

Multi-step equations

Solve each equation. Show your working, and write the answer on the line.

Name _____ Date _____

1. $4(x + 5) - 3x = 27$

2. $2(x + 7) + 6x = 94$

x = _____

x = _____

3. $2(x + 7) + 3x = 24$

4. $5(x + 8) + 4x = 103$

x = _____

x = _____

5. $6(x + 7) + 2x = 74$

6. $3(x + 4) + 3x = 36$

x = _____

x = _____

7. $2(x + 9) - x = 26$

8. $6(x + 1) + 2x = 38$

x = _____

x = _____

9. $6(x + 2) + 5x = 56$

10. $4(x + 1) - x = 13$

x = _____

x = _____

Multi-step equations: answer key

Each equation worked one step a line. What was done to both sides is beside each step.

1. $4(x + 5) - 3x = 27$

$4x + 20 - 3x = 27$ Multiply out the parentheses.

$x + 20 = 27$ Combine like terms.

$x = 7$ Subtract 20 from both sides.

Check: $4(7 + 5) - 3(7) = 27$

2. $2(x + 7) + 6x = 94$

$2x + 14 + 6x = 94$ Multiply out the parentheses.

$8x + 14 = 94$ Combine like terms.

$8x = 80$ Subtract 14 from both sides.

$x = 10$ Divide both sides by 8.

Check: $2(10 + 7) + 6(10) = 94$

3. $2(x + 7) + 3x = 24$

$2x + 14 + 3x = 24$ Multiply out the parentheses.

$5x + 14 = 24$ Combine like terms.

$5x = 10$ Subtract 14 from both sides.

$x = 2$ Divide both sides by 5.

Check: $2(2 + 7) + 3(2) = 24$

4. $5(x + 8) + 4x = 103$

$5x + 40 + 4x = 103$ Multiply out the parentheses.

$9x + 40 = 103$ Combine like terms.

$9x = 63$ Subtract 40 from both sides.

$x = 7$ Divide both sides by 9.

Check: $5(7 + 8) + 4(7) = 103$

5. $6(x + 7) + 2x = 74$

$6x + 42 + 2x = 74$ Multiply out the parentheses.

$8x + 42 = 74$ Combine like terms.

$8x = 32$ Subtract 42 from both sides.

$x = 4$ Divide both sides by 8.

Check: $6(4 + 7) + 2(4) = 74$

6. $3(x + 4) + 3x = 36$

$3x + 12 + 3x = 36$ Multiply out the parentheses.

$6x + 12 = 36$ Combine like terms.

$6x = 24$ Subtract 12 from both sides.

$x = 4$ Divide both sides by 6.

Check: $3(4 + 4) + 3(4) = 36$

7. $2(x + 9) - x = 26$

$2x + 18 - x = 26$ Multiply out the parentheses.

$x + 18 = 26$ Combine like terms.

$x = 8$ Subtract 18 from both sides.

Check: $2(8 + 9) - 8 = 26$

8. $6(x + 1) + 2x = 38$

$6x + 6 + 2x = 38$ Multiply out the parentheses.

$8x + 6 = 38$ Combine like terms.

$8x = 32$ Subtract 6 from both sides.

$x = 4$ Divide both sides by 8.

Check: $6(4 + 1) + 2(4) = 38$

9. $6(x + 2) + 5x = 56$

$6x + 12 + 5x = 56$ Multiply out the parentheses.

$11x + 12 = 56$ Combine like terms.

$11x = 44$ Subtract 12 from both sides.

$x = 4$ Divide both sides by 11.

Check: $6(4 + 2) + 5(4) = 56$

10. $4(x + 1) - x = 13$

$4x + 4 - x = 13$ Multiply out the parentheses.

$3x + 4 = 13$ Combine like terms.

$3x = 9$ Subtract 4 from both sides.

$x = 3$ Divide both sides by 3.

Check: $4(3 + 1) - 3 = 13$