

Show It Clearly

Use tables and equations to communicate relationships.

GRADE 7 • TEKS 7.1.E

7.1.E "create and use representations to organize, record, and communicate mathematical ideas;"

NAME _____

DATE _____

PART 1: PRACTICE, THE BIG IDEA

A representation such as a table or equation helps you show a relationship clearly. In a proportional relationship, each output is found by multiplying the input by the same number. Use x for the input, label what each value means, and check that every table pair follows the rule.

WORKED EXAMPLE

An arcade gives 4 tickets for each token. Make a table for 1, 2, and 5 tokens. Then write an equation for the number of tickets.

1. Let x stand for the number of tokens.
2. Multiply each number of tokens by 4.
3. The table is: tokens 1, 2, 5; tickets 4, 8, 20.
4. Write the rule: tickets = $4x$.

**Answer: tokens: 1, 2, 5; tickets: 4, 8, 20;
tickets = $4x$**

PRACTICE 6 problems

- 1** Complete the table. Then write an equation.
Let x be the number of bracelets. Bracelets:
3 | 6 | 9 Beads: 21 | ____ | ____

ANSWER _____

- 2** The rule is total = $8x$. Complete the table. x :
7 | 10 | 12 Total: ____ | ____ | ____

ANSWER _____

- 3** Write an equation for the table. Let x be the number of hours. Hours: 6 | 8 | 10 Pages read: 54 | 72 | 90

ANSWER _____

- 4** The rule is total = $11x$. Make a table for x = 0, 3, and 6.

ANSWER _____

- 5** A trail mix recipe uses 14 raisins in each bag. Write an equation for the total number of raisins. Then find the total for 7 bags.

ANSWER _____

- 6** Which table matches the rule total = $12x$?
Write the letter. A. x : 3 | 7 | 9; total: 36 | 83 | 108 B. x : 6 | 8 | 10; total: 72 | 96 | 120 C. x : 7 | 9 | 12; total: 84 | 108 | 156

ANSWER _____

APPLY IT Show your work

- 1** Part 2: Apply. A concert club sells snack vouchers for \$7 each. Create a table for 3, 6, and 9 vouchers. Then write an equation for the total cost, using x for the number of vouchers.

WORK SPACE

ANSWER _____

- 2** A photo-printing booth charges a \$9 setup fee plus \$6 for each photo strip. Create a table for 0, 3, and 7 photo strips. Then write an equation for the total cost, using x for the number of photo strips.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

Part 3: Challenge. A school store sells custom stickers. The table shows the total cost. Stickers: 8 | 11 | 14
Cost: \$31 | \$40 | \$49 Write an equation for the total cost using x for the number of stickers. Explain how the table shows both the cost per sticker and the starting fee.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Complete the table. Then write an equation. Let x be the number of bracelets. Bracelets: 3 6 9 Beads: 21 ___ ___	Beads: 21 42 63; beads = $7x$
2	The rule is total = $8x$. Complete the table. x : 7 10 12 Total: ___ ___ ___	Total: 56 80 96
3	Write an equation for the table. Let x be the number of hours. Hours: 6 8 10 Pages read: 54 72 90	pages read = $9x$
4	The rule is total = $11x$. Make a table for $x = 0, 3$, and 6.	x: 0 3 6; total: 0 33 66
5	A trail mix recipe uses 14 raisins in each bag. Write an equation for the total number of raisins. Then find the total for 7 bags.	total raisins = $14x$; 98 raisins
6	Which table matches the rule total = $12x$? Write the letter. A. x : 3 7 9; total: 36 83 108 B. x : 6 8 10; total: 72 96 120 C. x : 7 9 12; total: 84 108 156	B

PART 2 • APPLY IT

- Vouchers: 3 | 6 | 9; cost: \$21 | \$42 | \$63; cost = $7x$** Multiply each number of vouchers by 7. The cost is proportional because each voucher has the same price.
- Photo strips: 0 | 3 | 7; cost: \$9 | \$27 | \$51; cost = $6x + 9$** Start with the \$9 setup fee, then add \$6 for each photo strip. The table values follow cost = $6x + 9$.

CHALLENGE

cost = $3x + 7$. The cost increases \$9 when the number of stickers increases by 3, so each sticker costs \$3. For 11 stickers, $3 \times 11 = 33$, and $\$40 - \$33 = \$7$, so the starting fee is \$7.

Accept equivalent equation forms, such as $7x = \text{cost}$, when x is clearly defined. Accept tables with the same correct input-output pairs in a different layout or order.