

Lesson 5 Reteach

More Two-Step Equations

An equation in the form $p(x + q) = r$ contains two factors, p and $(x + q)$ and is considered a two-step equation.

Example 1

Solve $6(x + 2) = 42$. Check your solution.

$$6(x + 2) = 42$$

$$\frac{6(x + 2)}{6} = \frac{42}{6}$$

$$x + 2 = 7$$

$$\frac{-2}{-2} = \frac{-2}{-2}$$

$$x = 5$$

Write the equation.

Division Property of Equality
Simplify.

Subtraction Property of Equality
Simplify.

Check $6(x + 2) = 42$

$$6(5 + 2) \stackrel{?}{=} 42$$

$$6(7) \stackrel{?}{=} 42$$

$$42 = 42 \checkmark$$

Write the original equation.

Replace x with 5.

Add. Multiply.

The solution checks.

The solution is 5.

Example 2

Solve $\frac{4}{5}(x - 5) = 4$. Check your solution.

$$\frac{4}{5}(x - 5) = 4$$

$$\frac{5}{4} \cdot \frac{4}{5}(x - 5) = \frac{5}{4} \cdot 4$$

$$(x - 5) = \frac{5}{4} \cdot \frac{4}{1}$$

$$x - 5 = 5$$

$$\frac{+5}{+5} = \frac{+5}{+5}$$

$$x = 10$$

Write the equation.

Multiplication Property of Equality

$\frac{5}{4} \cdot \frac{4}{5} = 1$; write 4 as $\frac{4}{1}$.

Simplify.

Addition Property of Equality

Simplify.

Check $\frac{4}{5}(x - 5) = 4$

$$\frac{4}{5}(10 - 5) = 4$$

$$\frac{4}{5}(5) = 4 \checkmark$$

Write the original equation.

Replace x with 10.

Subtract then multiply.

The solution checks.

The solution is 10.

Exercises

Solve each equation.

1. $7(x + 4) = 49$

3

2. $2(x - 8) = -22$

-3

3. $10(x + 3) = -20$

-5

4. $25(x - 3) = 175$

10

5. $\frac{3}{4}(x - 12) = 3$

16

6. $\frac{2}{3}(x + 4) = 14$

17

7. $\frac{7}{9}(x + 5) = 21$

22

8. $\frac{1}{8}(x - 15) = 4$

47

Lesson 5 Skills Practice

More Two-Step Equations

Solve each equation. Check your solution.

1. $3(x + 5) = 39$

8

2. $7(x + 8) = 49$

-1

3. $-5(x - 6) = 15$

3

4. $10(x - 5) = -80$

-3

5. $4(x + 9) = 20$

-4

6. $6(x + 12) = -42$

-19

7. $\frac{4}{9}(x + 13) = 8$

5

8. $\frac{9}{10}(x + 8) = 18$

12

9. $\frac{2}{7}(x - 9) = -4$

-5

10. $\frac{3}{7}(x - 2) = 15$

37

11. $1.5(x + 7) = 11.25$

0.5

12. $4.5(x - 9) = -13.5$

6

13. $8.3(x - 3.1) = -37.35$

-1.4

14. $0.4(x + 2.4) = 2.96$

5

15. $\frac{4}{5}(x + 7) = 20$

18

16. $\frac{6}{11}(x + 5) = 6$

6

17. $-\frac{1}{8}(x - 4) = -4$

36

18. $\frac{2}{5}(x - 16) = -6$

1

19. $9.2(x + 6.4) = 132.48$

8

20. $8.2(x - 7) = -24.6$

4

21. $\frac{3}{5}(x - 19) = -15$

-6

22. $0.1(x + 7) = 3.5$

28

23. $-2.8(x + 4.9) = 18.2$

11.4

24. $6.5(x - 4) = 19.5$

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