

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 $\times 8 = 16$)

APP
7.8 / 10

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

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

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

=

C

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

$$\frac{3.6\%}{12} = 0.3\% = 48$$

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

$$= 3000(1.003)^{48}$$

D

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

$$\frac{5 \times 12}{12} = 60$$

$$\frac{6\%}{12} = 0.005$$

simple

$$= 12350$$

compound

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

$$= 12814.076$$

B

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

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

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

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

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

$$0.477 = 0.02448566n$$

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

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 b) \$5453.00 c) \$5868.22 d) \$8264.42

$$4 \times 4 = 16$$

$$\frac{8.4\%}{4} = 2.1\% = 0.021$$

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

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

$$PV = 4249.96$$

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 b) \$5144.20 c) \$5197.69 d) \$10 002.31

$$8 \times 2 = 16$$

$$\frac{5.3\%}{2}$$

$$= 2.65\%$$

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

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

$$PV = 10002.31$$

interest earned

$$= FV - PV$$

$$= 5197.69$$

C

7. Brahmi is investing \$16 000 that he 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%

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

$$100000 = 16000(1+i)^{50}$$

$$\sqrt[50]{6.25} = \sqrt[50]{(1+i)^{50}}$$

$$1.0373 = 1+i$$

$$0.0373 = i$$

$$i = 3.73\%$$

B

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 =	2
C/Y =	2
PMT:	BEGIN

1.0