P144

(30) $P_5 = \sqrt{(a_1 \cdot a_5)^5}$

$1.024 = \sqrt{(1 \cdot a_5)^5} = \sqrt{(r^4)^5} = \sqrt{r^{20}} = r^{10}$

$a_5 = a_1 \cdot r^{n-1} = 1 \cdot r^4 = r^4$

$1.024 = r^{10}$ // $r = \sqrt[10]{1.024} = 2$

$\boxed{r = 2}$

P145

(31) $C_f = C_i \cdot \left(1 + \frac{r}{100}\right)^t = 200 \cdot \left(1 + \frac{2}{100}\right)^{10} =$

$= 200 \cdot \left(\frac{102}{100}\right)^{10} = 200 \cdot (1'02)^{10} = 200 \cdot 1'22 = \underline{243'80\ €}$

(32) a) $C_f = C_i \left(1 + \frac{r}{100}\right)^t = 0'5 \left(1 + \frac{5}{100}\right)^{100} = 0'5 \cdot \left(\frac{105}{100}\right)^{100} =$

$= 0'5 \cdot (1'05)^{100} = 0'5 \cdot 131'50 = \underline{65'75\ €}$

b) $C_f = C_i \left(1 + \frac{r}{100}\right)^t = 0'5 \cdot \left(1 + \frac{1}{100}\right)^{100} = 0'5 \cdot \left(\frac{101}{100}\right)^{100} =$

$= 0'5 \cdot 2'71 = \underline{1'35\ €}$

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(33) $C_f = C_i \left(1 + \frac{r}{100}\right)^t$ // $3.000 = C_i \left(1 + \frac{1}{100}\right)^{36} =$

$3.000 = C_i \cdot (1'01)^{36} = C_i \cdot 1'43$

$C_i = \frac{3.000}{1'43} = 2.097'90$ €

(34) $C_f = C_i \left(1 + \frac{r}{100}\right)^t$ // $133'10 = C_i \left(1 + \frac{10}{100}\right)^3 =$

$= C_i \cdot (1'1)^3 = C_i \cdot 1'331$

$133'10 = C_i \cdot 1'331$

$C_i = \frac{133'10}{1'331} = 100$ €

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(42 b) $a_n = \frac{n+3}{n}$

(43a) * $a_1 = 1$
* $a_2 = 3$
} $a_n = a_{n-2} - a_{n-1}$

$a_3 = a_1 - a_2 = 1 - 3 = -2$

* $a_3 = -2$

$a_4 = a_2 - a_3 = 3 - (-2) = 5$

* $a_4 = 5$

$a_5 = a_3 - a_4 = -2 - 5 = -7$

* $a_5 = -7$

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(47) 2, 4, 6, 8, 10

a) Si es p. aritmética

b) $a_n = a_1 + (n-1)\cdot d = 2 + (n-1)\cdot 2 =$

$= 2 + 2n - 2 = 2n$

$a_n = 2n$

c) $a_{30} = 2 \cdot 30 = 60$

$a_{30} = 60$

(52) $a_8 = 12$ // $a_{12} = 32$

$a_{12} = a_8 + (12-8)\cdot d$

$32 = 12 + (4)\cdot d$

$d = \frac{32-12}{4} = \frac{20}{4} = 5$

$d = 5$

$a_n = a_1 + (n-1) \cdot d$

$a_8 = a_1 + (8-1) \cdot d$

$12 = a_1 + 7 \cdot 5 = a_1 + 35$

$a_1 = 12 - 35 = -23$

$a_n = a_1 + (n-1)\cdot d = -23 + (n-1)\cdot 5 =$

$= -23 + 5n - 5 = 5n - 28$

$a_n = 5n - 28$

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(72a) $\frac{6}{3} = \frac{12}{6} = \frac{24}{12} = 2$ $\quad r = 2$

$a_n = a_1 \cdot r^{n-1} = 3 \cdot 2^{n-1} =$

$a_n = 3 \cdot 2^{n-1}$

(73) $a_1 = 4$; $a_2 = 3$

$a_2 = a_1 \cdot r \;//\; 3 = 4 \cdot r \;//\; r = \frac{3}{4}$

$a_n = a_1 \cdot r^{n-1} = 4 \cdot r^{n-1} \;//\; a_n = 4 \cdot \left(\frac{3}{4}\right)^{n-1}$

$a_{20} = 4 \cdot \left(\frac{3}{4}\right)^{19} = 4 \cdot 0'00423 = 0'01692$