LESSON MAKER PRO

Check It Twice

Solve each equation, then prove your solution works.

GRADE 7 · 7.PFA.3.c

7.PFA.3.c "Confirm algebraic solutions to linear equations in one variable."

NAME _____ DATE _____

SOLVE, THEN CHECK

First, use inverse operations to get x by itself. Then substitute your value for x in the original equation. If both sides are equal, your solution is confirmed.

WORKED EXAMPLE

Solve and confirm: $4x + 7 = 31$

1. Subtract 7 from both sides: $4x = 24$.
2. Divide both sides by 4: $x = 6$.
3. Check: $4(6) + 7 = 31$, so $x = 6$ is correct.

Answer: x = 6

PRACTICE 6 problems

1 Solve and confirm: $3x + 5 = 20$

ANSWER _____

2 Solve and confirm: $8x + 3 = 43$

ANSWER _____

3 Solve and confirm: $x/5 + 9 = 12$

ANSWER _____

4 Solve and confirm: $5x - 12 = 28$

ANSWER _____

5 Solve and confirm: $5(x - 2) = 35$

ANSWER _____

6 Solve and confirm: $x/9 + 2 = 5$

ANSWER _____

APPLY IT Show your work

1 Jalen joins an after-school coding club. The club charges a $5 registration fee and $12 for each workshop. Jalen pays $65 total. How many workshops does Jalen attend? Write an equation, solve it, and confirm your answer.

WORK SPACE

ANSWER _____

2 A game tournament gives 2 starting points and 13 points for each round won. Priya has 67 points. How many rounds did Priya win? Write an equation, solve it, and confirm your answer.

WORK SPACE

ANSWER _____

CHALLENGE One step up

Solve and confirm: 8(x - 2) = 5x + 27. Explain how your substitution check proves that your answer is correct.

WORK SPACE AND ANSWER

ANSWER KEY

Check It Twice

GRADE 7 · 7.PFA.3.c

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Solve and confirm: 3x + 5 = 20	**x = 5; check: 3(5) + 5 = 20.**
2	Solve and confirm: 8x + 3 = 43	**x = 5; check: 8(5) + 3 = 43.**
3	Solve and confirm: x/5 + 9 = 12	**x = 15; check: 15/5 + 9 = 12.**
4	Solve and confirm: 5x - 12 = 28	**x = 8; check: 5(8) - 12 = 28.**
5	Solve and confirm: 5(x - 2) = 35	**x = 9; check: 5(9 - 2) = 35.**
6	Solve and confirm: x/9 + 2 = 5	**x = 27; check: 27/9 + 2 = 5.**

PART 2 · APPLY IT

1. **x = 5 workshops; check: 12(5) + 5 = 65.** Use 12x + 5 = 65. Subtract 5, then divide by 12 to get x = 5.
2. **x = 5 rounds; check: 13(5) + 2 = 67.** Use 13x + 2 = 67. Subtract 2, then divide by 13 to get x = 5.

CHALLENGE

x = 43/3. Expanding gives 8x - 16 = 5x + 27, so 3x = 43. Check: 8(43/3 - 2) = 296/3 and 5(43/3) + 27 = 296/3, so both sides are equal.

Accept any correct algebraic work followed by a substitution check in the original equation. For the challenge, accept equivalent fraction calculations that show both sides equal 296/3.