

Day 2: Unit Rates

Key

Determine the unit rate for each problem:

a. 192 students in 4 buses: $\frac{192 \text{ students}}{4 \text{ buses}} = 48 \text{ students per bus}$

b. 3 pizzas for \$19.99: $\frac{\$19.99}{3 \text{ pizzas}} = \6.66 per pizza

c. 357 miles in 5 hours: $\frac{357 \text{ mi}}{5 \text{ hours}} = 71.4 \text{ miles per hour}$

2. Use the unit rate to find the total:

a. Ayanna buy 5 hats at \$9.99 each. How much does she spend? $\$49.95$
 $\$9.99 \times 5 \text{ hats}$

b. Jade writes an 8 page paper with 250 words per page. How many words are in the report? 2000 word
 $8 \text{ pages} \times 250 \text{ words}$

c. Yolanda works for 7 hours at \$10.25 per hour. How much does she earn? $\$71.75$
 $\$10.25 \times 7$

3. Jacqueline drives 825 miles to California. The trip takes her 17 hours. She uses 38 gallons of gas on the trip, which cost her \$125.

a. Find her speed: $48.5 \text{ miles per hour}$ $\frac{825 \text{ miles}}{17 \text{ hours}}$

b. Find her gas mileage: $21.7 \text{ miles per gallon}$ $\frac{825 \text{ miles}}{38 \text{ gallons}}$

c. Find the unit price for gas: $\$3.29 \text{ per gallon}$ $\frac{\$125}{38 \text{ gallons}}$

4. Which size Gatorade is the better deal?

Gatorade	
Size (oz)	Price (\$)
16	\$1.39
24	\$1.89
32	\$2.69
64	\$5.19

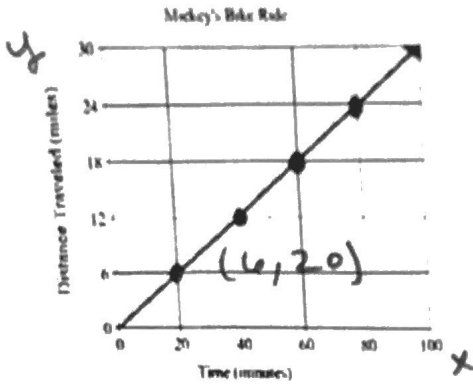
$\frac{\$1.39}{16 \text{ oz}} = \0.087 per oz $\frac{\$2.69}{32 \text{ oz}} = \0.084 per oz

$\frac{\$1.89}{24} = \0.079 per oz $\frac{\$5.19}{64 \text{ oz}} = \0.081

The 24 oz Gatorade is the better deal.

Find the unit rate for each graph. Express your unit rate in real world terms.

$$\frac{y}{x}$$

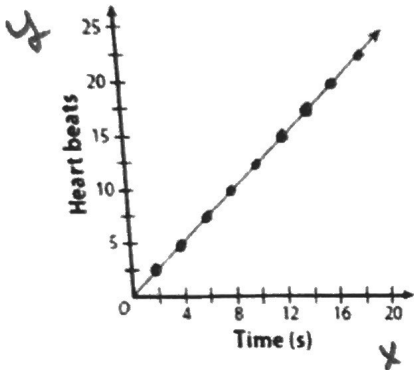


$$\frac{6 \text{ miles}}{20 \text{ minutes}} \text{ or } \frac{18 \text{ miles}}{60 \text{ minutes}}$$

0.3 miles per minute

I can use any ordered pair

6. The equation $1.2x$ represents the rate, in beats per second that Chase's heart beats. The graph represents Nancy's heart beats. Determine whose heart is beating at a faster rate.



Chase: 1.2 beats per minute.

$$\text{Nancy: } \frac{5 \text{ beats}}{4 \text{ minutes}} = 1.25 \text{ beats per minute}$$

Nancy's heart beats faster than Chase's.

7. Under Plan A, a 2 minute call costs \$0.54 and a 4 minute phone call costs \$1.08. Under Plan B, the cost for x minutes is given by $0.289x$. Which plan is cheaper? Why?

$$\text{Plan A: } \frac{\$0.54}{2 \text{ min}} = \$0.27 \text{ per minute}$$

$$\text{Plan B: } 0.289x \rightarrow \text{about } \$0.29 \text{ per minute}$$

Plan A is about \$0.02 cheaper per minute than Plan B.

8. The equation $y = 13x$ represents the rate, in gallons per minute that Tank A at an aquarium fills with water. The table represents the rate that Tank B fills with water. Determine which tank fills faster.

Time (min)	4	12	15	20
Amount (gal)	44	132	165	220

Tank A: 13 gallons per minute

$$\text{Tank B: } \frac{44 \text{ gallons}}{4 \text{ minutes}} = 11 \text{ gallons per minute}$$

Tank A fill faster by 2 gallons a minute.