

No Graphing Calculators are allowed. Show all work of good form. Good luck!

Write the **CAPITAL** letter of the correct solution on the line. Each question is worth 2 marks. Show work of proper form to earn part marks. (2 marks each  $\times$  8 = 16)

1. Iris invests \$725 at 5.2%/a simple interest. What is the total amount in ~~Iris's~~ account at the end of 5 years?

- a) \$188.50      b) \$189.50      c) \$913.50      d) \$2610.00

$$FV = PV + (0.052 \times PV \times 5)$$

=

2. Joycelyn borrowed \$3000 at 3.6%/a compounded monthly for 4 years.

What is the future value of her investment?

- a) \$3009.00      b) \$3036.16      c) \$3432.00

- d) \$3463.91

$$\begin{aligned} & \frac{3.6\%}{12} = 0.3\% \\ & 4 \times 12 = 48 \\ & FV = PV (1+i)^n \\ & = 3000 (1.003)^{48} \end{aligned}$$

3. How much more will Eric earn in 5 years on an investment of \$9500 if he chooses an account that compounds monthly at 6%/a than an account that offers 6%/a simple interest?

- a) \$363.14      b) \$464.08      c) \$2850.00      d) \$3314.08

$$\begin{aligned} & \frac{5 \times 12}{60} = 0.005 \\ & = 12350 \\ & FV = PV (1+i)^n \\ & = 12814.076 \end{aligned}$$

4. Alvin borrows \$1700 at 5.8%/a interest compounded annually. How long will it take ~~Alvin~~ to owe triple the amount he originally borrowed?

- a) 2.8 years      b) 15 years      c) 19 years      d) 20 years

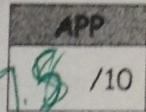
$$1700 \times 3 = \$5100$$

$$5100 = 1700(1.058)^n$$

$$\log 3 = (1.058)^n \log$$

$$0.477 = 0.02448566n$$

$$n = 19.48 \text{ yrs}$$



1.8 /10

C

D

B

C

✓

✓

5. Gary borrowed some money at 8.4% compounded quarterly. After 4 years, he repays \$5926.53 for the principal and interest. How much money did Gary borrow?

a) \$4250.00

$$\begin{array}{l} 4 \times 4 \\ = 16 \end{array}$$

b) \$5453.00

$$\begin{array}{l} \frac{8.4\%}{4} \\ = 2.1\% \\ = 0.021 \end{array}$$

$$FV = PV (1+i)^n$$

$$5926.53 = PV (1.021)^{16}$$

$$PV = 4249.996$$

c) \$5868.22

d) \$8264.42

A

6. An investment is compounded semi-annually at 5.3%/a for 8 years. If its future value is \$15 200, how much interest will it earn?

a) \$2869.75

$$\begin{array}{l} 8 \times 2 \\ = 16 \end{array}$$

b) \$5144.20

$$\begin{array}{l} \frac{5.3\%}{2} \\ = 2.65\% \end{array}$$

c) \$5197.69

$$FV = PV (1+i)^n$$

$$15200 = PV (1.0265)^{16}$$

$$PV = 10002.31$$

interest earn

$$= FV - PV$$

$$= 5197.69$$

d) \$10 002.31

C

7. Brahmi is investing \$16 000 that she would like to grow to at least \$100 000 by the time she retires in 50 years. What annual interest rate, compounded annually, will provide this?

a) 3.37%

b) 3.73%

c) 5.70%

d) 12.50%

$$\begin{aligned} FV &= PV (1+i)^n \\ \therefore 100000 &= 16000(1+i)^{50} \\ \sqrt[50]{62.5} &= \sqrt[50]{(1+i)^{50}} \\ 1.0373 &= 1+i \end{aligned}$$

$$0.0373 = i$$

$$i = 3.73\%$$

8. Fill in the TVM Solver screens.

(3 marks each = 3 marks)

How much money will you have in four years if you invest \$300 today in an account that has an annual interest rate of 1.2% compounded semi-annually?

N =	4
I% =	0.6
PV =	-300
PMT =	0
FV =	
P/Y =	0
C/Y =	0
PMT:END BEGIN	

1.0