheses by using the Distributive Property, combine "like" terms, then go back to our original strategy – write the equation in the $ax + b = c$ format and use the Order of Operations in reverse using the (inverse) opposite operation.

Example: Solve for x;

$$\begin{aligned}8x - 2(3x - 7) &= 10 \\8x - 6x + 14 &= 10 \\2x + 14 &= 10 \\2x &= -4 \\x &= -2\end{aligned}$$

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

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

3. $10 - 2(x - 4) = 12$

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

5. $8 - 3(x - 2) = -7$

6. $7 + 2(x + 4) = 21$

7. $8x - 4(2x + 3) = -12$

8. $8x - 4(2x + 3) = 7$

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.

9. $5(2x + 3) - 2(x - 4) = 2x - 1$

10. $5(2x + 3) - 3(x - 2) = 2(2x + 1) + 2$

Linear Equations; Distributive Property

Strategy

Transform equations that you don't recognize into $ax + b = c$ format by using the Properties of Real Numbers.

Get rid of the parentheses by using the Distributive Property, combine "like" terms, then go back to our original strategy – write the equation in the $ax + b = c$ format and use the Order of Operations in reverse using the (inverse) opposite operation.

Example: Solve for x; $8x - 2(3x - 7) = 10$

$$8x - 6x + 14 = 10$$

$$2x + 14 = 10$$

$$2x = -4$$

$$x = -2$$

Solve the following

1. $3(x + 4) = 21$

2. $4(x - 2) = 20$

3. $5(x + 1) = 35$

4. $2(x - 7) = -10$

5. $6(x + 3) = 42$

6. $7(x - 1) = 28$

7. $8(x + 2) = 16$

8. $3(x - 5) = -24$

9. $4(x + 6) = 8$

10. $5(x - 4) = 15$

11. $2(x + 9) = 6$

12. $6(x - 2) = 30$

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.

13. $5(2x - 3) + 7 = 4(2x + 3) - 6$

Linear Equations; Distributive Property

Strategy

Transform equations that you don't recognize into $ax + b = c$ format by using the Properties of Real Numbers.

Get rid of the parentheses by using the Distributive Property, combine "like" terms, then go back to our original strategy – write the equation in the $ax + b = c$ format and use the Order of Operations in reverse using the (inverse) opposite operation.

Example: Solve for x ; $8x - 2(3x - 7) = 10$

$$8x - 6x + 14 = 10$$

$$2x + 14 = 10$$

$$2x = -4$$

$$x = -2$$

Solve the following

1. $3(x + 2) = x + 14$

2. $4(x - 1) = 2x + 10$

3. $5(x + 3) = 3x + 19$

4. $6(x - 2) = 4x + 8$

5. $7(x + 1) = 5x + 15$

6. $8(x - 4) = 6x - 4$

7. $3(x + 5) = x + 17$

8. $4(x - 3) = 2x + 2$

9. $5(x + 2) = 3x + 16$

10. $6(x + 1) = 4x + 12$

11. $7(x - 2) = 5x + 2$

12. $8(x + 3) = 6x + 19$

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.

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

Linear Equations; Distributive Property

Strategy

Transform equations that you don't recognize into $ax + b = c$ format by using the Properties of Real Numbers.

Get rid of the parentheses by using the Distributive Property, combine "like" terms, then go back to our original strategy – write the equation in the $ax + b = c$ format and use the Order of Operations in reverse using the (inverse) opposite operation.

Example: Solve for x; $8x - 2(3x - 7) = 10$

$$8x - 6x + 14 = 10$$

$$2x + 14 = 10$$

$$2x = -4$$

$$x = -2$$

Solve the following

1. $2(3x + 4) = 20$

2. $3(2x - 5) = 9$

3. $4(x + 3) = 2x + 18$

4. $5(2x - 1) = 4x + 14$

5. $3(3x + 2) = 24$

6. $2(4x - 3) = 18$

7. $4(2x + 1) = 28$

8. $5(x - 2) = 3x + 8$

9. $3(2x + 5) = x + 21$

10. $2(5x - 4) = 3x + 17$

11. $4(3x - 2) = 2x + 28$

12. $6(x + 1) = 4x + 22$

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.

13. $3(x+4) - 5 = -2(x-2) + 18$