



Warm Up Grade 8

April 5, 2016



TEST tomorrow

Very similar to test questions

a) a price tag on a shirt says \$15, what is the cost including tax?

$$\begin{aligned} \text{Tax} &= 13\% \text{ of Price} \\ &= 0.13 \times 15 \\ &= \$1.95 \end{aligned}$$

$$\begin{aligned} \text{Cost w tax} &= 15 + 1.95 \\ &= 16.95 \end{aligned}$$

Cost with tax is \$16.95

b) Jill's salary increased from \$7 to \$11.25 calculate the percent increase.

$$\begin{aligned} \text{Diff} &= \text{Big} - \text{Small} \\ &= 11.25 - 7.00 \\ &= 4.25 \end{aligned}$$

$$\begin{aligned} \% \text{ Increase} &= \frac{\text{Diff}}{\text{orig}} \times 100\% \\ &= \frac{4.25}{7.00} \times 100\% \\ &= 0.607 \times 100 \\ &\approx 60.7\% \text{ or } 61\% \end{aligned}$$

c) Ivan has completed 30% of his walk.

He has already walked 6 km. How much farther does he have left to walk?

30% of walk is 6 km

2 part question

$$30\% \times W = 6$$

$$\frac{0.30 W}{0.30} = \frac{6}{0.30}$$

$$W = 20$$

The total walk is 20 km
He walked 6 km

How much further $20 - 6 = 14$ km

70% left to walk

30% is 6

10% is 2
x7 x7

70% is 14 km

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14 b)

A

$$12.99 / 3.6 \text{ kg}$$

$$\div 3.6 \quad \div 3.6$$

$$\$3.61 / \text{kg}$$

B

$$\$ 39.99 / 18.1 \text{ kg}$$

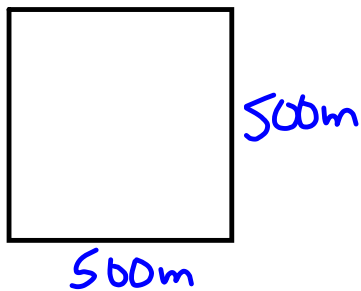
$$\div 18.1 \quad \div 18.1$$

$$\$ 2.21 / \text{kg}$$

Better deal money-wise

d) Might want more dog food

16.



$$A = L \times W$$

$$= 500 \times 500$$

$$= 250\,000 \text{ m}^2$$

$$2.5 \text{ kg} / 1200 \text{ m}^2 = \underline{\quad} \text{ kg} / 250\,000 \text{ m}^2$$

can take to a unit rate

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

divide by 1200 divide by 1200

$$= 0.002803 \text{ kg} / \text{m}^2$$

$$= 0.002803 \text{ kg} / \text{m}^2$$

x by 250 000 x by 250 000

$$= 520.803 \text{ kg} / 250\,000 \text{ m}^2$$

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12. a) \$8.4 for 8 hour

 $\frac{8.4}{8} = \$10.50/\text{hr}$

b) for 35h

 $10.50 \times 35 = \$367.50$

13. a) \$4.80 for 400g

 $\frac{4.80}{4} = 1.20$ for 100g

b) 250g

 $1.20 \times 2.5 = \$3.00$ for 250g

c) 1kg = 1000g

 $1.20 \text{ for } 100g = \frac{1.20 \times 10}{10} = \12.00 for 1000g

d) \$18

 $\begin{array}{r} \$12 \\ 3 \\ 3 \\ \hline \$18 \end{array}$ $\begin{array}{l} \rightarrow 1000g \\ \rightarrow 250g \\ \rightarrow 250g \\ 1500g \\ \text{or } 1.5kg \end{array}$

$$14$$

$$\text{a) } \frac{109 \text{ km}}{\text{hr}}$$

$$109 \text{ km} = \frac{109\,000 \text{ m}}{3600 \text{ s}}$$

$$\frac{1 \text{ hr}}{60 \times 60} = \frac{1}{3600} \text{ sec}$$

$$30.3 \text{ m/s}$$

$$\text{b) } \frac{50 \text{ km}}{\text{hr}} = \frac{50\,000 \text{ m}}{3600 \text{ s}}$$

$$= 13.9 \text{ m/s}$$

$$15. \text{ a) } \frac{40 \text{ m}}{\text{s}} \times \frac{3600 \text{ s}}{\text{hr}}$$

$$= \frac{144\,000 \text{ m}}{\text{hr}}$$

$$= 144 \text{ km/hr}$$

$$\text{b) } \frac{1.5 \text{ m}}{\text{s}} \times \frac{3600 \text{ s}}{\text{hr}}$$

$$= \frac{5400 \text{ m}}{\text{hr}}$$

$$= 5.4 \text{ km/hr}$$

16. 1 hr \rightarrow 25 km
 ☺

b) Average speed
 25 km/hr

17. a) \$: £ = \$: £
 2.5 : 1 = : 20
 x20 x20 \$50

\$50 can for £20

b) \$: £ = \$: £
 2.5 : 1 = 30 :
 5 : 2 = 30 :
 x6 x6 12

A \$30 can gift has a value of 12 £

18. Eyes : time
 225 : 1hr
 225 : 60min = : 15min
 ÷4 ÷4 56.25

b) 225 : 60min = : 1min
 ÷60 ÷60 3.75 ÷2 ÷2
 = 1.875 : 1/2 min
 in
 30sec

Assumptions
 - constantly working at the same pace.

pg 308 #1, #2, #3, #4, #5a, #7, #11, #12, #20

$$1a) 0.65 = \frac{65}{100} = \frac{13}{20} = 65\%$$

$$b) 0.0069 = \frac{69}{10000} = 0.69\%$$

$$c) 0.0375 = \frac{375}{10000} = \frac{3}{80} = 3.75\%$$

$$d) 0.9825 = \frac{9825}{10000} = \frac{393}{400} = 98.25\%$$

$$2) \text{ Connor } \frac{21}{24} = 0.875 = 87.5\%$$

$$\text{Rose } 83.\bar{3}\%$$

↑
higher %
so better mark

$$3) a) 38\% = \frac{38}{100} = \frac{19}{50} = 0.38$$

$$b) 93.75\% = \frac{93.75}{100} = \frac{9375}{10000} = \frac{15}{16} = 0.9375$$

$$c) 0.79\% = \frac{0.79}{100} = \frac{79}{10000} = 0.0079$$

$$d) 0.2\% = \frac{0.2}{100} = \frac{2}{1000} = \frac{1}{500} = 0.002$$

$$4) a) 160\% = 1.6$$

$$b) 310\% = 3.1$$

$$c) 0.27\% = 0.0027$$

$$d) 0.9\% = 0.009$$

$$5a) 166\% \text{ of } 26988$$

$$1.66 \times 26988$$

$$44800.08$$

$$\approx 44800$$

44800 people
attended the grey cup

7) 60% of $n = 39$

$$\frac{0.6}{0.6} \times n = \frac{39}{0.6}$$
the total for the test was 65
so Wei made $\frac{39}{65}$ of test

$$n = 65$$

11) Save \$20 Sales Price = \$49.99
 a) Original Price = $49.99 + 20 = \$69.99$
 b) % decrease = $\frac{\text{Difference}}{\text{Original}} \times 100\%$

$$= \frac{20}{69.99} \times 100\%$$

$$= 0.28576 \times 100$$

$$= 28.576\%$$

$$\approx 29\%$$

12) Amount Discount = Original \times Rate

$$= 89.99 \times 25\%$$

$$= 89.99 \times 0.25$$

$$= \$22.50$$

 Sales Price = Original - Discount Amount

$$= \$89.99 - \$22.50$$

$$= \$67.49$$

Tax = 13% of Price

$$= 0.13 \times 67.49$$

$$= 8.7737$$

$$= \$8.77$$

Cost w tax = $\overset{\text{Sales Price + tax}}{67.49 + 8.77}$

$$= \$76.26$$

20) a) $3:7 = h:70$

$$\frac{3}{7} = \frac{h}{70}$$

$$h = 30$$
 b) $3:8 = 15:r$

$$\frac{3}{8} = \frac{15}{r}$$

$$r = 40$$

c) $s:42 = 5:6$

$$\frac{s}{42} = \frac{5}{6}$$

$$s = 35$$
 d) $84:t:96 = 21:27:24$

$$= 7:9:8$$

$$t = 9 \times 12$$

$$t = 108$$

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😊 a) \$399 for 3 weeks
 $\div 3$
 \$133 for 1 week

b) $\frac{680}{\div 8}$ km in $\frac{8}{\div 8}$ hours

85 km in hours

c) 12 bottles of juice for \$3.49
 $\div 12$ $\div 12$

\$0.29 / bottle

d) 3 cans of soup for \$0.99
 $\div 3$ $\div 3$

\$0.33 / can

e) \$24.00 for 3h or \$36.00 for 4h
 $\div 3$ $\div 4$
 \$8/hr \$9/hr

\$36 for 4h is greater

b) \$4.50 for 6 muffins OR \$6.00 for 1 dozen

\$9.00 for 12 muffin
 (1 dozen)

\$4.50 for 6 is greater

c) \$0.99 for 250ml OR \$3.59 for 1L
 $\times 4$ $\times 4$

\$3.96 for 1000 ml
 or 1L

\$0.99 for 250ml is greater

7. 😊. \$1.49 for 110ml OR 4.29 for 500ml
 $\times 4$

5.96 for 440ml

so 4.29 for 500ml is a better deal

b) The smaller cost less and she might not have needed 500ml

c) Depending on what the soup was for and how much they needed. - -

8. 5 for 1.99 OR 8 for 2.99
 $\div 5$ $\div 5$ $\div 8$ $\div 8$

1 for 0.40

1 for 0.37

Better Buy

b) 2L for 4.49 OR 1L for 2.89
 $\times 2$
 2L for 5.78

Better buy

c) 100ml for 1.79 OR 150ml for 2.19
 $\times 1.5$ $\times 1.5$
 150ml for 2.69

Better Deal

d) 500g for 3.49 OR 125g for 0.79
 $\times 4$ $\times 4$

500g for 3.16

Better Deal

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$$9) \begin{array}{l} 525 \text{ in } 6 \text{ hours} \\ \div 6 \qquad \div 6 \\ 87.5 \text{ km in } 1 \text{ hour} \end{array}$$

b) The distance is how far you expect him to go in 1 hour

$$c) \begin{array}{l} 525 \text{ in } 6 \text{ hours} \\ 87.5 \qquad 1 \text{ hour} \\ 87.5 \qquad 1 \text{ hour} \\ \hline 700 \text{ km} \qquad 8 \text{ hour} \end{array}$$

You would expect it to take 8 hours to travel 700 km

10

60 km in 3h

68 km in 4hr

70 km in 5h

20 km/hr

17 km/hr

14 km/hr

Greatest average speed 20 km/hr

11.

😊 \$370 in one week is more than \$315 in one week, so the lifeguard job pays more per week (also works more hours)

$$\begin{array}{l} \text{b) } 370 \text{ in } 40 \text{ hour} \\ \$9.25 / \text{hr} \end{array} \qquad \begin{array}{l} \$315 \text{ in } 35 \text{ hour} \\ \$9 / \text{hr} \end{array}$$

justify answer - almost any answer will be correct if you justify

$$12. \quad \begin{array}{l} 114 \text{ points in } 9 \text{ games} \\ \div 9 \end{array} \qquad \begin{array}{l} \div 9 \end{array}$$

12.7 in 1 game

Average 12.7 pts / game

$$\text{b) } \begin{array}{l} 12.7 \text{ in } 1 \text{ game} \\ \times 24 \end{array} = \frac{\quad}{\quad} : 24 \text{ games}$$

304.8
or
305 pts.

$$13. \quad \begin{array}{l} 118.1 \text{ cm in } 24 \text{ h} \\ \div 24 \end{array} = \frac{\quad}{\quad} : 1 \text{ hr}$$

4.9

4.9 cm/hr

14
Brand A
12.99 for 3.6 kg
 $\times 4$ $\times 4$
\$52 14.4 kg

Brand B
\$39.99 for 18.1 kg

Brand B is a better buy.

b) Brand A
12.99 for 3.6 kg
 $\div 3.6$ $\div 3.6$
3.61 for 1 kg

39.99 for 18.1 kg
 $\div 18.1$ $\div 18.1$
2.21 for 1 kg

c) Brand B is definitely a better buy.

- d) → Might not have enough
→ Might not want that big bag
→ Might only have a small dog
→ Brand B might not be as nutritious.

15
a) i) Apple 60 cal

Cycling 216 cal / hour
 $\div 4$ $\div 4$

54 cal in 15 min

ii) 2 Slices of bread 140 cal

Walking 270 cal / hour
 $\div 2$ $\div 2$

135 cal 30 min

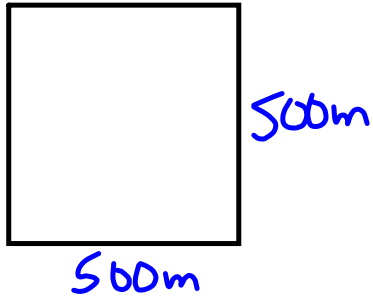
b) ice cream + doughnut

$$290 + 204 = 494 \text{ cal}$$

Swimming burns cal the quickest

Walking for 2 hours or cycling
 for 2 hours would burn the cal

16.



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

$$\begin{aligned}
 1 \text{ bag} &\rightarrow 1200 \text{ m}^2 \\
 100 \text{ bags} &\rightarrow 120\,000 \text{ m}^2 \\
 200 \text{ bags} &\rightarrow 240\,000 \text{ m}^2 \\
 8 \text{ bags} &\rightarrow 9\,600 \text{ m}^2 \quad (8 \times 1200)
 \end{aligned}$$

$$\begin{aligned}
 208 \text{ bags} &\rightarrow 249\,600 \text{ m}^2 \\
 \text{Approx } 208 \text{ bags} &\text{ are needed}
 \end{aligned}$$

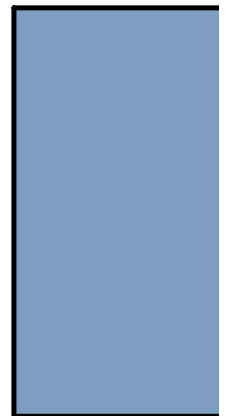
$$17. a) \frac{40}{5}$$

Earn \$40 for 5 hours worked

$$b) \frac{1.75}{100}, \text{ pay } \$1.75 \text{ for } 100\text{g of cheese}$$

18.

Type of Car	Fuel Consumption	Fuel Consumption for 100 km
Toyota Echo	26.8L / 400 km	6.7 L / 100 km
Ford Focus	23.0 L / 250 km	9.2 L / 100 km
Honda Civic	11.25 L / 150 km	7.5 L / 100 km
Saturn Ion	33.25L / 350 km	9.5 L / 100 km
Hyundai Accent	16.2 L / 200 km	8.1 L / 100 km



b) Least Fuel Efficient

$$\begin{array}{r} \text{Saturn} \quad 9.5 \text{ L} / 100 \text{ km} \\ \quad \times 5 \qquad \quad \times 5 \\ \hline 47.5 \text{ L} / 500 \text{ km} \end{array}$$

$$\begin{array}{r} \text{most} \\ \text{Toyota} \quad 6.7 \text{ L} / 100 \text{ km} \\ \quad \times 5 \qquad \quad \times 5 \\ \hline 33.5 \text{ L} / 500 \text{ km} \end{array}$$

Review for Percent/Ratio/Rate Test

Be able to change from a fraction to a decimal to a percent, and vice versa

Be able to work with percents less than 1% and greater than 100%

Be able to mentally calculate given percents

Be able to solve the 3 types of percents problems

Be able to find the amount of tax and the total cost.

Be able to find the amount of discount and the sale price.

Be able to calculate Percent Increase = $\frac{\text{Amount of Increase}}{\text{Original Amount}} \times 100\%$

Be able to calculate Percent Decrease = $\frac{\text{Amount of Decrease}}{\text{Original Amount}} \times 100\%$

Be able to write ratios as part to part and part to whole

Be able to find equivalent ratios and compare ratios

Be able to find the missing terms in given ratios

Be able to solve ratio (proportion) problems

Know what a rate is and the difference between ratios and rates

Be able to compare rates

Be able to solve problems involving rates.

10 Multiple Choice

Part B Short Response #1 to #9

Examples

- 1) $12:4 = \underline{\quad} : \underline{\quad}$
- 2) % of number ex) 20% of 80
- 3) a) Word Problem on Discount and Sales tax
b) Sales Tax and Cost with tax
- 4) 35% of a number is 70
- 5) If your rate is 30 beats for 20 seconds then what is expected to be your rate for 1 min.
90 beats 60 sec
- 6) Who did better did Jan made 4 out of 5 or Peter did 41 out of 50?
- 7) find unit rate if a cow runs 80 Km in 2 hours
40 km/h
- 8) and more

$$12:4 = \frac{24}{8} : 8$$

(Note: A blue arrow points from 12 to 24 with a red 'x2' above it. A red arrow points from 4 to 8 with a red 'x2' below it.)

a) T-shirt cost \$25 it is on sale for 10% off what is discount, what is sales price?

b) What is tax on t-shirt what is cost with tax?

$$\frac{4}{5} = 0.80 = 80\%$$

$$\frac{41}{50} = 0.82 = 82\%$$

↓

Ex) $\begin{matrix} b : g \\ 3 : 4 \\ \times 5 \quad \times 5 \\ 15 : 20 \end{matrix}$

Total
7
 $\times 5$
35

there is a total of 35 Students in the class how many are boys?
15 boys

Class/Homework

10 Multiple Choice

Part B Short Response #1 to #9

Examples

1) $12:4 = __:3$

2) % of number ex) 20% of 80

3) a) Word Problem on Discount and Sales tax

b) Sales Tax and Cost with tax

4) 35% of a number is 70

5) If your rate is 30 beats for 20 seconds then what is expected to be your rate for 1 min.

6) Who did better did Jan made 4 out of 5 or Peter did 41 out of 50?

7) find unit rate if a cow runs 80Km in 2 hours.

8) and more

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if you need more practice Page 308

#. 6.9.10,15,16,18, 22,23,24,27,28,31,32

Test on Unit 5 Percent, Ratio and Rates

TOMORROW, April 6