

## Cálculo e Instrumentos Financeiros

Tópicos de Resolução do Exame de Época de Recurso, 2º s 2010/11

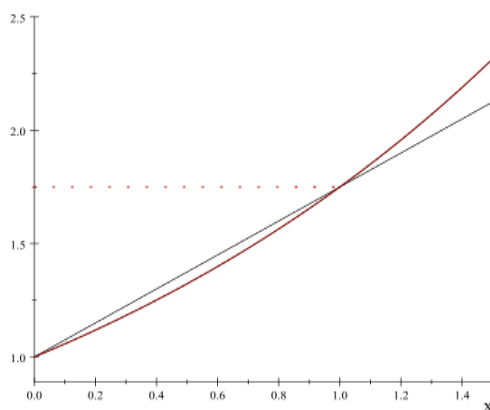
### 1ª Parte:

1-10. Grelha de respostas correctas:

|    |    |    |    |    |    |    |    |    |     |
|----|----|----|----|----|----|----|----|----|-----|
| 1. | 2. | 3. | 4. | 5. | 6. | 7. | 8. | 9. | 10. |
| b) | d) | b) | d) | a) | c) | a) | b) | b) | c)  |

11.

|      |     |     |     |     |
|------|-----|-----|-----|-----|
| 0    | 1   | 2   | 3   | 4   |
| 1000 | -   | -   | -   | -   |
| -    | -   | -   | -   | 100 |
| -    | 200 | 200 | 200 | -   |
|      | 50  | 50  | 50  | 50  |



12.

### 2ª Parte:

1. a) Prazo:  $n = 150$  dias.

$$PLD = 204898.Vn = PLD + DB; DB = Vn \left( \frac{152}{365} \cdot 0.065 + 0.0025 \right) (1.045) + 3$$

$$Vn = 211434.12\text{€}$$

b)

$$Vn = PLD (1 + TAEG)^{152/365}$$

$$TAEG = 0.0783$$

2.

$$C_n = 42251 (1.07) (1.055) (1.045)^{n-2} = 48756.37$$

$$n \simeq 2.5 \text{ anos}$$

3. a)

| $k$ | $C_{k-1}$  | $j_k$     | $N_k$  | $m_k$     | $P_k$     | $M_k$      |
|-----|------------|-----------|--------|-----------|-----------|------------|
| 1   | 2700000.00 | 135000.00 | 0      | 0.00      | 135000.00 | 0.00       |
| 2   | 2700000.00 | 135000.00 | 120000 | 540000.00 | 675000.00 | 540000.00  |
| 3   | 2160000.00 | 108000.00 | 120000 | 540000.00 | 648000.00 | 1080000.00 |

b)

$$4(1+x)^2 = 4.5(0.05)(1+x) + 4.5(1.05)$$

4. a)

$$\begin{aligned} VA &= 30(1.05)^3(1.045)^3 \left[ (1.06)^4 + s_{\overline{4}|6\%} \right] + 50s_{\overline{3}|5\%}(1.045)^3 + 70(1.045)[1 + (1.045)] \\ &= 552873.23\text{€} \end{aligned}$$

b) Por exemplo,  $x$ :

$$VA = 552873.23 = 30(1+x)^{10} + 30s_{\overline{4}|}(1+x)^6 + 50s_{\overline{3}|}(1+x)^3 + 70s_{\overline{2}|}(1+x)$$