

C: Rates

- compares two quantities with different units.

- e.g. \$5.00 per 100 kg.

- per means divide

\$5.00 per 100 kg.

$$\frac{\$5.00}{100 \text{ kg}}$$

Examples:

1. Determine the unit rate. Round to the nearest hundredth where necessary.

a) A car drives 400 km in 3h.

$$= \frac{400 \text{ km}}{3 \text{ h}} \leftarrow \text{divide}$$

$$= 133.3333\dots \text{ km/h} \leftarrow \text{round to the hundredth (two decimal places)}$$

$$= 133.33 \text{ km/h}$$

b) A horn honks 12 times in 6 min.

$$= \frac{12 \text{ honks}}{6 \text{ min}} \leftarrow \text{divide}$$

$$= 2 \text{ honks/min}$$

2. Sam earns \$156.00 for working 3h. Emma makes \$385.00 for working 7h.

a) What is each person's rate of pay?

Sam

$$\frac{\$156.00}{3h}$$

$$= \$52.00/h$$

↑ per

Emma

$$\frac{\$385.00}{7h}$$

$$= \$55.00/h$$

↑ per

b) Who has the greater hourly rate?

Emma has the greater hourly rate.

3. Use the following table to answer "a" and "b"?

Candy Package	Mass	Price
A	600g	\$3.50
B	1000g	\$4.75
C	1400g	\$5.90

a) What is the unit price per 100g for each Package?

A

$$\frac{\$3.50}{x} = \frac{600g}{100}$$

cross multiply

$$\frac{\$3.50}{x} \times \frac{600}{100}$$

$$\frac{600/x = 350}{600} \times \frac{600}{600}$$

Round to dollar format

$$x = \$0.58$$

B

$$\frac{\$4.75}{x} \times \frac{1000g}{100g}$$

cross multiply.

$$\frac{1000/x = 475}{1000}$$

$$x = \$0.48$$

Round to dollar format.

C

$$\frac{\$5.90}{x} \times \frac{1400\text{g}}{100\text{g}} \quad \text{cross multiply}$$

$$\frac{-1400x = 590}{1400} \quad \frac{590}{1400}$$

$x = \$0.42$ Round to dollar format.

b) Which package is the best buy?

Package C is the best buy because its price per 100g is the lowest.

Assignment Page 60 # 4-9.

