

Name: _____

Mark = $\frac{\quad}{34}$ **Section A: Selected Response.** Write the correct response on the space allocated. (1 mark each)

_____ 1. Which represents 5.5% as a decimal?

- a. 0.055
b. 0.55
c. 5.5
d. 5.5

$$5.5\% = 0.055$$

_____ 2. 32.5% as a fraction in simplified form is:

- a. $\frac{65}{200}$
b. $\frac{325}{100}$
c. $\frac{32.5}{100}$
d. $\frac{13}{40}$

$$32.5\% = \frac{32.5}{100} = \frac{325}{1000} \div 25 = \frac{13}{40}$$

_____ 3. Write $\frac{5}{8}$ as a percent.

- a. $\frac{5}{8}\%$
b. 0.6%
c. 62.5%
d. 64%

top ÷ bottom
 $0.625 = 62.5\%$

_____ 4. 110% of a number is 75. What is the number?

- a. 6.82
b. 68.2
c. 8.25
d. 82.5

$$1.10 \times n = 75$$

$$\frac{1.10}{1.10} \quad \frac{75}{1.10}$$

$$n = 68.2$$

OR

$$\frac{P}{N} = \frac{\%}{100}$$

$$\frac{75}{x} = \frac{110}{100}$$

$$\frac{110x}{110} = \frac{7500}{110} \quad x = 68.2$$

_____ 5. On Maple Leaf Day, 92% of the students wore a Toronto Maple Leaf hat. If 625 students wore a hat, how many students attended spirit day? (Round to the nearest whole number.)

- a. 15
b. 50
c. 575
d. 679

$$0.92 \times n = 625$$

$$\frac{0.92}{0.92} \quad \frac{625}{0.92}$$

$$n = 679$$

OR

$$\frac{P}{N} = \frac{\%}{100}$$

$$\frac{625}{x} = \frac{92}{100}$$

$$\frac{92x}{92} = \frac{62500}{92} \quad x = 679$$

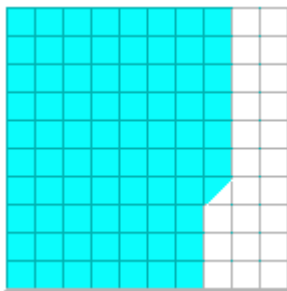
_____ 6. Which simplified fraction represents the following hundreds grid:

a. $\frac{76.5}{100}$

b. $\frac{765}{200}$

c. $\frac{153}{200}$

d. $\frac{765}{1000}$



$$\frac{76.5}{100} = \frac{765}{1000} = \frac{153}{200}$$

↑
Reduce

_____ 7. The price of a lightsaber costs \$125. This year it can be purchased for \$175. What is the percent increase?

a. 29%

b. 40%

c. 42%

d. 71%

$$\% \text{ change} = \frac{\text{New} - \text{Original}}{\text{original}} \times 100 = \frac{175 - 125}{125} \times 100 = 40\%$$

$$\downarrow$$

$$\frac{50}{125} \times 100 = 0.4 = 40\%$$

_____ 8. What is 150% of 80?

a. 1.5

b. 80

c. 120

d. 160

$$1.50 \times 80$$

$$= 120$$

OR

$$\frac{x}{80} = \frac{150}{100}$$

$$\frac{P}{W} = \frac{\%}{100}$$

_____ 9. What is 0.7% of 30?

a. 0.021

b. 0.21

c. 2.1

d. 21

$$0.007 \times 30$$

$$= 0.21$$

$$\frac{100x}{100} = \frac{12000}{100}$$

$$x = 120$$

_____ 10. Leia and Han ate a meal that cost \$74.99. If they left a \$17.50 tip, what percent tip did they leave?

a. 0.23%

b. 4.3%

c. 23%

d. 430%

$$\frac{17.50}{74.99} = 0.2334 = 23.34\%$$

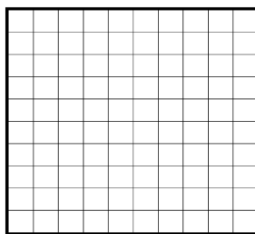
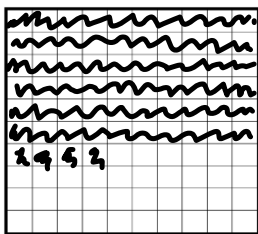
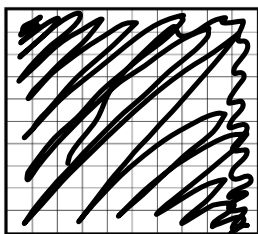
Section B: Constructed Response. Complete all questions for this section. All workings must be shown for full marks.

1. Complete the following table. Make sure the fractions are written in simplified form:
(6 marks)

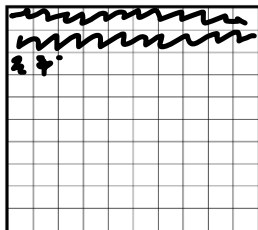
| Percent | Decimal | Fraction |
|--------------------------------|-----------------|---------------------------------|
| 120% | 1.20 | $\frac{120}{100} = \frac{6}{5}$ |
| $\frac{5}{6}\% = 0.8\bar{3}\%$ | 0.008 $\bar{3}$ | $\frac{5}{600}$ |
| 223% | 2.23 | $\frac{223}{100} =$ |
| 25% | 0.25 | $\frac{1}{4}$ |
| 240% | 2.4 | $\frac{12}{5}$ |
| 0.125% | 0.00125 | $\frac{1}{800}$ |

2. Use a grid to represent each of the following percentages. Not all grids provided may need to be used.
(1 mark each)

- (a) 164%



- (b) 22.12 %



3. Calculate the percentage of increase or decrease. (Round answers to the nearest tenth.) (2 marks each)

(a) Poe bought a rare pistol for \$125 and later sold it for \$425. What is the percent increase?

$$\% \text{ increase} = \frac{425 - 125}{125} \times 100 = 240\%$$

(b) The price of a computer is reduced from \$1290 to \$800. What is the percent decrease in price?

$$\% \text{ decrease} = \frac{800 - 1290}{1290} \times 100 = -37.98\%$$

4. (a) A Denver Broncos Superbowl Champions T-Shirt is on sale for 20% off. If you save \$16.50, what is the original price of the shirt? (2 marks)

$$100\% - 20\% = 80\%$$

80% of Original price is Sale price

$$0.80 \times n = 16.50$$

$$\frac{0.80 \times n}{0.80} = \frac{16.50}{0.80}$$

$$n = 20.63$$

$$\frac{P}{W} = \frac{\%}{100}$$

$$\frac{16.50}{x} = \frac{20}{100}$$

$$\frac{80x}{80} = \frac{1650}{80}$$

original price is \$20.63

$$x = 20.63$$

- (b) After a price reduction of 85%, the sale price of a Montreal Canadiens jacket is \$45. What was the original price of the jacket? (2 marks)

$$100 - 85 = 15\%$$

15% of original is Sale

$$\frac{0.15 \times n}{0.15} = \frac{45}{0.15}$$

$$n = 300$$

$$\frac{P}{W} = \frac{\%}{100}$$

$$\frac{45}{x} = \frac{15}{100}$$

$$\frac{15x}{15} = \frac{4500}{15}$$

$$x = 300$$

$$\boxed{\$300}$$

5. In a basketball tournament, Alex made 23 out of 80 shots and Mason made 38 of 145 shots. Which player had the better shooting percentage? (2 marks)

$$\text{Alex: } \frac{23}{80} = 0.2875 = 28.75\%$$

$$\text{Mason: } \frac{38}{145} = 0.2621 = 26.21\%$$

Alex had the better shooting percentage.

6. A Star Wars hoodie costs \$100. It is now on sale for 15% off. However you must also pay 15% sales tax. Would the hoodie cost you \$100, less than \$100 or more than \$100. Explain your reasoning. (2 marks)

Sale Price is 85% of \$100

$$\begin{aligned}\text{Sale Price} &= 0.85 \times 100 \\ &= \$85\end{aligned}$$

$$\begin{aligned}\text{Total Price with tax} &= 1.15 \times 85 \\ &= \$97.75\end{aligned}$$

The hoodie would cost less than \$100, since 15% tax is applied to Sale price

7. It is Discount Days at the local Star Wars shop. All lightsabers are marked down at 30% off. George buys a light saber and saves \$24.00. If tax is 15%, how much change does he get back from a \$100? Show all workings. (4 marks)

$$\begin{array}{l} \text{Discount (15)} \quad 30\% \text{ (of) Original} \\ \downarrow \quad \quad \quad \downarrow \\ \frac{24}{0.3} = \frac{0.30 \times n}{0.30} \end{array}$$

$$80 = n$$

original price is \$80

$$\text{Sale Price} = 80 - 24 = \$56$$

$$\begin{aligned}\text{Total Price including taxes} &= 1.15 \times 56 \\ &= \$64.40\end{aligned}$$

$$\begin{aligned}\text{Amount of Change} &= 100 - 64.40 \\ &= \$35.60\end{aligned}$$