

Equations Test Review

Name: _____ Period: _____

Solve each of the equations.

C- Section problems

1. $x + 5 = -3$

7. $\frac{x}{8} = -3$

2. $2x + 8 = 1$

8. $3x + 6 = 21$

3. $2(3x + 7) = 15$

9. $3(4x + 2) = 10$

4. $3x + 5(2x - 3) = -67$

10. $3x + 5(2x - 3) = -28$

5. $\frac{1}{2}(2x + 8) = 7$

11. $\frac{1}{2}(2x + 8) = 9$

6. $0.3(6 - 2.5x) + 3.1 = 9.4$

12. $0.3(6 - 2.5x) + 3.1 = 10.15$

B-Section problems

13. $2x + 5x - 3 = 15x - 7$

16. $3x + x - 6 = 4x - 7 + 8$

14. $2(2x + 5) - 6 = 6x + 10 - 2x - 6$

17. $2(3x + 5) - 6 = 6x + 10 - 2 - 6$

15. $3(2x + 9) - 7 = 6x + 30 - 15$

18. $5(2x + 9) - 27 = 6x + 4x + 18$

A- Section problems

19. Write an example of an equation that would result in no solutions.

20. Write an example of an equation that would result in one solution.

21. Write an example of an equation that would result in infinitely many solutions.

Solve each of the equations.

Section problems

1. $x + 5 = -3$

$$\begin{array}{r} -5 \quad -5 \\ \hline x = -8 \end{array}$$

2. $2x + 8 = 1$

$$\begin{array}{r} -8 \quad -8 \\ \hline 2x = -7 \\ \hline 2 \quad 2 \\ \hline x = -\frac{7}{2} \end{array}$$

3. $2(3x + 7) = 15$

$$\begin{array}{r} 6x + 14 = 15 \\ -14 \quad -14 \\ \hline 6x = 1 \end{array}$$

$$\begin{array}{r} 6 \quad 6 \\ \hline x = \frac{1}{6} \end{array}$$

4. $3x + 5(2x - 3) = -67$

$$\begin{array}{r} 3x + 10x - 15 = -67 \\ 13x - 15 = -67 \\ +15 \quad +15 \\ \hline 13x = -52 \end{array}$$

$$\begin{array}{r} 13x = -52 \\ \hline 13 \quad 13 \\ \hline x = -2 \end{array}$$

5. $\frac{1}{2}(2x + 8) = 7$

$$\begin{array}{r} 1x + 4 = 7 \\ -4 \quad -4 \\ \hline x = 3 \end{array}$$

$$\boxed{x = 3}$$

6. $0.3(6 - 2.5x) + 3.1 = 9.4$

$$\begin{array}{r} 1.8 - 0.75x + 3.1 = 9.4 \end{array}$$

$$\begin{array}{r} 4.9 - 0.75x = 9.4 \\ -4.9 \quad -4.9 \\ \hline -0.75x = 4.5 \end{array}$$

$$\begin{array}{r} -0.75x = 4.5 \\ \hline -0.25 \quad -0.75 \\ \hline x = -6 \end{array}$$

7. $\frac{x}{8} = -3$

$$\begin{array}{r} 8x \\ \hline 8 \quad 8 \\ \hline = -24 \end{array}$$

$$\boxed{x = -24}$$

8. $3x + 6 = 21$

$$\begin{array}{r} -6 \quad -6 \\ \hline 3x = 15 \\ \hline 3 \quad 3 \\ \hline x = 5 \end{array}$$

$$\boxed{x = 5}$$

9. $3(4x + 2) = 10$

$$\begin{array}{r} 12x + 6 = 10 \\ -6 \quad -6 \\ \hline 12x = 4 \end{array}$$

$$\begin{array}{r} 12 \quad 12 \\ \hline x = \frac{1}{3} \end{array}$$

10. $3x + 5(2x - 3) = -28$

$$\begin{array}{r} 3x + 10x - 15 = -28 \\ 13x - 15 = -28 \\ +15 \quad +15 \\ \hline 13x = -13 \end{array}$$

$$\begin{array}{r} 13x = -13 \\ \hline 13 \quad 13 \\ \hline x = -1 \end{array}$$

11. $\frac{1}{2}(2x + 8) = 9$

$$\begin{array}{r} 1x + 4 = 9 \\ -4 \quad -4 \\ \hline x = 5 \end{array}$$

$$\boxed{x = 5}$$

12. $0.3(6 - 2.5x) + 3.1 = 10.15$

$$\begin{array}{r} 1.8 - 0.75x + 3.1 = 10.15 \end{array}$$

$$\begin{array}{r} 4.9 - 0.75x = 10.15 \\ -4.9 \quad -4.9 \\ \hline -0.75x = 5.25 \end{array}$$

$$\begin{array}{r} -0.75x = 5.25 \\ \hline -0.25 \quad -0.75 \\ \hline x = -7 \end{array}$$

B-Section problems

13. $2x + 5x - 3 = 15x - 7$

$$\begin{array}{r} 7x - 3 = 15x - 7 \\ -15x \quad -15x \\ \hline \end{array}$$

$$\begin{array}{r} -8x - 3 = -7 \\ +3 \quad +3 \\ \hline \end{array}$$

$$\begin{array}{r} -8x = -4 \\ -8 \quad -8 \\ \hline \end{array}$$

$$x = \frac{1}{2}$$

14. $2(2x + 5) - 6 = 6x + 10 - 2x - 6$

$$4x + 10 - 6 = 4x + 4$$

$$\begin{array}{r} 4x + 4 = 4x + 4 \\ -4x \quad -4x \\ \hline \end{array}$$

$$4 = 4$$

Always True or
All solutions or
 ∞ many solutions

15. $3(2x + 9) - 7 = 6x + 30 - 15$

$$6x + 27 - 7 = 6x + 15$$

$$\begin{array}{r} 6x + 20 = 6x + 15 \\ -6x \quad -6x \\ \hline \end{array}$$

$$20 \neq 15$$

No Solution

16. $3x + x - 6 = 4x - 7 + 8$

$$\begin{array}{r} 4x - 6 = 4x + 1 \\ -4x \quad -4x \\ \hline \end{array}$$

$$-6 \neq 1$$

No solution

\emptyset

17. $2(3x + 5) - 6 = 6x + 10 - 2 - 6$

$$6x + 10 - 6 = 6x + 2$$

$$\begin{array}{r} 6x + 4 = 6x + 2 \\ -6x \quad -6x \\ \hline \end{array}$$

$$4 \neq 2$$

No solution

\emptyset

18. $5(2x + 9) - 27 = 6x + 4x + 18$

$$10x + 45 - 27 = 10x + 18$$

$$\begin{array}{r} 10x + 18 = 10x + 18 \\ -10x \quad -10x \\ \hline \end{array}$$

$$18 = 18$$

Always True or
 ∞ many solutions

A- Section problems

19. Write an example of an equation that would result in no solutions.

Any equation where the x's match exactly but the numbers don't.

20. Write an example of an equation that would result in one solution.

Any equation where the x's don't match exactly (don't cancel out).

21. Write an example of an equation that would result in infinitely many solutions.

Any equation where the x's match exactly and the numbers do, too.