



## Simplifying Linear Equations

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Grade 8 Linear Equations Worksheet

Date: \_\_\_\_\_

Name: \_\_\_\_\_

### LET'S MAKE LEARNING LINEAR EQUATIONS FUN

Simplify the following Linear Equations

1.  $5 + 3(x - 1) = 5x - 6$

2.  $5 - 3(5x + 2) = 4(7 - 3x) + 1$

3.  $3(2y + 4) + 4(y + 1) = 26$

4.  $-5(4x + 1) - 3(3x - 5) = -48$

5.  $-4(2b - 40) + 2(2b + 1) + 3(-b + 3) = 20$

6.  $-2(4y - 2) - 2(3y + 10) = 30$

7.  $-4(4y - 5) + 3(-5 + 4) + 5(y + 3) = 83$

8.  $4(3b - 1) - 2(5b + 2) = 36$

9.  $4(-2x + 1) - 4(x - 1) = 44$

10.  $-1(5m - 5) - 1(-2m - 1) = 3$



## Simplifying Linear Equations

### ANSWERS

1. 4

2. -10

3. 1

4. 2

5. -21.57

6. -3.29

7. -4.63

8. 22

9. -3

10. 1

## Simplifying Linear Equations

### Workings

1. Simplify:

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

$$5 + 3x - 3 = 5x - 6$$

$$3x - 5x = -6 + 3 - 5$$

$$-2x = -8$$

$$x = 4$$

2. Simplify:

$$5 - 3(5x + 2) = 4(7 - 3x) + 1$$

$$5 - 15x - 6 = 28 - 12x + 1$$

$$-15x + 12x = 28 + 1 + 6 - 5$$

$$-3x = 30$$

$$x = -10$$

3. Simplify:

$$3(2y + 4) + 4(y + 1) = 26$$

$$6y + 12 + 4y + 4 = 26$$

$$6y + 4y = 26 - 12 - 4$$

$$10y = 10$$

$$x = 1$$

4. Simplify:

$$-5(4x + 1) - 3(3x - 5) = -48$$

$$-20x - 5 - 9x + 15 = -48$$

$$-20x - 9x = -48 + 5 - 15$$

$$-29x = -58$$

$$x = 2$$

5. Simplify:

$$-4(2b - 40) + 2(2b + 1) + 3(-b + 3) = 20$$

$$-8b + 160 + 4b + 2 - 3b + 9 = 20$$

$$-8b + 4b - 3b = 20 - 160 - 2 - 9$$

$$-7b = -151$$

$$b = -21.57$$

6. Simplify:  $-2(4y - 2) - 2(3y + 10) = 30$

$$\begin{aligned}
 -8y + 4 - 6y - 20 &= 30 \\
 -8y - 6y &= 30 + 20 - 4 \\
 -14y &= 46 \\
 y &= -3.29
 \end{aligned}$$

7. Simplify:  $-4(4y - 5) + 3(-5 + 4) + 5(y + 3) = 83$

$$\begin{aligned}
 -16y + 20 - 15 + 12 + 5y + 15 &= 83 \\
 -16y + 5y &= 83 - 20 + 15 - 12 - 15 \\
 -11y &= 51 \\
 y &= -4.63
 \end{aligned}$$

8. Simplify:  $4(3b - 1) - 2(5b + 2) = 36$

$$\begin{aligned}
 12b - 4 - 10b - 4 &= 36 \\
 12b - 10b &= 36 + 4 + 4 \\
 2b &= 44 \\
 b &= 22
 \end{aligned}$$

9. Simplify:  $4(-2x + 1) - 4(x - 1) = 44$

$$\begin{aligned}
 -8x + 4 - 4x + 4 &= 44 \\
 -8x - 4x &= 44 - 4 - 4 \\
 -12x &= 36 \\
 x &= -3
 \end{aligned}$$

10. Simplify:  $-1(5m - 5) - 1(-2m - 1) = 3$

$$\begin{aligned}
 -5m + 5 + 2m + 1 &= 3 \\
 -5m + 2m &= 3 - 5 - 1 \\
 -3m &= -3 \\
 m &= 1
 \end{aligned}$$