

Multi-Step Equations with Distributive Property

Solve each equation. Show all your work.

$$\boxed{1} \quad 3(x + 4) = 21$$

$$\boxed{6} \quad -3(z - 5) = -18$$

$$\boxed{2} \quad 2(y - 5) = 14$$

$$\boxed{7} \quad 4(x + 1) = 20$$

$$\boxed{3} \quad -4(a + 3) = -28$$

$$\boxed{8} \quad 7(y - 2) = 35$$

$$\boxed{4} \quad 5(2x - 1) = 35$$

$$\boxed{9} \quad -2(a + 6) = -18$$

$$\boxed{5} \quad 4(2y + 3) = 44$$

$$\boxed{10} \quad 3(2x + 3) = 27$$

Multi-Step Equations with Distributive Property

Solve each equation. Show all your work.

$$1 \quad 3(x + 4) = 21$$

Step 1: Distribute: $3x + 12 = 21$
Step 2: Subtract 12: $3x = 9$
Step 3: Divide by 3: $x = 3$
Check: $3(3 + 4) = 3(7) = 21$ ✓

$$6 \quad -3(z - 5) = -18$$

Step 1: Distribute: $-3z + 15 = -18$
Step 2: Subtract 15: $-3z = -33$
Step 3: Divide by -3: $z = 11$
Check: $-3(11 - 5) = -3(6) = -18$ ✓

$$2 \quad 2(y - 5) = 14$$

Step 1: Distribute: $2y - 10 = 14$
Step 2: Add 10: $2y = 24$
Step 3: Divide by 2: $y = 12$
Check: $2(12 - 5) = 2(7) = 14$ ✓

$$7 \quad 4(x + 1) = 20$$

Step 1: Distribute: $4x + 4 = 20$
Step 2: Subtract 4: $4x = 16$
Step 3: Divide by 4: $x = 4$
Check: $4(4 + 1) = 4(5) = 20$ ✓

$$3 \quad -4(a + 3) = -28$$

Step 1: Distribute: $-4a - 12 = -28$
Step 2: Add 12: $-4a = -16$
Step 3: Divide by -4: $a = 4$
Check: $-4(4 + 3) = -4(7) = -28$ ✓

$$8 \quad 7(y - 2) = 35$$

Step 1: Distribute: $7y - 14 = 35$
Step 2: Add 14: $7y = 49$
Step 3: Divide by 7: $y = 7$
Check: $7(7 - 2) = 7(5) = 35$ ✓

$$4 \quad 5(2x - 1) = 35$$

Step 1: Distribute: $10x - 5 = 35$
Step 2: Add 5: $10x = 40$
Step 3: Divide by 10: $x = 4$
Check: $5(2(4) - 1) = 5(8 - 1) = 5(7) = 35$ ✓

$$9 \quad -2(a + 6) = -18$$

Step 1: Distribute: $-2a - 12 = -18$
Step 2: Add 12: $-2a = -6$
Step 3: Divide by -2: $a = 3$
Check: $-2(3 + 6) = -2(9) = -18$ ✓

$$5 \quad 4(2y + 3) = 44$$

Step 1: Distribute: $8y + 12 = 44$
Step 2: Subtract 12: $8y = 32$
Step 3: Divide by 8: $y = 4$
Check: $4(2(4) + 3) = 4(8 + 3) = 4(11) = 44$ ✓

$$10 \quad 3(2x + 3) = 27$$

Step 1: Distribute: $6x + 9 = 27$
Step 2: Subtract 9: $6x = 18$
Step 3: Divide by 6: $x = 3$
Check: $3(2(3) + 3) = 3(6 + 3) = 3(9) = 27$ ✓