

CHAPTER 4 (check point 5).

1. use simple interest to find the ending balance.

a). RM 34,100 at 4% for 3 years.

$$I = \frac{PRT}{100}$$

$$= \frac{34100 \times 4 \times 3}{100}$$

$$= \frac{409200}{100}$$

$$= 4092$$

$$= 34100 + 4092$$

$$= 38192$$

$$\text{total amount} = \text{RM } 38192$$

c). RM 4000 at 3% for 4 years.

$$I = \frac{PRT}{100}$$

$$= \frac{4000 \times 3 \times 4}{100}$$

$$= \frac{48000}{100}$$

$$= 480$$

$$= 4000 + 480$$

$$= 4480$$

$$\text{total amount} = \text{RM } 4480$$

b). RM 2,300 at 7% for 9 years.

$$I = \frac{PRT}{100}$$

$$= \frac{2300 \times 7 \times 9}{100}$$

$$= \frac{144900}{100}$$

$$= 1449$$

$$= 2300 + 1449$$

$$= 3749$$

$$\text{total amount} = \text{RM } 3749$$

Question only
asked for
interest

2. Find the total value of the investment after the time given.

a). RM1,500 at 7% compounded

annually for 3 years.

$$A = P(1+r)^t$$

$$= 1500(1+0.07)^3$$

$$= 1837.56$$

1. Year 1: $1500 \times 7\% = 105$

2. Year 2: $1605 \times 7\% = 112.35$

3. Year 3: $1717.35 \times 7\% = 120.21$

$$= 337.56 + 1500$$

$$= \text{RM } 1837.56$$

Try to use formula

b). RM55,000 at 16% compounded

annually for 2 years.

$$A = P(1+r)^t$$

$$= 55000(1+0.16)^2$$

$$= 74008$$

1. Year 1: $55000 \times 16\% = 8800$

2. Year 2: $63800 \times 16\% = 10208$

$$= 19008 + 55000$$

$$= \text{RM } 74008$$

c). RM12,700 at 8.8% compounded

annually for 2 years.

1. Year 1: $12700 \times 8.8\% = 1117.6$

2. Year 2: $13817.6 \times 8.8\% = 1215.95$

$$= 2333.55 + 12700$$

$$= \text{RM } 15033.55$$

$$A = P(1+r)^t$$

$$= 12700(1+0.088)^2$$

$$= 15033.55$$

3. solve the following questions. use the answers provided for checking.

a). you wish to receive an annuity of RM800 each year for 5 years. the annual interest rate is 10%. what is the present value of the annuity?

[Answer: RM3082.63]

$$P = \text{RM}800$$

$$R = 10\% / 0.1$$

$$n = 5 \text{ year}$$

$$PV = P \times \frac{1 - (1 + R)^{-n}}{R}$$

$$= 800 \times \frac{1 - (1 + 0.1)^{-5}}{0.1}$$

$$= 800 \times \frac{1 - 0.6209213231}{0.1}$$

$$= 800 \times \frac{0.3790786769}{0.1}$$

$$= 800 \times 3.790786769$$

$$= \text{RM}3082.63$$

7973.73

period in months

b). You wish to receive an annuity of RM300 a month for 6 years. The annual interest rate is 0.9%. What is the present value of the annuity?

[Answer: RM15,846.35]

$$P = \text{RM}300$$

$$R = 0.9\% / 0.009$$

$$n = 6 \text{ year} / 72 \text{ month}$$

$$PV = P \times \frac{1 - (1 + R)^{-n}}{R}$$

$$= 300 \times \frac{1 - (1 + 0.009)^{-72}}{0.009}$$

$$= 300 \times \frac{1 - (1.009)^{-72}}{0.009}$$

$$= 300 \times \frac{1 - 0.5246093552}{0.009}$$

$$= 300 \times \frac{0.4753906448}{0.009}$$

$$= 300 \times 52.82118276$$

$$= \text{RM}15846.35$$

4. Answer the following questions:

- a). A bank offers a simple interest rate of 8% per annum. Aliff deposits RM8200 in the bank. Calculate the interest he will receive after 3 years.

$$I = \frac{PRT}{100}$$

$$= \frac{8200 \times 8 \times 3}{100}$$

$$= \frac{76800}{100}$$

$$= 768$$

$$= 8200 + 768$$

$$\text{Total amount} = \text{RM } 8968$$

Only interest

- b). RM7500 is deposited into a bank account by Dani with the annual interest rate of 6% and compounded once a year. Calculate the amount he will have after 3 years.

$$P = \text{RM } 7500$$

$$R = 6\% / 0.06$$

$$n = 3 \text{ year}$$

$$A = P(1+r)^t$$

$$= 7500(1+0.06)^3$$

$$= 7950$$

$$PV = P \times \frac{1 - (1+R)^{-n}}{R}$$

$$= 7500 \times \frac{1 - 0.244140625}{0.06}$$

$$= 7500 \times 0.755859375$$

$$= 7500 \times 1.259765625$$

$$\text{Total amount} = \text{RM } 9448.24$$

this is formula for annuity