1.2 Proportional Tables

PRACTICE

Use the verbal statement to fill in the table. Find the constant of proportionality, *k*.

1. Teri pays 4 dollars for 2 gallons of milk.

$\frac{4 \text{ dollars}}{2 \text{ gallons}} = \frac{2}{1}$

Milk (*gallons*)	Cost (*dollars*)
0	0
1	2
2	4
3	6
4	8

$k =$ 2

2. Patrick eats 15 crabby patties every 3 hours.

$\frac{15 \text{ patties}}{3 \text{ hours}} = \frac{5}{1}$

Time (*hours*)	Patties (#)
0	0
1	5
2	10
3	15
4	20

$k =$ 5

In each table, determine if *y* is proportional to *x*. Explain why or why not.

3.

x	*y*
3	12
5	20
8	32
10	40

Proportional? (YES) or NO

Explanation: $k = 4$

$\frac{12}{3} = \frac{20}{5} = \frac{32}{8} = \frac{40}{4}$

4 4 4 4 ✓

4.

x	*y*
4	2
6	3
10	5

Proportional? (YES) or NO

Explanation: $k = 0.5$ or $\frac{1}{2}$

$\frac{2}{4} = \frac{3}{6} = \frac{5}{10}$

0.5 0.5 0.5 ✓

5.

x	*y*
1	4
4	8
6	24
9	18

Proportional? YES or (NO)

Explanation: not the same

$\frac{4}{1} = \frac{8}{4} = \frac{24}{6} = \frac{18}{9}$

4 2 4 2 X

6.

x	12	18	15	9
y	4	6	5	3

Proportional? (YES) or NO

Explanation: $k = \frac{1}{3}$ or $0.\overline{3}$

$\frac{4}{12} = \frac{6}{18} = \frac{5}{15} = \frac{3}{9}$

$\frac{1}{3}$ $\frac{1}{3}$ $\frac{1}{3}$ $\frac{1}{3}$ ✓

7.

x	0	2	4
y	0	5	10

good ↑

Proportional? (YES) or NO

Explanation: $k = 2.5$ or $\frac{5}{2}$

$\frac{5}{2} = \frac{10}{4}$

2.5 2.5 ✓

8.

x	0	1	2	3
y	3	5	7	9

NO! ↑

Proportional? YES or (NO)

Explanation: Not the same

$\frac{5}{1} = \frac{7}{2} = \frac{9}{3}$

5 3.5 3 X

Use the tables to answer the following.

9.

Candy (*pounds*)	Cost (*dollars*)
6	12
3	5
7	14
2	4

Is the cost proportional to the amount of candy?

NO!

Why or why not? Not the same

$\frac{12}{6} = \frac{5}{3} = \frac{14}{7} = \frac{4}{2}$

2 1.6 2 2 X

10.

Time (*hours*)	Snowfall (*inches*)
2	8
2.5	10
4	12
6	18

Is the snowfall proportional to the time?

NO! Not the same

Why or why not?

$\frac{8}{2} = \frac{10}{2.5} = \frac{12}{4} = \frac{18}{6}$

4 4 3 3 X

11.

Coffee (*ounces*)	6	8	14
Price (*dollars*)	2.10	2.80	4.90

Is the price proportional to the amount of coffee?

Yes! 0.35 dollars per pound

Why or why not?

$\frac{2.10}{6} = \frac{2.80}{8} = \frac{4.90}{14}$ ✓

0.35 0.35 0.35

In the following tables *y* is proportional to *x*. Fill in the table and state the constant of proportionality.

12.

x	*y*
2	8
5	20
10	40
12	48

$k =$ 4

$\frac{8}{2} = \frac{20}{5}$

4 4

13.

x	*y*
8	4
6	3
10	5
14	7

$k =$ $\frac{1}{2}$ or 0.5

$\frac{4}{8} = \frac{3}{6}$

½ ½

14.

x	20	4	8	12
y	15	3	6	9

$k =$ 0.75 or $\frac{3}{4}$

$\frac{15}{20} = \frac{6}{8}$

0.75 0.75

Fill in the table and answer the questions.

15. The number of teachers at Generic Middle School is proportional to the number of students.

Teachers	Students
2	28
5	80
4	64
9	108
14	224

a. How many students are there for one teacher?

$\frac{64 \text{ students}}{4 \text{ teachers}} = \frac{16}{1}$

16 students per teacher

b. If there are 14 teachers at Generic Middle School, how many students are there?

14 (16) = 224 students