

7-1 Notes

Int 1

Intro. to Rates and Unit Rates

Unit 7

What is a rate? A ratio (fraction) that compares 2 #'s with "PER" different units.

What is a unit rate? When a rate is SIMPLIFIED so the DENOMINATOR is 1 unit.

(Just Do TOP ÷ by Bottom)

Some common rates and unit rates include:

\*ROUND to Hundredths\*

Rate	Unit Rate	Abbreviation	Name
I drove 876 miles in 13 hours.	$\frac{67.38 \text{ mi}}{1 \text{ hour}}$	mph or mi/hr <i>67 mph 67 mi/hr</i>	Average speed
I drove 297 miles on 27 gallons of gas.	$\frac{11 \text{ miles}}{1 \text{ gal.}}$	mpg or mi/gal <i>11 mpg 11 mi/gal</i>	Gas mileage
I paid \$11.60 for 4 pounds of candy.	$\frac{\$2.90}{1 \text{ lbs.}}$	dollars/pound	unit price

We can use these abbreviations But! we can't make up our own...

$$\frac{876 \text{ miles}}{13 \text{ hours}}$$

$$\frac{297 \text{ miles}}{27 \text{ gal.}}$$

$$\frac{\$11.60}{4 \text{ lbs.}}$$

1. I went on a road trip! I traveled 1180 miles in 16 hours. How fast did I drive?

$$\div \left( \frac{1180 \text{ miles}}{16 \text{ hrs.}} = \frac{73.75 \text{ mi}^{\text{top}}}{1 \text{ hr}^{\text{bottom}}} = \underline{73.75 \text{ mph}} \right)$$

2. I filled up my car with gas a couple of days ago. My receipt shows that I paid \$20.03 for 11.583 gallons. How much did I pay per gallon?

Pump#: 8  
11.583G @                       
BL R/Self \$ 20.03  
Total \$ 20.03

$$\frac{\$20.03}{11.583 \text{ gal}} = \frac{\$1.73}{1 \text{ gal}} \leftarrow \text{rounded!}$$

I paid \$1.73 per gallon.

3. We want to find the best price. ☺

Use the table to decide what peanut butter costs the least per ounce.

Peanut Butter Sales	
Brand	Sale Price
Skippy	12 ounces for \$2.19
JIF	18 ounces for \$2.79
Planters	28 ounces for \$4.69
Bee's	40 ounces for \$6.60

**# ALWAYS GOES ON TOP!!!!**

\*round to hundredths

$$\frac{\$2.19}{12 \text{ oz.}} = \frac{\$0.18}{1 \text{ oz.}}$$

$$\frac{\$2.79}{18 \text{ oz.}} = \frac{\$0.16}{1 \text{ oz.}}$$

$$\frac{\$4.69}{28 \text{ oz.}} = \frac{\$0.17}{1 \text{ oz.}}$$

$$\frac{\$6.60}{40 \text{ oz.}} = \frac{\$0.17}{1 \text{ oz.}}$$

cheapest per oz.

So, it's the BEST DEAL.

4. After 3.5 hours, Pasha had traveled 217 miles. If she travels at a constant speed, how far will she have traveled after 9 hours?

mi/hr  
↑  
TOP!

$$\div \frac{217 \text{ miles}}{3.5 \text{ hours}}$$

UNIT RATE!

$$= \frac{62 \text{ miles}}{1 \text{ hour}}$$

$$\begin{array}{r} \xrightarrow{\cdot 9} \\ = \\ \xrightarrow{\cdot 9} \end{array}$$

$$\frac{558 \text{ miles}}{9 \text{ hours}}$$

she will go 558 miles in 9 hours.

5. My roommate has a Chihuahua, she bought a 20 pound bag of dog food for \$23.44. How much would it cost if she bought a 35 pound bag of dog food?

\$ on top!!!

$$\div \frac{\$23.44}{20 \text{ lbs.}}$$

unit rate

$$= \frac{\$1.17}{1 \text{ lbs.}}$$

$$\begin{array}{r} \xrightarrow{\cdot 35} \\ = \\ \xrightarrow{\cdot 35} \end{array}$$

$$\frac{\$40.95}{35 \text{ lbs}}$$

or \$41.02  
if you keep  
\$1.172