Fully-worked Solutions

Practice 3

Formative Practice

1 $20\,000 \times \frac{r}{100} \times t = 4\,000$

$200 \times r \times t = 4\,000$

$rt = 20$

$\therefore r = 5, t = 4$

Answer: **D**

2

Savings and investments

(a) Types of savings

- Saving accounts
- Current accounts
- Fixed deposit accounts

(b) Types of investments

- Properties
- Unit trusts
- Shares

3 (a) $I = \text{RM}780 \times 0.02 \times 3$

$= \text{RM}46.80$

(b) $I = \text{RM}1\,560 \times 0.1 \times \frac{6}{12}$

$= \text{RM}78$

4 (a) $3\,160 \times \frac{r}{100} \times 5 = 1\,264$

$158r = 1\,264$

$r = 8$

Simple interest rate is 8%.

(b) $9\,000 \times 0.06 \times t = 2\,340$

$540 \times t = 2\,340$

$t = 4\frac{1}{3}$ years

$= 4$ years 4 months

(c) $P \times 0.09 \times \frac{15}{12} = 1\,575$

$P \times 0.1125 = 1\,575$

$P = 14\,000$

Sum of money deposited is RM14 000.

5 (a) Total saving

$= \text{RM}2\,000(1 + 0.04 \times 2)$

$= \text{RM}2\,000(1.08)$

$= \text{RM}2\,160$

(b) Total saving

$= \text{RM}2\,000(1 + 0.04 \times 5)$

$= \text{RM}2\,000(1.2)$

$= \text{RM}2\,400$

6 (a) (i) Total saving

$= P(1 + rt)$

$= \text{RM}5\,000(1 + 0.03 \times 4)$

$= \text{RM}5\,000(1.12)$

$= \text{RM}5\,600$

(ii) Total saving

$= \text{RM}5\,000(1 + 0.12 \times 4)$

$= \text{RM}5\,000(1.48)$

$= \text{RM}7\,400$

(iii) Total saving

$= \text{RM}5\,000(1 + 0.15 \times 4)$

$= \text{RM}5\,000(1.6)$

$= \text{RM}8\,000$

(b) (i) Total savings increases with the interest rate.

7 (a) (i) Total sum of money received by cooperative A

$= \text{RM}3\,000(1 + 0.06 \times 4)$

$= \text{RM}3\,000(1.24)$

$= \text{RM}3\,720$

(ii) Total sum of money received by cooperative B

$= \text{RM}3\,000\left(1 + \frac{0.06}{1}\right)^{1 \times 4}$

$= \text{RM}3\,000(1.06)^4$

$= \text{RM}3\,787.40$

(b) (i) Saving in cooperative B gives higher return of saving.

(ii) Difference return of savings between cooperatives A and B is RM67.40.

8 (a) Matured value

$= \text{RM}800\left(1 + \frac{0.04}{1}\right)^{1 \times 5}$

$= \text{RM}973.32$

Compound interest

$= \text{RM}(973.32 - 800)$

$= \text{RM}173.32$

(b) Matured value

$= \text{RM}1\,500\left(1 + \frac{0.08}{2}\right)^{2 \times 3}$

$= \text{RM}1\,897.98$

Compound interest

$= \text{RM}(1\,897.98 - 1\,500)$

$= \text{RM}397.98$

(c) Matured value

$= \text{RM1 200}\left(1 + \frac{0.1}{4}\right)^{2\frac{1}{4} \times 4}$

$= \text{RM1 498.64}$

Compound interest

$= \text{RM}(1\,498.64 - 1\,200)$

$= \text{RM298.64}$

(d) Matured value

$= \text{RM4 200}\left(1 + \frac{0.12}{2}\right)^{12 \times 5}$

$= \text{RM7 630.13}$

Compound interest

$= \text{RM}(7\,630.13 - 4\,200)$

$= \text{RM3 430.13}$

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

(i) $MV = \text{RM1 650}\left(1 + \frac{0.09}{1}\right)^{1 \times 3}$

$= \text{RM1 650}(1.09)^3$

$= \text{RM2 136.80}$

(ii) $MV = \text{RM1 650}\left(1 + \frac{0.09}{2}\right)^{2 \times 3}$

$= \text{RM1 650}(1.045)^6$

$= \text{RM2 148.73}$

(iii) $MV = \text{RM1 650}\left(1 + \frac{0.09}{4}\right)^{4 \times 3}$

$= \text{RM1 650}(1.0225)^{12}$

$= \text{RM2 154.98}$

(b) (i) The future value of the deposit increases with the compounding frequency. ✓

10 (a) (i) $MV = \text{RM250}\left(1 + \frac{0.01}{4}\right)^{4 \times 10}$

$= \text{RM250}(1.0025)^{40}$

$= \text{RM276.26}$

(ii) $MV = \text{RM250}\left(1 + \frac{0.04}{4}\right)^{4 \times 10}$

$= \text{RM250}(1.01)^{40}$

$= \text{RM372.22}$

(iii) $MV = \text{RM250}\left(1 + \frac{0.1}{4}\right)^{4 \times 10}$

$= \text{RM250}(1.025)^{40}$

$= \text{RM671.27}$

(iv) $MV = \text{RM250}\left(1 + \frac{0.2}{4}\right)^{4 \times 10}$

$= \text{RM250}(1.05)^{40}$

$= \text{RM1 760.00}$

	Interest rate	Matured value (RM)
(i)	1%	276.26
(ii)	4%	372.22
(iii)	10%	671.27
(iv)	20%	1 760.00

(b) The matured value for the deposit of RM250 for 10 years increases when the interest rate increases.

11 (a) $\text{ROI} = \frac{\text{RM1 500}}{\text{RM5 000}} \times 100\%$

$= 30\%$

(b) $\text{ROI} = \frac{\text{RM10 000} - \text{RM8 000}}{\text{RM8 000}} \times 100\%$

$= \frac{\text{RM2 000}}{\text{RM8 000}} \times 100\%$

$= 25\%$

(c) $\text{ROI} = \frac{\text{RM1 440}}{\text{RM7 200}} \times 100\%$

$= 20\%$

(d) $\text{ROI} = \frac{\text{RM4 800}}{\text{RM12 000}} \times 100\%$

$= 40\%$

12 (a) (i) $\text{ROI} = \frac{\text{RM30 000} - \text{RM25 000}}{\text{RM25 000}} \times 100\%$

$= \frac{\text{RM5 000}}{\text{RM25 000}} \times 100\%$

$= 20\%$

(ii) $\text{ROI} = \frac{\text{RM37 500} - \text{RM25 000}}{\text{RM25 000}} \times 100\%$

$= \frac{\text{RM12 500}}{\text{RM25 000}} \times 100\%$

$= 50\%$

(b) The factor that influences the return of investment is time.

A shorter time has higher risk.

13 (a) Profit on the first year

$= \text{RM10 000} \times \frac{8}{100}$

$= \text{RM800}$

Total return on the first year

$= \text{RM10 000} + \text{RM800}$

$= \text{RM10 800}$

(b) Profit on the second year

$= \text{RM10 800} \times \frac{12}{100}$

$= \text{RM1 296}$

Total return on the second year

$= \text{RM10 800} + \text{RM1 296}$

$= \text{RM12 096}$

(c) Return of investment in two years

$= \frac{\text{RM}(12\,096 - 10\,000)}{\text{RM10 000}} \times 100\%$

$= 20.96\%$

14 (a) Capital gain

$= \text{RM}(300\,000 - 20\,000 - 1\,700 \times 12 - 12\,000 - 500 - 220\,650)$

$= \text{RM26 450}$

(b) Total return
= RM26 450 + RM900 × 12
= RM37 250

$$\text{ROI} = \frac{\text{RM37 250}}{\text{RM250 000}} \times 100\%$$
$$= 14.9\%$$

15 (a) Capital gain
= RM(130 000 − 2 000 − 100 000)
= RM28 000
Total return
= RM28 000

(b) $\text{ROI} = \frac{\text{RM28 000}}{\text{RM100 000}} \times 100\%$
$= 28\%$

16 (a) The potential risk level of investment for saving account is low.

(b) The potential risk level of investment for shares is high.

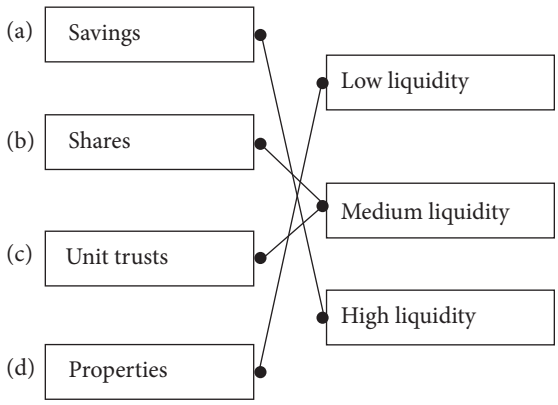
(c) The potential risk level of investment for unit trusts is medium.

(d) The potential risk level of investment for properties is medium.

17 (a) Situation I
Return
= RM4 500 + RM4 500 × 0.03 × 1
= RM4 500 + RM135
= RM4 635
Situation II
Return
= 1 000 × RM4.80 + 1 000 × RM0.10
= RM4 800 + RM100
= RM4 900

(b) Investment *ABX*, higher return.

18



19 (a) Average cost per share

$$= \frac{200 \times \text{RM10.00} + 400 \times \text{RM12.85}}{200 + 400}$$
$$= \frac{\text{RM2 000} + \text{RM5 140}}{600}$$
$$= \frac{\text{RM7 140}}{600}$$
$= \text{RM11.90}$

(b) Average cost per share

$$= \frac{3\,000 \times \text{RM1.40} + 5\,000 \times \text{RM2.00} + 7\,000 \times \text{RM1.60}}{3\,000 + 5\,000 + 7\,000}$$
$$= \frac{\text{RM4 200} + \text{RM10 000} + \text{RM11 200}}{15\,000}$$
$$= \frac{\text{RM25 400}}{15\,000}$$
$= \text{RM1.69}$

20 (a) (i) Buying cost
= RM0.48 × 10 000
= RM4 800

(ii) Buying cost
= RM0.53 × 40 000
= RM21 200

(iii) Buying cost
= RM0.46 × 20 000
= RM9 200

(iv) Buying cost
= RM0.55 × 30 000
= RM16 500

(b) (i) Average buying cost per share

$$= \frac{\text{RM4 800} + \text{RM21 200} + \text{RM9 200} + \text{RM16 500}}{10\,000 + 40\,000 + 20\,000 + 30\,000}$$
$$= \frac{\text{RM51 700}}{100\,000}$$
$= \text{RM0.517}$
= 51.7 sen

(ii) Profit obtained
= (RM0.58 − RM0.517) × 80 000
= RM5 040

21 Total saving after 3 years

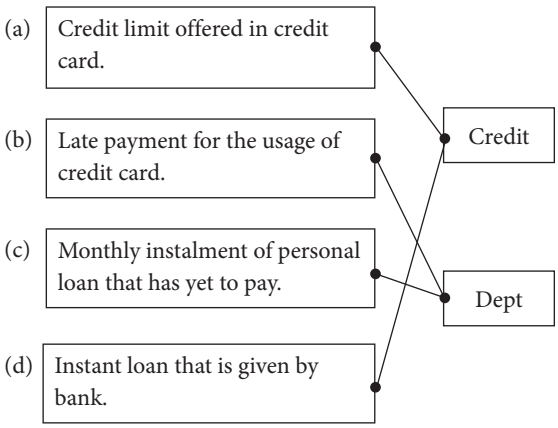
$$= \text{RM20 000}\left(1 + \frac{0.06}{12}\right)^{12 \times 3}$$
$$= \text{RM20 000}(1.005)^{36}$$
$= \text{RM23 933.61}$
Sum of money left
= RM23 933.61 − RM15 000
= RM8 933.61

22 Never spend more than the credit limit set.
Answer: **B**

23 (a) Debt is the money that is borrowed but part or its entire including the interest imposed has not been settled.

(b) Credit is the money that is eligible to borrow to be returned together with interest by instalment or lump sum in a stipulated period.

24



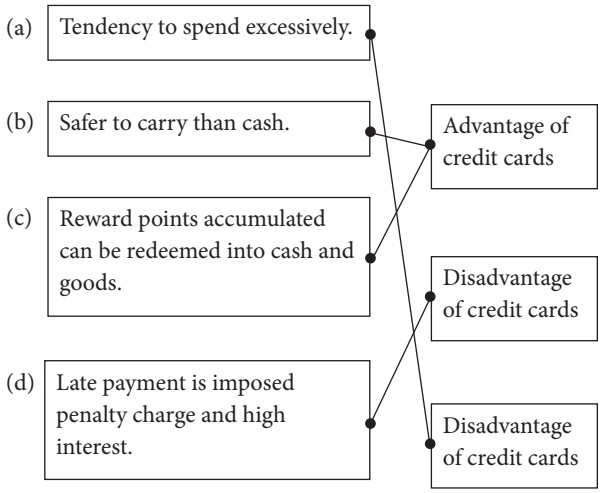
25 (a) Save from young to reduce the need of borrowing. ✓

(b) Borrow to pay debt of loan that has yet to settle. ✓

(c) Invest in shares or unit trusts that give attractive return in a period of time. ✓

(d) Shorten the repayment of debt according to financial capability. ✓

26



27 (a) Charged incurred
= 0.0125 × RM425
= RM5.31

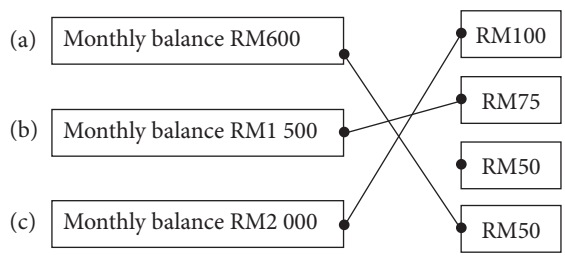
(b) Minimum payment
= 0.05 × RM(425 + 5.31 + 684)
= 0.05 × RM1 114.31
= RM55.72

28 (a) Hotel payment
= RM350.00 × 3.05
= RM1 067.50
Restaurant payment
= RM485.30 × 3.05
= RM1 480.17
Total payment for hotel and restaurant
= RM1 067.50 + RM 1 480.17
= RM2 547.67
Administrative charge
= 0.01 × RM2 547.67
= RM25.48

Transaction	Amount of foreign currency (S$)	Amount of local currency (RM)
Petrol		76.45
TNB		112.20
Fesko		205.50
Hotel	350.00	(i) 1 067.50
Restaurant	485.30	(ii) 1 480.17
Administrative charge (1%)		(iii) 25.48

(b) Total amount in statement
= RM(76.45 + 112.20 + 205.50 + 2 547.67 + 25.48)
= RM2 967.30
Minimum payment
= 0.05 × RM2 967.30
= RM148.37

29



30 (a) Credit card balance
= RM2 000
<u>Situation I</u>
Interest for 1st month
= (RM2 000 – RM100) × 0.0125
= RM1 900 × 0.0125
= RM23.75
Debt balance for 1st month
= RM1 900 + RM23.75
= RM1 923.75
Interest for 2nd month
= (RM1 923.75 – RM100) × 0.0125
= RM1 823.75 × 0.0125
= RM22.80
Debt balance for 2nd month
= RM1 823.75 + RM22.80
= RM1 846.55

Interest for 3rd month
= (RM1 846.55 – RM100) × 0.0125
= RM1 746.55 × 0.0125
= RM21.83
Debt balance for 3rd month
= RM1 746.55 + RM21.83
= RM1 768.38
Interest for 4th month
= (RM1 768.38 – RM100) × 0.0125
= RM1 668.38 × 0.0125
= RM20.85
Debt balance for 4th month
= RM1 668.38 + RM20.85
= RM1 689.23

Situation II
Interest for 1st month
= (RM2 000 – RM500) × 0.0125
= RM1 500 × 0.0125
= RM18.75
Debt balance for 1st month
= RM1 500 + RM18.75
= RM1 518.75
Interest for 2nd month
= (RM1 518.75 – RM500) × 0.0125
= RM1 018.75 × 0.0125
= RM12.73
Debt balance for 2nd month
= RM1 018.75 + RM12.73
= RM1 031.48
Interest for 3rd month
= (RM1 031.48 – RM500) × 0.0125
= RM531.48 × 0.0125
= RM6.64
Debt balance for 3rd month
= RM531.48 + RM6.64
= RM538.12
Interest for 4th month
= (RM538.12 – RM500) × 0.0125
= RM38.12 × 0.0125
= RM0.48
Debt balance for 4th month
= RM38.12 + RM0.48
= RM38.60

(b) Debt balance of Hasni is fully paid in the fourth month.
Extra amount that is required to pay is RM38.60.

(c) Situation 2 is more economical.
Total interest paid in situation I
= RM(23.75 + 22.80 + 21.83 + 20.85)
= RM89.23
Total interest paid in situation II
= RM(18.75 + 12.73 + 6.64 + 0.48)
= RM38.60
Difference of interest between the two situations
= RM89.23 – RM38.60
= RM50.63

31 (a) (i) Total repayment of loan
= RM2 650(1 + 0.02 × 3)
= RM2 650 × 1.06
= RM2 809

(ii) Instalment payment
$= \frac{\text{RM2 809}}{3 \times 12}$
$= \frac{\text{RM2 809}}{36}$
= RM78.03

(b) (i) Total repayment of loan
$= \text{RM4 320}\left(1 + 0.0025 \times 2\frac{1}{2}\right)$
= RM4 320 × 1.0625
= RM4 590

(ii) Instalment payment
$= \frac{\text{RM4 590}}{2\frac{1}{2} \times 12}$
$= \frac{\text{RM4 590}}{30}$
= RM153

Summative Practice

1 $P \times 0.05 \times 1 = 20\,000 \times 0.04 \times 1$
$0.05P = 800$
$P = \frac{800}{0.05}$
$= 16\,000$
Answer: **D**

2 A
I = RM1 200 × 0.04 × 3
= RM144

B
$I = \text{RM900} \times 0.06 \times \frac{18}{12}$
= RM81

C
I = RM1 500 × 0.05 × 2
= RM150

D
$I = \text{RM1 000} \times 0.08 \times \frac{33}{12}$
= RM220

Answer: **B**

3 $MV = P\left(1 + \frac{r}{n}\right)^{nt}$
$= \text{RM50 000}\left(1 + \frac{0.03}{1}\right)^{1 \times 3}$
$= \text{RM50 000}(0.03)^3$
= RM54 636.35

Alternative method

Total saving at the end of one year
$= P(1 + rt)$
$= \text{RM}50\,000(1 + 0.03 \times 1)$
$= \text{RM}50\,000(1.03)$
$= \text{RM}51\,500$

Total saving at the end of two years
$= \text{RM}51\,500(1 + 0.03 \times 1)$
$= \text{RM}51\,500(1.03)$
$= \text{RM}53\,045$

Total saving at the end of three years
$= \text{RM}53\,045(1 + 0.03 \times 1)$
$= \text{RM}53\,045(1.03)$
$= \text{RM}54\,636.35$

Answer: **D**

4 $MV = P\left(1 + \frac{r}{n}\right)^{nt}$

$= \text{RM}15\,000\left(1 + \frac{0.06}{4}\right)^{4 \times 3}$

$= \text{RM}15\,000(1.015)^{12}$

$= \text{RM}17\,934.27$

Compound interest
$= \text{RM}17\,934.27 - \text{RM}15\,000$
$= \text{RM}2\,934.27$

Simple interest
$= \text{RM}15\,000 \times 0.06 \times 3$
$= \text{RM}2\,700$

Difference in interest
$= \text{RM}2\,934.27 - \text{RM}2\,700$
$= \text{RM}234.27$

Answer: **D**

5 Initial capital
$= \text{RM}12\,000$

Capital gain
$= \text{RM}14\,520 - \text{RM}12\,000$
$= \text{RM}2\,520$

Total return
$= \text{RM}2\,520 + \text{RM}480$
$= \text{RM}3\,000$

$\text{ROI} = \frac{\text{RM}3\,000}{\text{RM}12\,000} \times 100\%$

$= 25\%$

Answer: **D**

6 (a) (i) Buying cost
$= \text{RM}2.40 \times 5\,000$
$= \text{RM}12\,000$

(ii) Buying cost
$= \text{RM}1.80 \times 3\,000$
$= \text{RM}5\,400$

(iii) Buying cost
$= \text{RM}2.50 \times 2\,000$
$= \text{RM}5\,000$

(b) Average cost per share

$= \frac{\text{RM}12\,000 + \text{RM}5\,400 + \text{RM}5\,000}{5\,000 + 3\,000 + 2\,000}$

$= \frac{\text{RM}22\,400}{10\,000}$

$= \text{RM}2.24$

(c) The benefit of the weighted cost strategy is to reduce cost per share.

7 (a) Scheme *A*:
Loan
$= \text{RM}5\,500 - \text{RM}500$
$= \text{RM}5\,000$

Total repayment
$= \text{RM}158 \times 36$
$= \text{RM}5\,688$

Interest incurred
$= \text{RM}5\,688 - \text{RM}5\,000$
$= \text{RM}688$

Scheme *B*:
Loan
$= \text{RM}5\,500 - 0.12 \times \text{RM}5\,500$
$= \text{RM}4\,840$

Total repayment
$= \text{RM}120 \times 48$
$= \text{RM}5\,760$

Interest incurred
$= \text{RM}5\,760 - \text{RM}4\,840$
$= \text{RM}920$

Difference in interest incurred
$= \text{RM}920 - \text{RM}688$
$= \text{RM}232$

(b) Scheme *A*:

$688 = 5\,000 \times \frac{r}{100} \times 3$

$r = 4.59\%$

Scheme *B*:

$920 = 5\,760 \times \frac{r}{100} \times 4$

$r = 4.75\%$

Scheme A offered the lower interest rate.

8 (a) Price of smartphone
$= \text{RM}2\,045.00 \times 4.12$
$= \text{RM}8\,425.40$

Price of handbag
$= \text{RM}860.00 \times 4.12$
$= \text{RM}2\,447.42$

Total foreign online purchases
$= \text{RM}8\,425.40 + \text{RM}2\,447.42$
$= \text{RM}11\,968.60$

$\frac{k}{100} \times 11\,968.60 = 119.69$

$k \times 119.686 = 119.69$

$k = 1$

(b) Total amount in statement
$= \text{RM}(250.00 + 940.00 + 478.75 + 11\,968.60 + 119\,69)$
$= \text{RM}13\,757.04$

(c) Amount of interest shown in the statement in the subsequent month
$= (\text{RM}13\,757.04 - \text{RM}5\,000) \times 0.0125 = \text{RM}109.46$