HW - Substitution to Determine if an Equation or Inequality is True

Short Answer

1. Circle **all** the values for x that make the following inequality true.

   $x > -3$

   A $x = -10$
   B $x = 0$
   C $x = 10$
   D $x = 2$
   E $x = -2$

2. A student solves the equation $y - 8 = 15$ and gets an answer of $y = 19$. Is this student correct? Prove your answer using substitution.

3. a. List three values for b that make the following inequality true.
   b. List three values for b that make the following inequality not true.

   $b \leq 9$

4. Circle **all** the values for m that make the following inequality true.

   $3m - 4 \leq 8$

   A $m = 2$
   B $m = 3$
   C $m = 10$
   D $m = 4$
   E $m = 5$

5. a. List three values for c that make the following inequality true.
   b. List three values for c that make the following inequality not true.

   $c - 12 \geq 22$

6. A student solves the equation $5z - 9 = 21$ and gets an answer of $z = 6$. Is this student correct? Prove your answer using substitution.

7. The tallest boy on the basketball team is 77.5 inches tall. This is 8.25 inches taller than the shortest player on the team. Write and solve an equation to find the height of the shortest player.

   1) Define the variable.
   2) Write an equation.
   3) Solve the equation.

8. Alex earned $510 this summer washing cars. The total was 5 times more than what he earned last summer. Write and solve an equation to find out how much he earned last summer.

   1) Define the variable.
   2) Write an equation.
   3) Solve the equation.

Numeric Response

Solve each equation.

9. $10 = x - 11$

10. $x + 4 = 20$

11. $\dfrac{x}{6} = 7$

12. $35.8 = 8.2 + x$

13. $53.11 = 11.3x$

14. $60 = 12x$

HW - Substitution to Determine if an Equation or Inequality is True
Answer Section

SHORT ANSWER

1. B, C, D, E
2. No, substitute 19 in for y and you get $11 = 15$, which is not equal
3. a. Three values where $b \leq 9$
   b. Three values where $b > 9$
4. A, B, D
5. a. Three values where $c \geq 34$
   b. Three values where $c < 34$
6. Yes, substitute 6 in for z and you get $21 = 21$, which is equal
7. h = height of the shortest player
   h + 8.25 = 77.5
   h = 69.25 inches
8. x = amount earned last summer
   5x = 510
   x = $102

NUMERIC RESPONSE

9. 21
10. 16
11. 42
12. 27.6
13. 4.7
14. 5