LESSON MAKER PRO

Model It Out

Turn real situations into one-step equations and inequalities.

GRADE 6 · 6.PAR.7

6.PAR.7 "Write and solve one-step equations and inequalities as mathematical models to explain authentic, realistic situations."

NAME _____ DATE _____

BUILD AND SOLVE

Use x to stand for the unknown amount. Translate the situation into an equation or inequality, then use the inverse operation to get x alone. For an inequality, keep the sign pointing the same way when you add or subtract the same amount on both sides.

WORKED EXAMPLE

Solve $5x = 45$.

1. $5x = 45$
2. Divide both sides by 5.
3. $x = 9$

Answer: x = 9

PRACTICE 6 problems

1 Write and solve: A library has x mystery books. It receives 17 more books and now has 46 mystery books.

ANSWER _____

2 Write and solve: A game score was x points. After losing 24 points, the score was 18 points.

ANSWER _____

3 Write and solve: Six identical art markers cost $48. Let x be the cost of one marker.

ANSWER _____

4 Write and solve: A student has x stickers. They make 7 equal pages with 6 stickers on each page.

ANSWER _____

5 Write and solve: Your battery is at 12%. It must stay below 31% after charging x percentage points.

ANSWER _____

6 Write and solve: Four equal packs contain at least 28 trading cards total. Let x be the number of cards in each pack.

ANSWER _____

APPLY IT Show your work

1 A student earns $72 for a used skateboard by selling 6 bracelets for the same price. Let x be the price of one bracelet. Write and solve an equation to find x.

WORK SPACE

ANSWER _____

2 A gaming club has at most 56 minutes for a tournament. Each match takes 7 minutes. Let x be the number of matches. Write and solve an inequality to find how many matches the club can schedule.

WORK SPACE

ANSWER _____

CHALLENGE One step up

A playlist has 60 songs. You want fewer than 75 songs after adding x songs. Write and solve an inequality. Then explain why 15 is not a solution.

WORK SPACE AND ANSWER

ANSWER KEY

Model It Out

GRADE 6 · 6.PAR.7

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Write and solve: A library has x mystery books. It receives 17 more books and now has 46 mystery books.	**x + 17 = 46; x = 29**
2	Write and solve: A game score was x points. After losing 24 points, the score was 18 points.	**x - 24 = 18; x = 42**
3	Write and solve: Six identical art markers cost $48. Let x be the cost of one marker.	**6x = 48; x = 8**
4	Write and solve: A student has x stickers. They make 7 equal pages with 6 stickers on each page.	**x / 7 = 6; x = 42**
5	Write and solve: Your battery is at 12%. It must stay below 31% after charging x percentage points.	**x + 12 < 31; x < 19**
6	Write and solve: Four equal packs contain at least 28 trading cards total. Let x be the number of cards in each pack.	**4x >= 28; x >= 7**

PART 2 · APPLY IT

1. **6x = 72; x = 12. Each bracelet costs $12.** Multiply the bracelet price by 6 to model the total earnings. Divide $72 by 6 to find the price of one bracelet.
2. **7x <= 56; x <= 8. The club can schedule no more than 8 matches.** Multiply the number of matches by 7 minutes and keep the total at or below 56 minutes. Divide both sides by 7.

CHALLENGE

x + 60 < 75; x < 15. Since songs are whole numbers, x can be 0 through 14. Adding 15 songs would make 75 songs, which is not fewer than 75.

Accept equivalent equation or inequality forms, such as 46 = x + 17. For context problems involving items or matches, accept whole-number interpretations that match the stated inequality.