

## التمرين 1:

$$\begin{aligned} PV_1 &= 1000 / (1.1)^1 = 909.09 \\ PV_2 &= 2000 / (1.1)^2 = 1652.89 \\ PV_3 &= 3000 / (1.1)^3 = 2253.94 \\ PV &= PV_1 + PV_2 + PV_3 = 909.09 + 1652.89 + 2253.94 = 4815.93 \end{aligned}$$

## التمرين 2:

$$\begin{aligned} \text{Year 1 CF: } FV_5 &= 100(1.07)^4 = 131.08; PV_0 &= 100 / 1.07 = 93.46; FV_3 &= 100(1.07)^2 = 114.49 \\ \text{Year 2 CF: } FV_5 &= 200(1.07)^3 = 245.01; PV_0 &= 200 / (1.07)^2 = 174.69; FV_3 &= 200(1.07) = 214 \\ \text{Year 3 CF: } FV_5 &= 200(1.07)^2 = 228.98; PV_0 &= 200 / (1.07)^3 = 163.26; FV_3 &= 200 \\ \text{Year 4 CF: } FV_5 &= 300(1.07) = 321; PV_0 &= 300 / (1.07)^4 = 228.87; PV_3 &= 300 / 1.07 = 280.37 \\ \text{Year 5 CF: } FV_5 &= 300; PV_0 &= 300 / (1.07)^5 = 213.90; PV_3 &= 300 / (1.07)^2 = 262.03 \end{aligned}$$

1- قيمة التدفقات النقدية في السنة الخامسة

$$\text{Value at year 5} = 131.08 + 245.01 + 228.98 + 321 + 300 = 1226.07$$

2- قيمة التدفقات النقدية اليوم

$$\text{Present value today} = 93.46 + 174.69 + 163.26 + 228.87 + 213.90 = 874.18$$

3- قيمة التدفقات النقدية في السنة الثالثة

$$\text{Value at year 3} = 114.49 + 214 + 200 + 280.37 + 262.03 = 1070.89$$

## التمرين 3:

$$P = 64(\{1 - [1/(1 + 0.075)^{25}] \} / 0.075) + 1000[1 / (1 + 0.075)^{25}] = 877.38$$

## التمرين 4:

$$\begin{aligned} P &= 70(\{1 - [1/(1 + 0.05)^5] \} / 0.05) + 1000[1 / (1 + 0.05)^5] = 1086.54 \\ P &= 70(\{1 - [1/(1 + 0.07)^5] \} / 0.07) + 1000[1 / (1 + 0.07)^5] = 1000 \\ P &= 70(\{1 - [1/(1 + 0.09)^5] \} / 0.09) + 1000[1 / (1 + 0.09)^5] = 922.14 \end{aligned}$$

## التمرين 5:

$$\% \text{ سنويا} = <\!> \frac{\% 10 / 2}{\text{معدل الخصم بتراتم سداسي}} = \% 5$$

$$\text{عدد الفترات} = 6 = 3 \times 2$$

$$P = 60(\{1 - [1/(1 + 0.05)^6] \} / 0.05) + 1500[1 / (1 + 0.05)^6] = 1423.86$$

## التمرين 6:

$$\begin{aligned} \% 5.2 / 2 &= \% 2.6 / \% 3.45 = \% 6.9 \\ \text{عدد الفترات} &= (14 - 1) \times 2 = 26 \end{aligned}$$

$$\begin{aligned} P &= FV \times 0.0345 (\{1 - [1/(1 + 0.026)^{26}] \} / 0.026) + FV[1 / (1 + 0.026)^{26}] && / \quad FV = 1000 \\ P &= 34.50 (\{1 - [1/(1 + 0.026)^{26}] \} / 0.026) + 1000 [1 / (1 + 0.026)^{26}] = 1159.19 \end{aligned}$$

## التمرين 7:

$$\begin{aligned} PV_1 &= 140 / (1 + 0.11)^1 = 126.13 & PV_3 &= 160 / (1 + 0.11)^3 = 116.99 & PV_5 &= 180 / (1 + 0.11)^5 = 106.82 \\ PV_2 &= 140 / (1 + 0.11)^2 = 113.63 & PV_4 &= 160 / (1 + 0.11)^4 = 105.4 & PV_6 &= 2180 / (1 + 0.11)^6 = 1165.51 \\ P &= PV_1 + PV_2 + PV_3 + PV_4 + PV_5 + PV_6 = 1734.49 \end{aligned}$$

## التمرين 8:

$$P_i = 1100(\{1 - [1/(1 + 0.03)^{16}] \} / 0.03) [1 / (1 + 0.03)^{12}] + 1400(\{1 - [1/(1 + 0.03)^{12}] \} / 0.03) [1 / (1 + 0.03)^{28}] + 20000 [1 / (1 + 0.03)^{40}]$$

$$P_i = 21913.18$$

$$P_{\omega} = 20000[1 / (1 + 0.03)^{40}] = 6131.14$$