

Proportional Relationships in Tables

Always for proportions: $\frac{y}{x}$

Proportionality in Tables

A table shows a relationship is proportional if:

$\frac{y}{x}$ There is a unit rate consistent for the entire table
(always divide y by x)

(x) (y)

Days	0	1	2	3
Homework (in hours)	0	4	6	9

$\frac{4}{1} = 4$, $\frac{6}{2} = 3$, $\frac{9}{3} = 3$

Proportional? No

(x) (y)

Time (seconds)	Multiplication Facts
0	0
1	2
2	4
3	6

$\frac{2}{1} = 2$, $\frac{4}{2} = 2$, $\frac{6}{3} = 2$

Proportional? Yes

Is the Table Proportional?

The table below gives the price for different numbers of books. Do the numbers in the table represent a proportional relationship? Why or why not?

x	Books	2	4	7	9
y	Cost (dollars)	6	12	18	27

No $\frac{6}{2} = 3$, $\frac{12}{4} = 3$, $\frac{18}{7} \neq 3$, $\frac{27}{9} = 3$

Proportionality in Tables

x	y
Total number of stamps	Money spent on stamps (dollars)
2	0.88
5	2.20

Is the number of stamps proportional to money spent on stamps?

Yes

What is the unit rate?

$\frac{.44}{1 \text{ stamp}}$

$10 \times .44 = \$4.40$

$.44n = m$, $\frac{m}{.44} = n$

Write an equation to show the relationship between the money spent on stamps (m) and number of stamps (n).

Proportionality in Tables

$\frac{2 \text{ cakes}}{\frac{1}{2} \text{ stick}}$, $\frac{2 \cdot 2}{\frac{1}{2}} = 4$

x	Sticks of Butter	1/2	3
y	Number of Cakes	2	12

Is the number of cakes proportional to the sticks of butter?

Yes

What is the unit rate?

$\frac{4 \text{ cakes}}{1 \text{ stick}}$

Write an equation to show the relationship between number of cakes (c) and sticks of butter (b).

$4b = c$

Use Tables for Proportional Relationships

At Cocoa Bean Chocolate Factory, 2 pounds of their world-famous chocolate fudge sells for \$1.00. Complete the table to find the costs of different amounts of fudge.

$\frac{1.00}{2}$

x	Fudge (pounds)	1	2	3	4
y	Cost (dollars)	.50	1.00	1.50	2.00

Use Tables for Proportional Relationships

Use the table below to determine how much fudge we could buy with 5.00.

x	Fudge (pounds)	1	2	10
y	Cost (dollars)	.50	1.00	5.00

Use Tables for Proportional Relationships

If 1/2 gallon of paint covers 1/6 of a wall, then how much paint is needed for the entire wall? $\frac{1}{2} \cdot \frac{6}{1} = \frac{6}{2} = 3 \text{ gallons}$
 ~~1 wall~~

	x	y
Coverage (walls)	1/6	1/2
	1/3	1
	1	3

Unit Rate:

Equation:

Use Tables for Proportional Relationships

Jenna made lemonade for a fundraiser. For every 12 lemons, she used 4 cups of water. Fill in the missing values in the ratio table.

x	Water (cups)	4	24	8	10	1
y	Lemons	12	72	24	30	3

$\frac{12 \text{ lemons}}{4 \text{ cups}} = \frac{3 \text{ lemons}}{1 \text{ cup}}$

Unit Rate:
 $\frac{3 \text{ lemons}}{1 \text{ cup}}$
 Equation:
 $3w = l$
 $\frac{l}{3} = w$

Attachments

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