



Warm Up Grade 8

April 4, 2016



$$\begin{array}{l}
 \text{1 km} = 1000 \text{ m} \\
 \text{1 hr} = 60 \text{ min} = 3600 \text{ s} \\
 \text{X 3600}
 \end{array}$$

Handwritten conversion factors with arrows indicating multiplication: $1 \text{ km} = 1000 \text{ m}$ (red arrow, $\times 1000$), $1 \text{ hr} = 60 \text{ min} = 3600 \text{ s}$ (green arrow, $\times 60$), and a large black arrow from 1 hr to 3600 s labeled $\times 3600$.

1. A human walks at an average speed of 5 km/h.
What is this speed in meters per second?

$$\begin{array}{l}
 \frac{5 \text{ km}}{1 \text{ hr}} = \frac{5000 \text{ m}}{3600 \text{ s}} \\
 \text{top} \div \text{bottom} \\
 = 1.3\bar{8} \text{ m/s}
 \end{array}$$



Warm Up Grade 8

April 4, 2016

April 6 TEST



1. A human walks at an average speed of 5 km/h.
What is this speed in meters per second?

$$5 \text{ km} / \text{hr}$$

$$5000 \text{ m} / \text{hr}$$

$$5000 \text{ m} / 3600 \text{ s}$$

$$1 \text{ km} = 1000 \text{ m}$$

$$1 \text{ hr} = 60 \text{ min} \\ = 3600 \text{ s}$$

$$\frac{5000 \text{ m}}{3600 \text{ s}} \div 3600$$

$$\frac{1.3\bar{8} \text{ m}}{1 \text{ s}}$$

$$1.3\bar{8} \text{ m/s}$$

#5 $\$399 / 3 \text{ week}$
 $\div 3 \quad \div 3$
 ☆ $\$133 / 1 \text{ week}$

b) $680 \text{ km} / 8 \text{ h}$
 $\div 8 \quad \div 8$
 $85 \text{ km} / \text{hr}$

c) $\$3.49 / 12 \text{ bottles}$
 $\div 12 \quad \div 12$
 $\$0.29 / \text{bottle}$

d) $\$0.99 / 3 \text{ cans}$
 $\div 3 \quad \div 3$
 $\$0.33 / 1 \text{ can}$

☆ a) $\$24 / 3 \text{ hr}$
 $\div 3 \quad \div 3$
 $\$8 / \text{hr}$

or $\$36 / 4 \text{ h}$
 $\div 4 \quad \div 4$

$\$9 / \text{h}$

greater

b) $\$4.50 / 6 \text{ muff}$
 $\times 2 \quad \times 2$
 $\$9. / 12 \text{ muff}$
 greater Rate

or

$\$6 \text{ for } / \text{ doz}$

$\$6 \text{ for } 12 \text{ muff}$

Better deal

c) $0.99 / 250 \text{ mL}$
 $\times 4$
 $\$3.96 / 1000 \text{ mL}$
 $3.96 / 1 \text{ L}$
 greater

$3.49 / 1 \text{ L}$

Better deal

☆ 7) a) A $1.49 / 110 \text{ mL}$
 $\div 110 \quad \div 110$
 $\$0.0135 / \text{mL}$

B $\$4.29 / 500 \text{ mL}$
 $\div 500 \quad \div 500$

$0.00858 / \text{mL}$

d) cheaper \uparrow better deal

b) Might only need a small quantity

★ 8) \$ 1.99 / 5 gf or 2.99 / 8 gf
Estim Estim
\$ 16 / 40 \$ 15 / 40
Better deal

★ 11a) Petra \$ 370 for 40h
÷40 ÷40
\$9.25 / hour

11a) Giorgos \$ 315 for 35h
÷35 ÷35
\$9.00 / hour

Petra gets paid more

point / game
114 / 9 game
÷9 ÷9
≈ 12.7 points / game

Comparing Rates

You can compare rates the same way that you compare ratios;

- Find the unit rate
- or find equivalent rates which have 1 of the terms the same.

Example:

Which is a better deal?

A - 2 apples for \$0.68

or B- 8 apples for \$2.60

METHOD 1

- find the unit rate (Put \$ first)

A $\$0.68 / 2 \text{ apples}$
 $\div 2 \quad \div 2$
 $\$0.34 / \text{apple}$

B) $\$2.60 / 8 \text{ apples}$
 $\div 8 \quad \div 8$

$\$0.325 / \text{apple}$
 $\approx \$0.33 / \text{apple}$ Cheaper

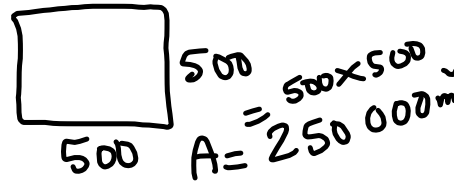
Or METHOD 2

- change both to the cost for 8 apples

$\$0.68 / 2 \text{ apples}$
 $\times 4 \quad \times 4$
 $\$2.72 / 8 \text{ apples}$

B) $2.60 / 8 \text{ apple}$
 Cheaper

Class/Homework



Page 305

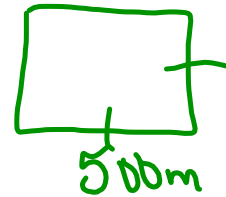
#14, #16 (need to find area of the square park first)
 $2.5 \text{ kg} / 1200 \text{ m}^2 = X \cdot 250\,000 \text{ m}^2$

Page 308

#1, #2, #3, #4, #5a, #7, #11, #12, #20 (bc)

April 6
 Test
 Wednesday

16) $2.5 \text{ kg} / 1200 \text{ m}^2$
 $X / 250\,000 \text{ m}^2$
 520.83 kg



$A = L \times W$
 $= 500 \times 500$
 $= 250\,000 \text{ m}^2$

$2.5 \text{ kg} / 1200 \text{ m}^2$
 $\div 120$

$0.00208\bar{3} / 1 \text{ m}^2$
 $\times 250\,000$
 $520.83 \text{ kg} / 250\,000 \text{ m}^2$

pg 297

1. A rate is the comparison of 2 units of measurement.

A unit rate has a second term of 1.

2. A ratio and a rate are similar since they both compare 2 things.

3. a) Yes, in Ex 3 $\frac{5000\text{km}}{60\text{sec}}$

b) No it can not be written as a percent because it is comparing 2 different things

c) Yes, in ex 3, it $83.\bar{3}\text{ m/min}$
or 1.4 m/sec

4. a) 60 words /min

b) 25 m /min

c) 20 pages /hr

5. a) 30 km in 2hr

15 km /hr

b) 12 km in 30min

24 km /hr

c) 150 km in 15min

10 km /min

600 km /hr

b) 220 flyers in 4 hours

$\div 4$

$\div 4$

55 flyers / hour

b) 90 cupcakes in 1.5h

$\div 1.5$

$\div 1.5$

60 cupcakes /hr

c) 18°C in 4 hr

$\div 4$

$\div 4$

4.5°C /hr

7. a) 60 km / hr - rate
 b) \$8 / hr - rate
 c) 3 cups cranberry
 4 cups gingerale - ratio
 d) 25 games won
 15 games lost - ratio

8. a) \$4.50 for 4L
 $\div 4$ $\div 4$
 \$1.125 / L or \$1.13 / L

b) \$3.00 for 12 cobs
 $\div 12$ $\div 12$
 \$0.25 / cob

c) 24 cans for \$9.99
 $\div 24$ $\div 24$
 \$0.42 / can

a. 15 goals in 10 games
 1.5 goals / game

b) In 35 games
 1.5×35
 52.5 goals
 or 52 goals in 35 games

10. After the race, you would expect her heart rate to increase, so it would be 120 beats/min

11. \$1.44 for 3m
 $\div 3$ $\div 3$
 \$0.48/m

b) \$2.40 for 5m

c) 4.80 for 10m

9.60 for 20m
 2.40 for 5m

 12 for 25m

★2)

a)

point / games

$$\frac{114 \text{ point}}{9 \text{ games}}$$

$\div 9 \quad \div 9$

12.6 points / game

$$\times 24 \quad \times 24$$

b)

$$304 \text{ points} / 24 \text{ game}$$

★13)

118.1 cm / 1 day

$$\frac{118.1 \text{ cm}}{24 \text{ hr}}$$

$\div 24 \quad \div 24$

4.92 cm / 1 h