

**FORMULAS...**

**Simple Interest**

$$\begin{aligned} I &= Prt \\ A &= P + I \\ A &= P + Prt \\ A &= P(1 + rt) \end{aligned}$$

**Compound Interest**

$$\begin{aligned} A &= P \left( 1 + \frac{r}{n} \right)^{nt} \\ I &= A - P \end{aligned}$$

**Rule of 72 and Rate of Return**

$$\begin{aligned} \text{Doubling Time} &= \frac{72}{\text{Rate}} \\ \text{ROR} &= \frac{\$ \text{earn}}{\$ \text{invested}} \times 100\% \end{aligned}$$

**Present Value**

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

**TVM-Solver**

$$\begin{aligned} N &= \\ I \% &= \\ PV &= \\ PMT &= \\ FV &= \\ P / Y &= \\ C / Y &= \\ PMT : & \text{END BEGIN} \end{aligned}$$

**INSTRUCTIONS: ALL WORK MUST BE SHOWN...JUST WRITING DOWN ANSWERS WILL NOT BE ACCEPTED! SHOW THE FORMULAS AND SCREENSHOT WHEN USING THE TVM-SOLVER.**

**THIS MUST BE PASSED IN AT THE END OF CLASS WITH CALCULATOR!!!**

#1. An investment portfolio contains the following...

- Investment of a \$7500 bond that earns 4 % interest compounded quarterly for the first 10 years and 6 % interest compounded quarterly until the end of the term.
- Regular deposits of \$175 a month into a Tax Free Savings Account at 2.5 % compounded monthly.
- Deposit of \$3000 into a Guaranteed Investment Certificate at 3.75 % interest compounded semi-annually.

a) What is the value of this portfolio after 25 years?

[9]

Total Future Value = \$ \_\_\_\_\_

b) What is the rate of return?

[3]

Rate of Return = \_\_\_\_\_ %

#2. Harley Sickle was searching Kijiji and found a used motorcycle valued at \$12 500. He decided to get as personal loan from the bank to make the purchase with has a current interest rate of 8.5 % compounded monthly. If he plans to pay this purchase off in 3 years...

a) Determine his monthly payment.

[2]

**Monthly Payment = \$** \_\_\_\_\_

b) How much interest was charged by the bank for this purchase?

[2]

**Interest = \$** \_\_\_\_\_

#3. A 2018 Kawasaki Teryx retails for \$16 199 plus 15% HST on the company website. Anita Sidebyside can afford monthly payments of \$375. She has two credit options...

- Use store financing plan, which charges 12 % interest compounded daily. As an incentive to using their credit plan, the store will pay the tax **and** provide a \$500 immediate rebate.

**OR**

- Use her own line of credit from the bank, which charges 4.5 % interest compounded monthly.

Determine the amount that Anita will need to pay for each option and **circle her BEST option.**

[8]

**Store Credit Option = \$** \_\_\_\_\_ **Line of Credit Option = \$** \_\_\_\_\_