

NAME _____

Module 3 Solving Linear Equations
of One Variable

Lesson 2 Solving Equations by Inspection



**independent
practice**

Solve each equation by inspection and write the solution in proper notation.
Check your solution.

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|--|--|
| 1. $x + 8 = 10$ $x = 2$ _____ | 2. $y + 4 = 9$ $y = 5$ _____ |
| 3. $7 + m = 15$ $m = 8$ _____ | 4. $9 + n = 18$ $n = 9$ _____ |
| 5. $c - 3 = 7$ $c = 10$ _____ | 6. $b - 2 = 14$ $b = 16$ _____ |
| 7. $15 - r = 6$ $r = 9$ _____ | 8. $12 - s = 5$ $s = 7$ _____ |
| 9. $a + 5 = 5$ $a = 0$ _____ | 10. $f + 1 = 1$ $f = 0$ _____ |
| 11. $P - 6 = 0$ $P = 6$ _____ | 12. $V - 0 = 0$ $V = 0$ _____ |
| 13. $3w = 27$ $w = 9$ _____ | 14. $5z = -25$ $z = -5$ _____ |
| 15. $-11z = 0$ $z = 0$ _____ | 16. $12s = 36$ $s = 3$ _____ |
| 17. $P \div 3 = 6$ $P = 18$ _____ | 18. $D \div 2 = -8$ $D = -16$ _____ |
| 19. $14 \div G = 2$ $G = 7$ _____ | 20. $22 \div V = 11$ $V = 2$ _____ |
| 21. $\frac{K}{9} = 0$ $K = 0$ _____ | 22. $-\frac{M}{5} = 0$ $M = 0$ _____ |
| 23. $\frac{12}{n} = 3$ $n = 4$ _____ | 24. $\frac{35}{x} = -7$ $x = -5$ _____ |

Journal

1. Explain why the use of variables helps in solving equations by inspection.
2. Explain what it means to substitute for a variable. Use an example in your explanation.
3. When solving equations, is solving by inspection always the best alternative?
4. Explain why checking is a valuable tool in solving equations.
5. Describe how to use mental math to solve equations.

Cumulative Review

Use the order of operations to simplify.

1. $5 - 12 \div (-4)$ **8** _____

2. $2 + 3(2 - 7)$ **-13** _____

3. $6^2 + 7^2$ **85** _____

4. $-4^2 + (-3)^2$ **-7** _____

5. $\sqrt[3]{-8} + 5$ **3** _____

6. $-|7| + \sqrt{49} \div 7$ **-6** _____

Evaluate $2L + 2W$ for the following values.

7. $L = 16; W = 25$ **82** _____

8. $L = 12; W = 43$ **110** _____

Evaluate $b^2 - 4ac$ for the following values.

9. $a = 2; b = -3; c = 5$ **-31** _____

10. $a = 1; b = -4; c = 4$ **0** _____

Possible Journal Answers

1. A variable is a “place holder” in an equation, which can be solved for to find its value. If you did not use variables, it would be difficult to solve equations. If you find a value for a variable, you can substitute it back into the original equation to check our answer.
2. Substitute means to give a value to a variable. In the equation $x - 5 = 10$, if you substitute 15 for x , then you have $15 - 5 = 10$, this is a true statement. The value you substituted for x is correct.
3. No. When dealing with more complex equations you will want to use algebraic properties to solve equations. Algebra will enable you to solve equations systematically.
4. If you check an equation, you can determine if a value for the variable is correct. If you produce an incorrect statement, either the chosen value for the variable is incorrect or the statement itself is incorrect.
5. The use of mental math is solving by inspection. If you can correctly determine a solution for an equation in your head, then you are solving by inspection.