LESSON MAKER PRO

Equation Escape Route

Untangle multistep equations one move at a time.

GRADE 8 · 8.PFA.4.e

8.PFA.4.e "Solve problems in context that require the solution of a multistep linear equation."

NAME _____ DATE _____

KEEP IT BALANCED

Keep both sides of an equation equal by doing the same operation to each side. If you see parentheses, distribute first, then combine like terms and isolate x.

WORKED EXAMPLE

Solve: 17(x - 19) + 23 = 312

1. Distribute: 17x - 323 + 23 = 312.
2. Combine like terms: 17x - 300 = 312.
3. Add 300 to both sides: 17x = 612.
4. Divide by 17: x = 36.

Answer: x = 36

PRACTICE 6 problems

1 Solve: 3x + 9 = 30

ANSWER _____

2 Solve: 5(x + 1) + 2 = 22

ANSWER _____

3 Solve: 9x - 10 = 2x + 18

ANSWER _____

4 Solve: 2(x - 11) + 20 = 40

ANSWER _____

5 Solve: 13 - 4(x + 1) = -7

ANSWER _____

6 Solve: (x + 14)/3 + 5 = 15

ANSWER _____

APPLY IT Show your work

1 A music app charges a $9 monthly fee plus $3 for each song pack. Jordan's bill is $30. How many song packs did Jordan buy?

WORK SPACE

ANSWER _____

2 A school club orders hoodies for a tournament. The printer charges an $18 setup fee and $14 per hoodie. The total cost is $88. How many hoodies did the club order?

WORK SPACE

ANSWER _____

CHALLENGE One step up

Solve: $4(3x - 2) + 9 = 5(x + 4) + 11$

WORK SPACE AND ANSWER

ANSWER KEY

Equation Escape Route

GRADE 8 · 8.PFA.4.e

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Solve: 3x + 9 = 30	**x=7**
2	Solve: 5(x + 1) + 2 = 22	**x=3**
3	Solve: 9x - 10 = 2x + 18	**x=4**
4	Solve: 2(x - 11) + 20 = 40	**x = 21**
5	Solve: 13 - 4(x + 1) = -7	**x=4**
6	Solve: (x + 14)/3 + 5 = 15	**x = 16**

PART 2 · APPLY IT

1. **7 song packs** Write 9 + 3x = 30. Subtract 9, then divide by 3 to get x = 7.
2. **5 hoodies** Write 14x + 18 = 88. Subtract 18, then divide by 14 to get x = 5.

CHALLENGE

x = 30/7

Accept equivalent equation steps that preserve equality. For the challenge, accept x = 30/7 or x = 4 2/7.