LESSON MAKER PRO

Equation Escape Room

Solve, model, and check two-step equations.

GRADE 7 · 7.PFA.3

7.PFA.3 "The student will write and solve two-step linear equations in one variable, including problems in context, that require the solution of a two-step linear equation in one variable..."

NAME _____ DATE _____

KEEP IT BALANCED

Use inverse operations to undo the number added to or subtracted from the x-term first. Do the same operation to both sides so the equation stays balanced. Then undo multiplication or division and substitute your answer to check it.

WORKED EXAMPLE

Solve 4x - 7 = 21.

1. Add 7 to both sides: 4x = 28.
2. Divide both sides by 4: x = 7.
3. Check: 4(7) - 7 = 21.

Answer: x = 7

PRACTICE 6 problems

1 Solve 3x + 5 = 20.

ANSWER _____

2 Solve 2x - 9 = 15.

ANSWER _____

3 Solve x/6 + 5 = 10.

ANSWER _____

4 Solve -2x + 8 = 18.

ANSWER _____

5 Solve (3/4)x + 2 = 14.

ANSWER _____

6 A balance model shows 5 x-tiles and 3 unit tiles on the left side. The right side has 33 unit tiles. Write and solve an equation for x.

ANSWER _____

APPLY IT Show your work

1 At an esports event, a gaming lounge charges $3 per hour plus a $6 pass fee. Maya paid $24. How many hours did Maya use the lounge?

WORK SPACE

ANSWER _____

2 A hoodie is marked down so that you pay 3/4 of its original price, then $5 shipping is added. The total cost is $20. What was the original price?

WORK SPACE

ANSWER _____

CHALLENGE One step up

Solve -3/5x - 6 = 9. Explain by checking your solution in the original equation.

WORK SPACE AND ANSWER

ANSWER KEY

Equation Escape Room

GRADE 7 · 7.PFA.3

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Solve 3x + 5 = 20.	**x=5**
2	Solve 2x - 9 = 15.	**x = 12**
3	Solve x/6 + 5 = 10.	**x = 30**
4	Solve -2x + 8 = 18.	**x = -5**
5	Solve (3/4)x + 2 = 14.	**x = 16**
6	A balance model shows 5 x-tiles and 3 unit tiles on the left side. The right side has 33 unit tiles. Write and solve an equation for x.	**5x + 3 = 33; x = 6**

PART 2 · APPLY IT

1. **x = 6 hours** Let x be the number of hours. Subtract 6 from both sides, then divide by 3.
2. **x = $20** Let x be the original price. Subtract 5, then multiply both sides by 4/3.

CHALLENGE

x = -25, because -3/5(-25) - 6 = 15 - 6 = 9.

Accept equivalent equation forms and solutions with or without units when the unit is clear. For context problems, students should write an equation and give an answer that fits the situation.