Substitution checks

6 questions | 14 marks

Equivalent correct methods earn the corresponding marks.

1. Check $x = 5$ in $2x + 3 = 13$. [2 marks]

The left side is $10 + 3 = 13$.

It equals the right side.

Answer: It is a solution.

2. Check $x = -1$ in $4x + 2 = -2$. [2 marks]

The left side is $-4 + 2 = -2$.

Both values agree.

Answer: It is a solution.

3. Check $x = 2$ in $3(x + 1) = 8$. [2 marks]

The left side is $3(3) = 9$.

Nine is not eight.

Answer: It is not a solution.

4. Check $x = \frac{3}{2}$ in $4x - 1 = 5$. [2 marks]

The left side is $6 - 1 = 5$.

It equals the right side.

Answer: It is a solution.

5. A student gets $x = 5$ for $5x + 4 = 24$. Check the guess and find the correct solution. [3 marks]

At 5 the left side is 29, so the guess fails.

Subtract 4 and divide by 5; $5(4) + 4 = 24$.

Answer: $x = 4$.

6. Which of $x = -2, 0, 2$ solves $3x + 2 = x - 2$? Show the checks. [3 marks]

At -2, the two sides are -4 and -4.

At 0 they are 2 and -2; at 2 they are 8 and 0.

Answer: Only $x = -2$.