

Name: Key

Review Part 1 Chapter 2

- Calculate the unit price for each yogurt listed in the table of values. Which is the better buy?
- What is the unit price of the 32-ounce yogurt? = $\$0.15 / 32 \text{ oz}$

cheapest
unit
rate
for each

Yogurt Prices	
Size (oz)	Cost (\$)
6	0.89
8	1.04
10	1.69
32	4.79

$\frac{\$}{\text{oz}}$

$$\frac{0.89}{6} = \frac{x}{1}$$

$$\frac{6x}{6} = \frac{0.89}{6}$$

$$x = 0.15$$

Best Buy

$$\frac{1.04}{8} = \frac{x}{1}$$

$$\frac{8x}{8} = \frac{1.04}{8}$$

$$x = 0.13$$

$\$0.13 / \text{oz}$

$$\frac{1.69}{10} = \frac{x}{1}$$

$$\frac{10x}{10} = \frac{1.69}{10}$$

$$x = 0.17$$

$$\frac{4.79}{32} = \frac{x}{1}$$

$$\frac{32x}{32} = \frac{4.79}{32}$$

$$x = 0.15$$

- The table shows the costs for ordering different numbers of pizzas. What is the value of x if the cost is proportional to the number of pizzas ordered?

Pizzas Ordered	x	2	3	4	5
Cost (\$)	y	19.98	29.97	39.96	$y = 49.95$

$y = 49.95$
 $\$9.99 = y$

$y = 9.99x$

we
 $y = 9.99x$
 $\frac{y}{x} = k$

$\frac{19.98}{2} = 9.99$

$\frac{29.97}{3} = 9.99$

$\frac{39.96}{4} = 9.99$

not proportional

$y = 9.99x$

cost(y) = $\$49.95$ for 5 pizza

- Determine whether the relationship shown in the table below is a **direct variation (proportional)**. If so, state the constant of proportionality.

Time, (h), x	1	2	3	4
Cost (\$), y	25	50	75	100

$k = 25$
 $y = 25x$

$\frac{y}{x} = \frac{25}{1} = 25$ $\frac{50}{2} = 25$ $\frac{75}{3} = 25$ $\frac{100}{4} = 25$

Solve each proportion.

5. $\frac{5}{p} = \frac{20}{16}$

$\frac{20p}{20} = \frac{80}{20}$

$p = 4$

check

$\frac{5}{4} = \frac{20}{16}$

$80 = 80 \checkmark$

6. $\frac{118}{13} = \frac{59}{z}$

$118z = 59(13)$

$\frac{118z}{118} = \frac{767}{118}$

$z = 6.5$

check

$\frac{118}{13} = \frac{59}{6.5}$

$59(13) = 118(6.5)$

$767 = 767 \checkmark$

Key

Review Part 2: Chapter 2 Lessons 1- 5

Dimensional Analysis or Unit Conversion

Convert each rate (Dimensional Analysis). Round to the nearest tenth.

1. $\frac{42 \text{ mi}}{\text{hr}} \rightarrow \frac{\text{ft}}{\text{s}}$ ✓
 1 mile = 5280 ft
 1 min = 60 sec
 1 hr = 60 min

Know

Want

$$\frac{42 \text{ mi}}{1 \text{ hr}} \cdot \frac{5280 \text{ ft}}{1 \text{ mi}} \cdot \frac{1 \text{ hr}}{60 \text{ min}} \cdot \frac{1 \text{ min}}{60 \text{ sec}} = \frac{42(5280)}{60(60)} = \frac{221760}{3600}$$

$$\boxed{61.6 \text{ ft/s}}$$

2. $\frac{75 \text{ g}}{\text{cm}} \rightarrow \frac{\text{kg}}{\text{m}}$ ✓
 100 cm = 1 m
 1 kg = 1000 g

Know

Want

$$\frac{75 \text{ g}}{1 \text{ cm}} \cdot \frac{100 \text{ cm}}{1 \text{ m}} \cdot \frac{1 \text{ kg}}{1000 \text{ g}} = \frac{75(100)}{1000} = \frac{7500}{1000} = \boxed{7.5 \text{ kg/m}}$$

Complex Fractions and Unit Rates

3. Claire is making a dress for the prom. She bought $4\frac{1}{2}$ yards of fabric. Her total cost was \$14.50. What was the cost per yard of fabric?

$$\frac{\$}{\text{yd}} = \frac{14.50}{4\frac{1}{2}} = \frac{x}{1}$$

$$4\frac{1}{2} \cdot x = 14.50$$

flip and multiply

$$x = \frac{14.50}{1} \cdot \frac{2}{9}$$

$$x = \frac{29}{9}$$

$$\boxed{x = \$3.22/\text{yd}}$$

4. Mr. Johnson drove from Port Neches to Houston, a 95-mile trip. The trip took $1\frac{1}{2}$ hours.

What was her average speed in miles per hour?

$$\frac{\text{mi}}{\text{hr}} = \frac{95}{1\frac{1}{2}} = \frac{x}{1}$$

$$\frac{3}{2}x = 95$$

$$x = \frac{95}{1} \cdot \frac{2}{3} = \frac{190}{3}$$

$$\boxed{x = 63.\bar{3} \text{ mph}}$$

8. Mia saves about 14 points per game. If she continues this path, how many points will she save in 4 games?

$\frac{\text{points}}{\text{games}} = \frac{14}{1} = \frac{x}{4}$
 $x = 14(4)$
 $x = 56 \text{ pts in 4 games}$

9. Is the table proportional or nonproportional?

number of cases they order	number of rolls of paper towels
1	12
3	36
5	60
10	120

$\frac{y}{x} = k$

$12/1 = 12$

$36/3 = 12$

$60/5 = 12$

$120/10 = 12$

Proportional

Explain: The table is proportional because $\frac{y}{x}$ ratio is the same.

10. Is the table proportional or nonproportional?

shape	perimeter
1	4
2	6
3	8
4	12
5	16

$\frac{y}{x}$

$\frac{4}{1} = 4$

$\frac{6}{2} = 3$

$\frac{8}{3}$

$\frac{12}{4}$

$\frac{16}{5}$

makes the table non proportional

Explain:

The unit rate is not the same

$(\frac{y}{x} \text{ ratio})$