LESSON MAKER PRO

Equation Escape

Use inverse operations to solve two-step equations.

GRADE 7 · MA.7.AR.2.2

MA.7.AR.2.2 "Write and solve two-step equations in one variable within a mathematical or real-world context, where all terms are rational numbers."

NAME _____ DATE _____

KEEP IT BALANCED

Undo addition or subtraction first. Then undo multiplication or division. Do the same operation to both sides, and check your solution in the original equation.

WORKED EXAMPLE

Solve: $4x - 9 = 19$

1. Add 9 to both sides: $4x = 28$
2. Divide both sides by 4: $x = 7$
3. Check: $4(7) - 9 = 19$

Answer: x = 7

PRACTICE 6 problems

1 Solve: $3x + 8 = 23$

ANSWER _____

2 Solve: $x/2 - 6 = 5$

ANSWER _____

3 Solve: $-5x + 11 = -14$

ANSWER _____

4 Solve: $(2/3)x + 1 = 13$

ANSWER _____

5 Solve: $x/5 + 12 = 15$

ANSWER _____

6 Solve: $-x/3 + 10 = 2$

ANSWER _____

APPLY IT Show your work

1 A school club sells custom sticker sheets to help fund a gaming event. The club charges $3 for each sheet and pays a $10 setup fee. After paying the fee, the club has $8. How many sticker sheets did the club sell?

WORK SPACE

ANSWER _____

2 Maya has $6 saved for a game. She earns $2.50 for each dog walk. When she has $21, how many dog walks has she completed?

WORK SPACE

ANSWER _____

CHALLENGE One step up

Solve: -(2/3)x + 5 = -13. Explain how the negative coefficient affects the last step.

WORK SPACE AND ANSWER

ANSWER KEY

Equation Escape

GRADE 7 · MA.7.AR.2.2

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Solve: 3x + 8 = 23	**x=5**
2	Solve: x/2 - 6 = 5	**x = 22**
3	Solve: -5x + 11 = -14	**x=5**
4	Solve: (2/3)x + 1 = 13	**x = 18**
5	Solve: x/5 + 12 = 15	**x = 15**
6	Solve: -x/3 + 10 = 2	**x = 24**

PART 2 · APPLY IT

1. **6 sticker sheets** Let x be the number of sticker sheets. Solve 3x - 10 = 8 to get 3x = 18, so x = 6.
2. **6 dog walks** Let x be the number of dog walks. Solve 2.50x + 6 = 21 to get 2.50x = 15, so x = 6.

CHALLENGE

x = 27. After subtracting 5, divide by -2/3, so the result changes from -18 to 27. Check: -(2/3)(27) + 5 = -13.

Accept equivalent equation work and correct rational-number forms. For the word problems, accept the numerical answer when the correct unit is clear.