ALBERT

Name _____ Date _____

Solutions of Equations and Inequalities Worksheet

Grade 6 · Common Core 6.EE.B.5

> Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.

Practice

Builds the skill step by step.

1. Is $x = 4$ a solution of $x + 9 = 13$? Answer yes or no.

2. Is $y = 6$ a solution of $3y = 15$? Answer yes or no.

3. Which value of n makes $n - 7 = 12$ true?

   A. 5

   B. 19

   C. 12

   D. 84

4. Is $a = 2$ a solution of $a + 5 > 6$? Answer yes or no.

5. Which value from $\{2, 3, 4\}$ makes $5m = 20$ true?

6. Which value is a solution of $k \div 3 = 6$?

   A. 18

   B. 2

   C. 9

   D. 3

7. Is $x = 10$ a solution of $x - 4 < 5$? Answer yes or no.

8. Which value from $\{6, 7, 8\}$ makes $w + 2.5 = 10.5$ true?

9. Is $b = 0$ a solution of $4b = 0$? Answer yes or no.

10. Which value from $\{1, 3, 5\}$ makes $2x + 1 = 7$ true?

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On Level

Grade-level practice.

1. Which values from {1, 2, 3, 4, 5} make $x + 3 > 6$ true?

2. Which value from $\{\frac{1}{2}, \frac{3}{4}, 1\}$ makes $4y = 3$ true?

3. Which value from the set {5, 10, 15, 20} is NOT a solution of $n \leq 15$?

   A. 15

   B. 20

   C. 10

   D. 5

4. Is $p = 1.2$ a solution of $5p = 6$? Show your check.

5. Which values from {0, 2, 4, 6, 8} make $3x - 2 \geq 10$ true?

6. A movie ticket costs $9. Kai has $50. Does buying $t = 5$ tickets satisfy $9t \leq 50$?

7. Which equation has n = 6 as a solution?

   A. $n + 6 = 6$

   B. $2n = 6$

   C. $n \div 2 = 3$

   D. $n - 3 = 6$

8. Which value from {12, 16, 20} makes $\frac{x}{4} = 5$ true?

9. How many values from {1, 2, 3, 4, 5, 6} make $2x < 9$ true?

10. Is m = 7 a solution of $20 - 2m = 6$? Answer yes or no.

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Challenge

Multi-step and word problems that stretch it.

1. Find every value from {0, 1, 2, 3, 4, 5} that makes both $x + 2 > 3$ and $2x < 8$ true.

2. Does the equation $x + 5 = x + 6$ have a solution in the set {0, 1, 2, 3}? Explain.

3. An elevator holds at most 1,200 pounds. Which number of 180-pound crates c is a solution of $180c \leq 1{,}200$?

   A. 7

   B. 8

   C. 6

   D. 10

4. A number n is in the set {3, 6, 9, 12}. It makes $n \div 3 + 2 = 6$ true. What is n?

5. Ty says $x = 3$ is a solution of $4x - 5 = 17$ because $4 \times 3 = 12$ and $12 + 5 = 17$. What mistake did he make?

6. Which values from $\{\frac{1}{4}, \frac{1}{2}, \frac{3}{4}, 1\}$ make $8y > 5$ true?

7. Write an equation that has $x = 9$ as a solution and uses division.

8. A plant is 4 inches tall and grows 2 inches per week. Is $w = 6$ weeks a solution of $4 + 2w > 15$?

9. For which values in $\{1, 2, 3, 4\}$ is $10 - x$ equal to $2x + 1$?

10. The inequality $s \geq 60$ describes passing scores. Which of these scores pass: 45, 60, 72, 59?