1. Convert 27% to:
   a) decimal
      \[ 0.27 \]
   b) fraction
      \[ \frac{27}{100} \]

2. Convert 0.09 to:
   a) fraction
      \[ \frac{9}{100} \]
   b) percent
      \[ 9 \% \]

3. Convert \( \frac{3}{5} \) to:
   a) decimal (1 mark)
      \[ 0.6 \]
   b) percent (1 mark)
      \[ 60 \% \]

4. Calculate the cash price of a snowblower by adding 5% GST and 8% PST to the sticker price of $1295.00.
   \[
   1295 + \left( \frac{1295}{64.75} \times 0.05 \right) + \left( \frac{1295}{103.60} \times 0.08 \right)
   = \$1463.35
   \]
5. You deposit $1000 in the bank. The annual interest rate is 2%. You leave your money in the bank for 4 years.

a) Calculate the simple interest earned at the end of 4 years.

\[ I = P \times r \times t \]
\[ = 1000 \times 0.02 \times 4 \]
\[ = 80 \text{ in interest} \]

b) Calculate the total amount in your bank account at the end of 4 years.

\[ A = P + I \]
\[ = 1000 + 80 \]
\[ = 1080 \text{ balance at end of 4 years} \]

6. You invest $7,000 in the bank at an annual interest rate of 2.0%. You leave the money in the bank for 7 months.

a) Calculate the simple interest earned at the end of 7 months.

\[ I = P \times r \times t \]
\[ = 7000 \times 0.02 \times \left( \frac{7}{12} \right) \]
\[ = 81.67 \]

b) Calculate the total amount in your bank account at the end of 7 months.

\[ A = P + I \]
\[ = 7000 + 81.67 \]
\[ = 7081.67 \]
7. Your next door neighbor is in grade 5. He wants to know why he should put his summer job earnings of $100 in the bank. Explain what the bank will do for him. For 1 mark, use the word interest in your example. For 2 marks, use 2% in your answer as well as a calculation.

- Bank will add interest to your account.
  - For every $100 they add $2 per year.
  - $100 becomes $102 after one year. That is interest added on at a rate of 2% per yr.

8. You are given the formula \( I = Prt \). However, sometimes you want to find something other than \( I \). Write out the formulas for \( P, r, \) and \( t \).

\[
\begin{align*}
  P & = \frac{I}{rt} \\
  r & = \frac{I}{P} \times 100 \\
  t & = \frac{I}{Pr}
\end{align*}
\]

9. How long would it take to double $1,000,000 if the interest rate was 2%?

\[
\frac{72}{2} = 36 \text{ years}.
\]
10. Calculate the time required to earn the following amounts of interest:

a) $100 in interest from $1,000 invested at 2%.

\[ t = \frac{I}{Pr} = \frac{100}{(1000 \times 0.02)} = 5 \]

5 years

b) $250 in interest on $2,000 invested at 2.235%.

\[ t = \frac{I}{Pr} = \frac{250}{(2000 \times 0.0235)} = 5.32 \]

\[ 3.2 \times 12 = 38.4 \text{ years} \]

11. John wants to earn $3,000 interest so he can buy his fiancée a lawn mower. His local bank offers him 2.25% interest. He plans to give his fiancée the lawn mower in 3 years. How much money (principal) does he need to invest to earn this amount of interest?

(2 marks)

\[ P = \frac{I}{rt} = \frac{3000}{0.0225 \times 3} = 44,444.44 \]
12. Martha has sent $2,000 to a friend in Scotland. She wants her to invest it for her. Calculate the interest rate of Martha’s investment if she earns $800 of simple interest in 5 years.

\[ I = 800 \]
\[ P = 2000 \]
\[ r = ? \]
\[ t = 5 \]

\[
\frac{I}{P} \times 100 = \frac{800}{(2000 \times 5)} \times 100 \]

\[ = 8\% \]

13. Explain what is meant by "compounding" when you are putting your money into a savings account.

Interest is calculated and added onto the principal. This builds the investment.

14. How many times a year is an investment compounded if it is compounded:

a) monthly 12
b) semi-annually 2
c) daily 365
d) weekly 52
15. Bob invested $11,000 in a bank offering an interest rate of 2.55%, compounded annually. How much money will he have in his account at the end of 5 years?

\[ A = P \left(1 + \frac{r}{n}\right)^{nt} \]

\[ = 11000 \left(1 + \frac{0.0255}{1}\right)^5 \]

\[ = $12475.87 \text{ in account} \]

16. Rob invested $5,000 in a bank offering an interest rate of 2.85%, compounded daily. How much money will he have in his account at the end of 3 years? Show your calculations.

\[ A = P \left(1 + \frac{r}{n}\right)^{nt} \]

\[ = 5000 \left(1 + \frac{0.0285}{365}\right)^{3 \times 365} \]

\[ = $5446.29 \text{ in account} \]

17. Fill out the table to show you understand the various credit options available.

<table>
<thead>
<tr>
<th>Credit Option</th>
<th>Interest Rate</th>
<th>Compounds per year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loan from the credit union or a bank</td>
<td>4.75%</td>
<td>12 (monthly)</td>
</tr>
<tr>
<td>Credit Card like MasterCard or Visa</td>
<td>19.99%</td>
<td>365 (daily)</td>
</tr>
<tr>
<td>MoneyMart</td>
<td>400 - 500%</td>
<td>Not daily, but a fee of $100. etc. $20/100 borrowed.</td>
</tr>
</tbody>
</table>
18. Payday Loan companies say they don't charge interest. Briefly explain how they work.

Charge a fee per $100 borrowed.
Ex: $20 fee for $100 borrowed, due in 2 weeks. Looks like 20%, but is actually way higher because term is only 2 weeks, not a year.

19. You want to purchase a car for $12,500 including all taxes and fees.

a) Calculate the monthly loan payment for a $12,500 loan. The annual interest rate is 4.5%, the term is 2 years.

\[
\frac{12500}{1000} \times \frac{43.65}{100} = \$545.63
\]

b) Calculate the total amount paid back to the bank.

\[
\$545.63 \times 24 \text{ months} = \$13047.12
\]

c) How much interest did you pay on your loan?

\[
13047.12 - 12500 = \$547.12 \text{ interest.}
\]
20. You want to purchase a car for $12,500 including all taxes and fees.

a) Calculate the monthly loan payment for a $12,500 loan. The annual interest rate is 4.5%, the term is 7 years.

\[
\frac{12500}{7000} \times 13.90 = \$173.75
\]

b) Calculate the total amount paid back to the bank.

\[
\$173.75 \times 84 \text{ payments} = \$14595
\]

a) How much interest did you pay on your loan?

\[
14595 - 12500 = \$2095
\]

21. Give one (1) advantage and one (1) disadvantage for extending the term of your loan from 2 years to 7 years.

Adv - lower monthly payment

Disadv - pay more money in interest.
**Savings and Loans Review**

22. What does GIC stand for?

   guaranteed investment certificate
   also called a term deposit.

23. What is a term deposit?

   put money into an account (lock it in)
   for a period of time (e.g. 5 years) at
   a higher interest rate than savings.

24. We discussed two other ways you “invest” money and get a “return” on your investment. We looked at the stock market and collectibles. Write down a brief description, advantage, and disadvantage of each.

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Advantage</th>
<th>Disadvantage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stock Market</strong></td>
<td>buy share in a company</td>
<td>higher rate of return</td>
<td>High risk could lose your money</td>
</tr>
<tr>
<td><strong>Collectibles</strong></td>
<td>buy something and wait for its value to increase</td>
<td>hobby</td>
<td>have to hang on to stuff. May not increase in value</td>
</tr>
</tbody>
</table>