LESSON MAKER PRO

Build the Expression

Use x to describe a number that can change.

GRADE 6 · 6.EE.6

6.EE.6 "Use variables to represent unknown numbers and write expressions when solving a real-world or mathematical problem."

NAME _____ DATE _____

THE BIG IDEA

Use x for a number you do not know or a number that can change. Write an expression that shows what happens to x. Use parentheses when you need to group operations.

WORKED EXAMPLE

A game costs 14 tokens to enter and 9 tokens per round. Write an expression for the total cost of x rounds. Then find the cost of 2 rounds.

1. The rounds cost 9x tokens.
2. Add the entry cost: 14 + 9x.
3. For 2 rounds, 14 + 9(2) = 32.

Answer: 14 + 9x; 32 tokens

PRACTICE 6 problems

1 A number x is increased by 7. Write an expression for the result.

ANSWER _____

2 A number x is multiplied by 5, then decreased by 6. Write an expression for the result.

ANSWER _____

3 A number x is subtracted from 20. Write an expression for the result.

ANSWER _____

4 A number x is divided by 8, then increased by 10. Write an expression for the result.

ANSWER _____

5 A number x is decreased by 12, then the result is multiplied by 5. Write an expression and find its value when x = 17.

ANSWER _____

_____

6 A number x is multiplied by 6, then 18 is added. Write an expression and find its value when x = 7.

ANSWER _____

_____

APPLY IT Show your work

1 A gaming club charges $6 to join and $5 for each tournament. Let x be the number of tournaments you enter. Write an expression for your total cost. Then find the cost if you enter 8 tournaments.

WORK SPACE

ANSWER _____

2 You have 50 minutes to edit a video. Each clip takes x minutes to edit, and you edit 3 clips. Write an expression for the time you have left. Then find the time left if each clip takes 7 minutes.

WORK SPACE

ANSWER _____

CHALLENGE One step up

Movie tickets cost $8 each. One booking fee of $6 is added to the order, and a coupon takes $5 off the total. Let x be the number of tickets. Write an expression for the amount paid and find the amount for 7 tickets. Explain why 8(x + 6 - 5) does not show the amount paid.

WORK SPACE AND ANSWER

ANSWER KEY

Build the Expression

GRADE 6 · 6.EE.6

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	A number x is increased by 7. Write an expression for the result.	**x + 7**
2	A number x is multiplied by 5, then decreased by 6. Write an expression for the result.	**5x - 6**
3	A number x is subtracted from 20. Write an expression for the result.	**20 - x**
4	A number x is divided by 8, then increased by 10. Write an expression for the result.	**x/8 + 10**
5	A number x is decreased by 12, then the result is multiplied by 5. Write an expression and find its value when x = 17.	**5(x - 12); 25**
6	A number x is multiplied by 6, then 18 is added. Write an expression and find its value when x = 7.	**6x + 18; 60**

PART 2 · APPLY IT

1. **6 + 5x; $46** Add the one-time joining fee to the tournament costs. For 8 tournaments, 6 + 5(8) = 46.
2. **50 - 3x; 29 minutes** Subtract the time for 3 clips from 50 minutes. When x = 7, 50 - 3(7) = 29.

CHALLENGE

8x + 6 - 5, or 8x + 1; $57 for 7 tickets. The $6 fee is added once and the $5 discount is taken once. In 8(x + 6 - 5), the fee and discount are both multiplied by 8.

Accept equivalent expressions and correct values. In the challenge, accept any explanation that makes clear the fee and discount each apply once to the order, not to every ticket.