LESSON MAKER PRO

Quantity Connections

Write equations that show how one quantity depends on another.

GRADE 6 · 6.AT.D.11.a

6.AT.D.11.a "Write an equation (one-step) to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable."

NAME _____ DATE _____

START WITH X

Let x stand for the quantity you know or choose first. Use one operation to write an equation for the quantity that depends on x.

WORKED EXAMPLE

Each comic book has 9 chapters. Let x be the number of comic books. Write an equation for the total number of chapters.

1. Each comic book adds 9 chapters to the total.
2. Multiply the number of comic books, x, by 9.

Answer: total chapters = 9x

PRACTICE 6 problems

1 Each sticker sheet has 5 stickers. Let x be the number of sheets. Write an equation for the total number of stickers.

ANSWER _____

2 A runner has 7 miles left to travel. Let x be the miles the runner travels next, where x is at most 7. Write an equation for the miles left.

ANSWER _____

3 Each full pack holds 12 markers. Let x be the total number of markers in full packs. Write an equation for the number of packs.

ANSWER _____

4 A game gives 6 stars for each level cleared. Let x be the number of levels cleared. Write an equation for the total stars earned.

ANSWER _____

5 Each ribbon piece is 3/4 foot long. Let x be the number of pieces. Write an equation for the total feet of ribbon used.

ANSWER _____

6 You have 4 extra lives in a game. Let x be the number of extra lives you collect. Write an equation for the number of extra lives you now have.

ANSWER _____

APPLY IT Show your work

1 A school esports club earns 15 points for every match it wins. Let x be the number of matches won. Write an equation for the points earned. How many points does the club earn for 4 wins?

WORK SPACE

ANSWER _____

2 A student has 48 beads to make identical bracelets. Each bracelet uses x beads. If all the beads are used, write an equation for the number of bracelets. How many bracelets can the student make if x = 6?

WORK SPACE

ANSWER _____

CHALLENGE One step up

Each music download costs 3/2 dollars. Let x be the dollars spent on downloads, with no money left over. A student writes number of downloads = (3/2)x. Write the correct equation and explain the mistake.

WORK SPACE AND ANSWER

ANSWER KEY

Quantity Connections

GRADE 6 · 6.AT.D.11.a

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Each sticker sheet has 5 stickers. Let x be the number of sheets. Write an equation for the total number of stickers.	**total stickers = 5x**
2	A runner has 7 miles left to travel. Let x be the miles the runner travels next, where x is at most 7. Write an equation for the miles left.	**miles left = 7 - x**
3	Each full pack holds 12 markers. Let x be the total number of markers in full packs. Write an equation for the number of packs.	**number of packs = x/12**
4	A game gives 6 stars for each level cleared. Let x be the number of levels cleared. Write an equation for the total stars earned.	**total stars = 6x**
5	Each ribbon piece is 3/4 foot long. Let x be the number of pieces. Write an equation for the total feet of ribbon used.	**feet of ribbon = (3/4)x**
6	You have 4 extra lives in a game. Let x be the number of extra lives you collect. Write an equation for the number of extra lives you now have.	**extra lives = 4 + x**

PART 2 · APPLY IT

1. **points earned = 15x; 60 points** Multiply the number of wins by 15. For 4 wins, 15 × 4 = 60.
2. **number of bracelets = 48/x; 8 bracelets** Divide the total beads by the beads per bracelet. When x = 6, 48/6 = 8.

CHALLENGE

number of downloads = x/(3/2), or (2/3)x. Divide the dollars spent by the cost per download; multiplying by the cost does not give the number of downloads.

Accept equivalent equations with a clearly named dependent quantity. In the challenge, accept either x/(3/2) or (2/3)x.