

# Quiz 4

Show all your work

Name: \_\_\_\_\_  
Number: \_\_\_\_\_  
Signature: \_\_\_\_\_  
Score: \_\_\_\_/10

**Problem 1:** Answer the questions. Write out steps for each; provide a two-decimal place accuracy when appropriate. One mark per part except two marks for the last part.

- a. Convert the fraction *twenty-five eighths* into a percent.

$$\frac{25}{8} = 3.125 = 312.5\%$$

312.5%

- b. Find 13% of 500.

$$0.13 \times 500 = 65$$

65

- c. Janette wants to buy 5 bags of Halloween candy priced at \$10 each. With BC's 12% combined tax on candy, how much does Janette need to pay in total?

The price is  $10 \times \$5 = \$50$ , so she needs to pay  $1.12 \times \$50 = \$56$ .

\$56.00

- d. Out of Brian's collection of books, 20% is comics. If Brian has 52 comic books, how many of his books are NOT comics?

If the total number of books is  $x$ , then  $0.20x = 52$ , so  $x = \frac{52}{0.20} = 260$ . Therefore  $260 - 52 = 208$  are not comics.

208

- e. David treated his mother to a Mother's Day Brunch at Queen Elizabeth's Theatre's Browns Social House. He saved \$100 for this occasion to cover a 15% tip and a 12% service tax. What was the maximum they could order to stay within his budget of \$100?

Say the cost before tip and taxes is  $\$x$ . Then the tip is  $0.15x$ , and the tax is  $0.12x$ , so he has to pay  $x + 0.15x + 0.12x = 1.27x$ .

If  $1.27x = \$100$ , then  $x = \frac{100}{1.27} = \$78.74$ .

\$78.74

Score: /5

**Problem 2:** Brian's grandmother is offered by her bank three options for a \$10 000 guaranteed investment certificate (GIC):

- 3.5% compounded weekly.
- 3.65% compounded semi-annually; or
- 3.59% compounded monthly.

Compute the interest after one year in each case and decide which option earns Janette's grandmother the most. (Use 52 weeks per year.)

- $\$10\,000 \left(1 + \frac{0.035}{52}\right)^{52} = \$10\,356.08$ , so the interest is \$356.08.
- $\$10\,000 \left(1 + \frac{0.0365}{2}\right)^2 = \$10\,368.33$ , so the interest is \$368.33.
- $\$10\,000 \left(1 + \frac{0.0359}{12}\right)^{12} = \$10\,364.97$ , so the interest is \$364.97.

Hence the 3.65% compounded monthly (option b) is best.

Score: /5