LESSON MAKER PRO

Equation Detective

Write, solve, and check one-step equations.

GRADE 6 · 6.PFA.3

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

NAME _____ DATE _____

EQUATION CLUES

An equation has an equals sign, while an expression does not. A variable is a letter that stands for an unknown number, a coefficient is the number multiplied by a variable, and terms are parts separated by addition or subtraction. To solve an equation, use the inverse operation on both sides, then check by replacing the variable with your answer.

WORKED EXAMPLE

Solve $7x = -42$.

1. Start with $7x = -42$.
2. Divide both sides by 7.
3. $x = -6$.
4. Check: $7(-6) = -42$.

Answer: x = -6

PRACTICE 6 problems

1 In $6x + 11 = 35$, identify the variable, the coefficient, and the constant term.

ANSWER _____

2 Solve: $x + 14 = 39$

ANSWER _____

3 Solve: $x - 18 = -7$

ANSWER _____

4 Solve: $-4x = 28$

ANSWER _____

5 Solve: $(1/3)x = 9$

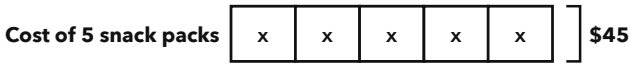
ANSWER _____

6 Solve: $x/6 = -5$

ANSWER _____

APPLY IT Show your work

1 The student council buys 5 identical snack packs for a game night. The total cost is $45. Let x be the cost of one snack pack. Write and solve an equation to find x.



ANSWER _____

2 Leila uses an $8 gift card to buy a graphic novel. After the gift card is used, she pays $17. Let x be the original price of the graphic novel. Write and solve an equation to find x.

WORK SPACE

ANSWER _____

CHALLENGE One step up

Create a real-world situation represented by x/8 = 11. State what x means and solve the equation.

WORK SPACE AND ANSWER

ANSWER KEY

Equation Detective

GRADE 6 · 6.PFA.3

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	In 6x + 11 = 35, identify the variable, the coefficient, and the constant term.	**variable: x; coefficient: 6; constant term: 11**
2	Solve: x + 14 = 39	**x = 25**
3	Solve: x - 18 = -7	**x = 11**
4	Solve: -4x = 28	**x = -7**
5	Solve: (1/3)x = 9	**x = 27**
6	Solve: x/6 = -5	**x = -30**

PART 2 · APPLY IT

1. **5x = 45; x = 9. One snack pack costs $9.** Write 5x = 45 because five equal pack costs total $45. Divide both sides by 5 to get x = 9.
2. **x - 8 = 17; x = 25. The original price is $25.** The gift card subtracts 8 from the original price, so write x - 8 = 17. Add 8 to both sides to get x = 25.

CHALLENGE

Answers will vary. Sample: A theater has x seats arranged equally in 8 sections. Each section has 11 seats, so x/8 = 11 and x = 88.

Accept equivalent equation forms for the word problems, such as 45 = 5x. For the challenge, accept any realistic equal-groups situation that matches x/8 = 11 and gives x = 88.