



Warm Up Grade 8

Lesson 4

E-Learning



1) In the NHL, the ratio of shots taken to the goals scored by an all-star player is 9:2. The player has a 50-goal season. How many shots did he take?

2) The scale on a map of Manitoba is 1 : 5 000 000. This means 1 cm on the map represents 5 000 000 cm actual distance. The map distance between two towns is 3.4 cm. What is the actual distance between the two towns?

The actual distance between the two towns is



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1. student's preference

Solutions to Page
283-284 #4, 5, 6, 7, 10,
123. $\frac{7}{11}$ change to a decimal0.6363, then write
the equivalent percent

4. a) $3:12$
 $1:4$

b) $5:40$
 $1:8$

c) $8:56$
 $1:7$

d) $9:81$
 $1:9$

e) $33:99$
 $1:3$

f) $22:132$
 $1:6$

5. a) $16:4$
 $4:1$

b) $55:11$
 $5:1$

c) $144:12$
 $12:1$

d) $120:24$
 $5:1$

e) $91:13$
 $7:1$

f) $96:8$
 $12:1$

Solutions to Page
283-284 #4, 5, 6, 7, 10,
12

6. A.

blue: white

$$\begin{array}{l} 4 : 3 \\ 28 : 21 \end{array}$$

more white so lighter

B
blue: white

$$\begin{array}{l} 7 : 5 \\ 28 : 20 \end{array}$$

Shade B is darker.

b) A has more white compared to the blue.

7. Olga scored 3 of 5
21 of 35

Tara 5 of 7
25 of 35

Tara's performance was better

a) Olga

$$\frac{3}{5} = \frac{21}{35}$$

Tara

$$\frac{5}{7} = \frac{25}{35}$$

8. Henhouse A
brown: white
6 : 10

60% brown eggs

so Henhouse B produces more white eggs.

Henhouse B
brown: white
3 : 9

$\frac{1}{3}$ or 33% brown eggs

6:18

9. A → 3 cans concentrate, 1 can water
 B 1 can concentrate, 3 cans water
 A is stronger

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10. Alison
 * 6 of 13 shots
 $\times 9$ $\times 9$
 54 of 117

$$\frac{6}{13} = 0.46$$

or
 46% of
 shots

Nadhu
 5 of 9 shots
 $\times 13$ $\times 13$
 65 of 117

$$\frac{5}{9} = 0.555 \dots$$

or 56% of
 shots

Nadhu played better.

11. Calgary
 2 pizza for 3 people
 $\div 3$ $\div 3$
 $\frac{2}{3}$ pizza / person

$$0.666 \dots$$

Alber ta
 3 pizzas for 5 people
 $\div 5$ $\div 5$
 $\frac{3}{5}$ / person

$$\frac{6}{10} \text{ or } 0.6$$

The Calgary team
 received more pizza per person

(b) Yes, you could find what
 percent of a pizza each person
 received.

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<p>Recipe A vinegar : oil 150 : 250 450 : 750</p>	<p>OR</p> <table border="0"> <tr> <td style="text-align: center;">A</td> <td style="text-align: center;">B</td> </tr> <tr> <td style="text-align: center;">v:o</td> <td style="text-align: center;">v:o</td> </tr> <tr> <td style="text-align: center;">3:5</td> <td style="text-align: center;">9:16</td> </tr> <tr> <td style="text-align: center;">41:80</td> <td style="text-align: center;">45:60</td> </tr> </table>	A	B	v:o	v:o	3:5	9:16	41:80	45:60	<p>Recipe B vinegar : oil 225 : 400 450 : 800</p>
A	B									
v:o	v:o									
3:5	9:16									
41:80	45:60									

less oil than B
so stronger
vinegar

Recipe A has a stronger vinegar taste, they both have 450ml of vinegar, but A has less oil.

13. Ms Arbuckle
Fiction : Non Fiction
7 : 5
42 : 30
Fiction

Mr. Albright
Fiction | Non Fict
4 : 3
40 : 30
Fiction

b) Ms Arbuckle

$$\frac{30}{72} = 0.42 \text{ or } 42\%$$

Mr. Albright

$$\frac{30}{70} = 0.43 \text{ or } 43\%$$

14. A conc : water
2 : 1

B conc : water
3 : 2

b) A 6 : 3

6 : 4

then add one can of water to A to make the conc : water the same.

Rates and Ratios



A ratio is a comparison between two things.

Rate is the relationship between two different units of measurement, such as meters and seconds, or dollars and hours.

A unit rate is when the second term in the ratio is always 1.

Rates are often written using a slash / which means per.

Ex: km/hr means kilometers per hour
beats/min means heartbeats per minute
\$/hr mean the amount of money per hour

The slash (/) or term per means for every one.

When we compare two things with different units, we have **rate**.

Here are some rates:

- We need 5 sandwiches for every 2 people.
- Oranges are on sale for \$1.49 for 12.
- Gina earns \$4.75 per hour for baby-sitting.
- There are 500 sheets on one roll of paper towels.

The last two rates are **unit rates**.

Unit Rate compares a quantity to 1 unit.

*Rates cannot be expressed as percents since they compare two different quantities.

Part a) Express each unit rate using symbols.

1. Serena walks 4 km in 1 hr.
2. Sanjit reads 3 books in 1 week.
3. The tap drips 25 drops in 1 min.

Part b) Express as a unit rate.

1. Betty drives her car 150 km in 2 h.
2. The helicopter travels 180 km in 3 h.

Which sentences are ratios? Which sentences are rates?
How do you know?

1. The cost of pecans is \$10.89 for each kilogram.
2. Three out of every seven people are wearing glasses.
3. Mr. Thompson travelled 620 km in 6 h.
4. Each block of a quilt has 5 red patches, 4 yellow patches, and 6 blue patches.

Maria charged \$15 for 3 h of babysitting.

- a) What is Maria's rate per hour? Show work
- b) How much does Maria charge for 5 h of babysitting? Show work
- c) How many hours does Maria have to babysit to earn \$50? Show work

Canadian speed skater Jeremy Wotherspoon, of Red Deer, Alberta, set the world record for the 500 m at the 2004 World Cup in Italy. He skated at an average speed of 14.44 m/s. The white-tailed deer can run at speeds of up to 30 km/h.

Who is faster? How can you find out?

watch units
what is this in m/s?

Remember 1 km = 1000 m
1 hr = 60 min
1 min = 60 sec



Speed skater
14.4 m
s

Deer
30 km
hour

recall 1 hr = 60 min
x 60 sec
1 hr = 3600 s

= 30 000 m
3600 s

= 8.33 $\frac{m}{s}$

The speed skater is faster.

30 km = 30000 m
x 1000

OR

14.44 m in 1 second

so how many meters can he skate in 1 minute?



● which is 60 seconds

14.44 m in 1 second

x 60 x 60

866.4 m in 60 seconds



866.4 m in 1 min

x 60 x 60

51984 m in 60 min



51.984 km in 1 hour

Class/Homework

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#5ab, #6, #7, #8, #11a,

Check

5. Write a unit rate for each statement.

- a) \$399 earned in 3 weeks
- b) 680 km travelled in 8 h
- c) 12 bottles of juice for \$3.49
- d) 3 cans of soup for \$0.99

6. Which is the greater rate?

How do you know?

- a) \$24.00 in 3 h or \$36.00 in 4 h
- b) \$4.50 for 6 muffins or
\$6.00 for 1 dozen muffins
- c) \$0.99 for 250 mL or \$3.59 for 1 L

- 7.** Delaney goes to the store to buy some mushroom soup. She finds that a 110-mL can costs \$1.49. A 500-mL can of the same brand costs \$4.29.
- a) Which is the better buy?
 - b) Delaney buys the 110-mL can. Why might she have done this?
 - c) Another customer bought a 500-mL can. How might you explain this?

Apply

- 8.** Which is the better buy?
- a) 5 grapefruit for \$1.99 or 8 grapefruit for \$2.99
 - b) 2 L of juice for \$4.49 or 1 L of juice for \$2.89
 - c) 100 mL of toothpaste for \$1.79 or 150 mL of toothpaste for \$2.19
 - d) 500 g of yogurt for \$3.49 or 125 g of yogurt for \$0.79

- 11.** Each week, Petra earns \$370 for 40 h of work as a lifeguard. Giorgos earns \$315 for 35 h of work as a starter at the golf course.
- a) Which job pays more?
 - b) Would you take the job in part a instead of the other job? Justify your answer.

