LESSON MAKER PRO

Equation Escape Route

Use inverse operations to isolate x.

GRADE 8 · NY-8.EE.7

NY-8.EE.7 "Solve linear equations in one variable."

NAME _____ DATE _____

KEEP BOTH SIDES BALANCED

Use inverse operations to get x alone, and do the same operation to both sides of the equation. Simplify each side as you go. If x is on both sides, move the x terms to one side before solving.

WORKED EXAMPLE

Solve: $4(x - 3) + 5 = 21$

1. $4x - 12 + 5 = 21$
2. $4x - 7 = 21$
3. $4x = 28$
4. $x = 7$

Answer: x = 7

PRACTICE 6 problems

1 Solve: $x + 8 = 14$

ANSWER _____

2 Solve: $8x = 64$

ANSWER _____

3 Solve: $2x - 1 = 15$

ANSWER _____

4 Solve: $x/11 + 2 = 6$

ANSWER _____

5 Solve: $6(x + 2) = 48$

ANSWER _____

6 Solve: $14x + 1 = 8x + 37$

ANSWER _____

APPLY IT Show your work

1 Maya has a $67 budget for a concert fan club. There is a $13 sign-up fee, and each monthly pass costs $9. How many monthly passes can Maya buy?

WORK SPACE

ANSWER _____

2 Andre has $83 in his game account. He buys x download packs at $10 each and has $23 left. How many download packs did he buy?

WORK SPACE

ANSWER _____

CHALLENGE One step up

A student says that 9(x - 2) = 9x - 18 has one solution. Is the student correct? Explain your reasoning.

WORK SPACE AND ANSWER

ANSWER KEY

Equation Escape Route

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PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Solve: x + 8 = 14	**x = 6**
2	Solve: 8x = 64	**x = 8**
3	Solve: 2x - 1 = 15	**x = 8**
4	Solve: x/11 + 2 = 6	**x = 44**
5	Solve: 6(x + 2) = 48	**x = 6**
6	Solve: 14x + 1 = 8x + 37	**x = 6**

PART 2 · APPLY IT

1. **6 monthly passes** Write 13 + 9x = 67. Subtract 13, then divide by 9 to get x = 6.
2. **6 download packs** Write 83 - 10x = 23. Subtract 83 from both sides, then divide by -10 to get x = 6.

CHALLENGE

No. All real numbers are solutions because distributing gives 9x - 18 = 9x - 18, which is true for every value of x.

Accept equivalent equation-solving work and answers written as a value of x. For the challenge, accept "infinitely many solutions" if the student explains that both sides simplify to the same expression.