Math 123-01
Fall 2025
Dr. Lily Yen

Quiz Four

Show all your work

Name: _____
Number: _____
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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-three eighths* into a percent.

$287.5\,\%$

$\frac{23}{8} = 2.875 = 287.5\,\%$

b. Find $17\,\%$ of 500.

85

$0.17 \times 500 = 85$

c. Janette wants to buy 6 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?

\$67.20

The price is $10 \times \$6 = \$60$, so she needs to pay $1.12 \times \$60 = \$67.20$.

d. Out of Brian's collection of books, $10\,\%$ is comics. If Brian has 42 comic books, how many of his books are NOT comics?

378

If the total number of books is x, then $0.10x = 42$, so $x = \frac{42}{0.10} = 420$. Therefore $420 - 42 - 52 = 378$ are not comics.

e. David treated his mother to a Mother's Day Brunch at Queen Elizabeth's Theatre's Browns Social House. He saved \$120 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 \$120?

\$94.49

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 $1.27x = \$120$, then $x = \frac{120}{1.27} = \$94.49$.

Score: /5

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

a. $3.6\,\%$ compounded weekly.

b. $3.75\,\%$ compounded semi-annually; or

c. $3.69\,\%$ 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.)

a. $\$10\,000\left(1 + \frac{0.036}{52}\right)^{52} = \$10\,366.43$, so the interest is \$366.43.

b. $\$10\,000\left(1 + \frac{0.0375}{2}\right)^{2} = \$10\,378.52$, so the interest is \$378.52.

c. $\$10\,000\left(1 + \frac{0.0369}{12}\right)^{12} = \$10\,375.31$, so the interest is \$375.31.

Hence the $3.75\,\%$ compounded semi-annually (option b) is best.

Score: /5