

Equation Story Studio

Turn each equation into a situation that makes sense.

GRADE 8 • 8.PFA.4.d

8.PFA.4.d "Create a verbal situation in context given a multistep linear equation in one variable."

NAME _____

DATE _____

BUILD THE STORY

A coefficient can show equal groups, parentheses can show what happens inside each group, and a number outside parentheses can be a one-time fee or adjustment. Define x , read the equation from the inside outward, and make every operation match a quantity in your situation.

WORKED EXAMPLE

Create a situation for $5(x - 3) + 4 = 29$.

1. Let x be the regular cost of one notebook cover.
2. $5(x - 3)$ means five covers, each costing x dollars after a \$3 discount.
3. $+ 4$ means add one \$4 delivery fee.
4. $= 29$ means the final cost is \$29.

Answer: A club buys 5 notebook covers that each cost x dollars before a \$3 discount. After the discounts, the club adds a \$4 delivery fee and pays \$29 total.

PRACTICE 6 problems

1 Create a situation for $2x + 7 = 25$.

ANSWER _____

2 Create a situation for $6(x - 1) = 42$.

ANSWER _____

3 Create a situation for $(x + 8) / 2 = 11$.

ANSWER _____

4 Create a situation for $7 + 2x = 31$.

ANSWER _____

5 Create a situation for $8x - 6 = 50$.

ANSWER _____

6 Create a situation for $7(x + 2) - 1 = 48$.

ANSWER _____

APPLY IT Show your work

- 1** A gaming club is planning a headset order. Create a situation for $9(x - 2) + 10 = 64$.

WORK SPACE

ANSWER _____

- 2** Six friends are planning to attend a concert. Create a situation for $(x + 18) / 6 = 14$.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

Create a situation for $2(6x - 7) + 8 = 66$. Then explain what $6x - 7$, the factor 2, and $+ 8$ mean in your situation.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Create a situation for $2x + 7 = 25$.	A streaming service charges a \$7 joining fee and \$2 for each of x movie rentals. The total cost is \$25.
2	Create a situation for $6(x - 1) = 42$.	Six friends each buy a game pass that costs x dollars and use a \$1 coupon. Together, they pay \$42.
3	Create a situation for $(x + 8) / 2 = 11$.	Two students split the cost of an item priced at x dollars and an \$8 fee equally. Each student pays \$11.
4	Create a situation for $7 + 2x = 31$.	A team pays a \$7 registration fee and \$2 for each of x wristbands. The total cost is \$31.
5	Create a situation for $8x - 6 = 50$.	A shopper buys x stickers for \$8 each and uses a \$6 coupon. The final cost is \$50.
6	Create a situation for $7(x + 2) - 1 = 48$.	Seven players each have x points and earn 2 bonus points. After a 1-point team penalty, their combined score is 48 points.

PART 2 • APPLY IT

- A gaming club orders 9 headsets that each cost x dollars. A \$2 discount is taken off each headset, then a \$10 shipping charge is added, for a total of \$64.** $9(x - 2)$ represents 9 discounted headsets. The $+ 10$ is one shipping charge, and 64 is the final cost.
- Six friends split the cost of a concert package priced at x dollars and an \$18 booking fee equally. Each friend pays \$14.** $x + 18$ is the full cost before it is shared. Dividing by 6 gives each friend's equal payment.

CHALLENGE

An art club buys 2 supply kits. Each kit has 6 paint sets that cost x dollars each, and the club uses a \$7 coupon on each kit. An \$8 delivery charge is added, making the total \$66. In this situation, $6x - 7$ is the cost of one kit after its coupon, 2 represents the two kits, and $+ 8$ represents the delivery charge.

Accept any realistic context that preserves the equation's operations, grouping, and quantities. Students may use different objects or money units if x is clearly defined and each term is represented correctly.