LESSON MAKER PRO

Equation Escape Route

Use properties to isolate x.

GRADE 8 · 8.PFA.4.b

8.PFA.4.b "Apply properties of real numbers and properties of equality to solve multistep linear equations in one variable (up to four steps). Coefficients and numeric terms will be rational..."

NAME _____ DATE _____

KEEP BOTH SIDES EQUAL

Use the distributive property first when a number multiplies parentheses. Combine like terms, then use the same operation on both sides to isolate x. Check your answer by substituting it into the original equation.

WORKED EXAMPLE

Solve: 11(x - 4) + 13 = 68

1. Distribute: 11x - 44 + 13 = 68
2. Combine constants: 11x - 31 = 68
3. Add 31 to both sides: 11x = 99
4. Divide both sides by 11: x = 9

Answer: x = 9

PRACTICE 6 problems

1 Solve: 6x + 14 = 50

ANSWER _____

2 Solve: 8(x - 2) = 40

ANSWER _____

3 Solve: 5x + 12 - 2x = 30

ANSWER _____

4 Solve: 7(x + 1) - 8 = 34

ANSWER _____

5 Solve: 3/4x + 6 = 18

ANSWER _____

6 Solve: 2(x + 7) + 5x = 41

ANSWER _____

APPLY IT Show your work

1 An art club makes 2 prize packs. Each pack has x custom buttons and 5 logo buttons. The club adds 6 loose buttons, making 32 buttons altogether. How many custom buttons are in each prize pack?

WORK SPACE

ANSWER _____

2 Six friends enter a gaming tournament. Each friend pays x dollars for entry and a $2 equipment fee. The group also gives a $3 donation, and their total is $45. What is the entry fee for each friend?

WORK SPACE

ANSWER _____

CHALLENGE One step up

Solve: 3/2(x - 2) + 5 = 1/2x + 12

WORK SPACE AND ANSWER

ANSWER KEY

Equation Escape Route

GRADE 8 · 8.PFA.4.b

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Solve: 6x + 14 = 50	**x=6**
2	Solve: 8(x - 2) = 40	**x=7**
3	Solve: 5x + 12 - 2x = 30	**x=6**
4	Solve: 7(x + 1) - 8 = 34	**x=5**
5	Solve: 3/4x + 6 = 18	**x = 16**
6	Solve: 2(x + 7) + 5x = 41	**x = 27/7**

PART 2 · APPLY IT

1. **8 custom buttons** Write 2(x + 5) + 6 = 32. Distribute and solve to get x = 8.
2. **$5** Write 6(x + 2) + 3 = 45. Distribute and solve to get x = 5.

CHALLENGE

x = 10

Accept equivalent fraction forms for problem 6, including 3 6/7. In the word problems, accept the correct value with its stated unit.