Grade 8 Math PRACTICE Test
Percent, Ratio and Rate

$$\frac{\text{Part} - \text{answer}}{\text{Whole} - \text{original}} = \frac{\%}{100}$$

Name:_____
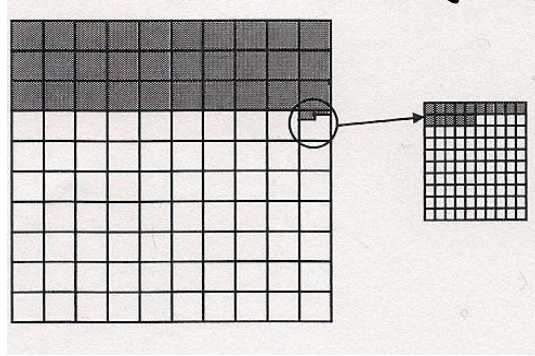
Part A: Selected Response (1 mark each)

1. What percent is represented by the shaded region?

1._____

A) 30%
B) 30.5%
C) 30.15%
D) 30.015%

2. What is 0.62% of 310?

2._____

A) 0.1922
B) 1.922
C) 19.22
D) 192.2

$$\frac{x}{310} = \frac{0.62}{100}$$

$$\frac{100x}{100} = \frac{192.2}{100}$$

$$x = 1.922$$

3. What percent is 3 out of 750?

3._____

A) 0.004 %
B) 0.040 %
C) 0.400 %
D) 4.000 %

$$\frac{3}{750} = \frac{x}{100}$$

$$\frac{750x}{750} = \frac{300}{750}$$

$$x = 0.4\%$$

4. Calculate. 240% of what number is 36?

4._____

A) 15.0
B) 86.4
C) 276
D) 864

$$\frac{36}{x} = \frac{240}{100}$$

P:W

$$\frac{240x}{240} = \frac{3600}{240}$$

$$x = 15$$

5. What decimal is equivalent to 12:8?

5._____

A) 1.4
B) 2.0
C) 0.6
D) 1.5

$$\frac{12}{8} = 1.5 \quad \text{decimal}$$

top ÷ bottom

6. The ratios ▢:16 and 5:2 are equivalent. Find the missing number. 6._____

    A) 23
    B) 80
    C) 32
    D) 40

$$x:16$$
$$5:2$$

$$\frac{2x}{2} = \frac{80}{2}$$

$$x = 40$$

7. A jar has 10 red candies, 6 yellow candies, and 12 blue candies. Describes 7._____
the ratio of the number of red candies to the number of yellow candies to the
number of blue candies, expressed in lowest terms?

    A) 5:3:6
    B) 5:2:6
    C) 6:10:12
    D) 10:6:12

$$R:Y:B$$
$$10:6:12$$
$$5:3:6$$

8. The ratios below are for different colors of paint. Which ratio of liters of 8._____
white paint to liters of blue paint will create the lightest shade of blue?

$$W:B$$

    A) 1:6
    B) 3:9 → 1:3
    C) 4:10 → 1:2.5
    D) 6:1 1:0.16

9. Write the part to part ratio 5 : 7 as a part to whole ratio. 9._____

$$5+7 = 12$$

    A) 5:12
    B) 7:2
    C) 7:5
    D) 12:5

$$5:12$$

10. Which represents the part to whole ratio of 2:5? 10._____

    A) ■■□□□□□
    B) ■■□□□
    C) ■■■■■□□
    D) ■■□□□□□□□

Part B: Constructed Response – Answer all questions and show all workings.

1. Complete each conversion. All fractions must reduced to lowest terms. (6 marks)

A) Change $\frac{3}{4}$ % to a decimal: $\underline{0.75\% = 0.0075}$

B) Change 0.003 to a percent: $\underline{0.3\%}$

C) Change 0.55 to a fraction: $\underline{\frac{55}{100} = \frac{11}{20}}$

D) Change $\frac{7}{5}$ to a decimal: $7 \div 5$ $\underline{1.4}$

E) Change $\frac{5}{4}$ to a percent. $= 1.25$ $\underline{125\%}$

F) Change 0.7 % to a fraction $= 0.007$ $\underline{\frac{7}{1000}}$

2. A test is marked out of 75. If you scored 60%, how many marks did you get on your test? (2 marks)

$$\frac{Part}{Whole} = \frac{\%}{100}$$

$$\frac{x}{75} = \frac{60}{100}$$

$$\frac{100x}{100} = \frac{4500}{100}$$

$$x = 45$$

you received 45 out of 75 on your test

3. A big box of Smarties has six thousand five hundred candies in it. What percent of them are blue if there are only 13 blue candies in the box? (2 marks)

total = 6500
Blue = 13
percent = ?

$$\frac{13}{6500} = \frac{x}{100}$$

$$\frac{6500x}{6500} = \frac{1300}{6500}$$

$$\boxed{x = 0.2\%}$$

4. A survey was conducted and it was found that **185 people** loved the Boston Bruins. If this was 95% of the people asked, how many people were asked? (2 marks)

Part

↳ need to find the whole

$$\frac{185}{x} = \frac{95}{100}$$

$$\frac{95x}{95} = \frac{18500}{95}$$

$$x = 194.7$$

About 195 people were asked.

$$\%change = \frac{[New - Original]}{original} \times 100$$

5. With the recent drop in oil prices, the average price of a house in Corner Brook changed to $250,000 from $280,000.

N   O

A) Is this an increase or decrease? (1 mark)

Decrease

B) Find the percent change. (2 marks)

$$\%change = \frac{[250000 - 280000]}{280000} \times 100 = \frac{-30000}{280000} \times 100 = -0.1071 \times 100$$

$$= -10.71\%$$

The percent decrease is 10.71%

6. In forty games, Sally had twelve hits. How many games did she play to get 100 hits? (2 marks)

games : hits
40 : 12
x : 100

$$\frac{12x}{12} = \frac{4000}{12}$$

$$x = 333.\overline{3}$$

She played approx. 333 games

Actual total

7. There are 96 students going on a school trip. If the ratio of boys to girls is 3:5, how many of the students are boys? (2 marks)

B : G

B : total
3 : 8
x : 96

$$\frac{8x}{8} = \frac{288}{8}$$

$$\boxed{x = 36}$$

36 students are boys.

8. If a truck travels at 110 km/h, how long will it take to run 575 km? (2 marks)

Km : hr
100 : 1
575 : x

$$\frac{100x}{100} = \frac{575}{100}$$

$$x = 5.75$$

It will take 5.75 hrs. to go 575 Km.

9. A case of 24 Pepsi at Walmart costs $7.97. What is the unit price? (2 marks)

cans: $

24 : 7.97

1 : x

$$\frac{24x}{24} = \frac{7.97}{24}$$

$$x = 0.33$$

The unit price is $0.33/can

10. Anna bought gasoline for her trip and she paid $27.44 for 11.2 liters. In a nearby community Becky paid $82.41 for 33.5 liters. Which person got the better deal? (3 marks)

Anna: $27.44 : 11.2L

$2.42/L   x : 1

$$\frac{11.2x}{11.2} = \frac{27.44}{11.2}$$

$$x = 2.42$$

Anna is getting the better deal because the price per 1 litre is cheaper

Becky: $82.41 : 33.5L

$2.46/L   x : 1

$$\frac{33.5x}{33.5} = \frac{82.41}{33.5}$$

$$x = 2.46$$

11. A race car driver can drive an 800 km race in 2.8 hours.

A) How long would it take her to drive 150 km, rounded to the nearest tenth of an hour? (2 marks)

800 Km : 2.8 hr

150 Km : x

$$\frac{800x}{800} = \frac{420}{800}$$

$$x = 0.525$$

It will take her 0.5 hours

B) How far will the race be if it takes six hours to complete? (2 marks)

800 Km : 2.8 hr

x : 6

$$\frac{2.8x}{2.8} = \frac{4800}{2.8}$$

$$x = 1714.29$$

The race is 1714.29 Km