(1) 1 = 0,25

2 = 0,25 · 4 = 1

3 = 4 · 1 = 4

4 = 4 · 4 = 16

5 = 10 · 4 = 64

6 = 64 · 4 = 256

(2) $a_n = a_{k+1} = a_{k+4}$

$an = a_2 = a_1 + 4$

$an = a_3 = a_2 + 4$ ....

an = 25, 29, 33, 37, 47, ...

(3) $\frac{2}{3} + a_2 - a_2 - \frac{1}{2} = \frac{1}{6}$

$\frac{1}{6} + a_3 - a_3 - \frac{1}{2} = -\frac{1}{3}$

$-\frac{1}{3} + a_4 - a_4 - \frac{1}{2} = -\frac{5}{6}$

$-\frac{5}{6} + a_5 - a_5 - \frac{1}{2} = -\frac{4}{3}$

$\frac{2}{3}, \frac{1}{6}, -\frac{1}{3}, -\frac{5}{6}, -\frac{4}{3}$

(4) $a_1 = 4, 4 = 3$

$a \cdot R_n - 1$

$a_1 = a \cdot S^{n-1}$

$a_1 = 12^{1-1} = 12$

$a_2 = 4,4^{1-2} = 1$

$a_2 = 12^1$

$a_2 = 12$

5 $\frac{3\times1-1}{1} = \frac{3-1}{1} = \frac{2}{1}$

$\frac{3\times2-1}{2} = \frac{6-1}{2} = \frac{5}{2}$

$\frac{3\times3-1}{3} = \frac{9-1}{3} = \frac{8}{3}$

$\frac{3\times4-1}{4} = \frac{12-1}{4} = \frac{11}{4}$

$\frac{3\times5-1}{5} = \frac{15-1}{5} = \frac{14}{5}$

$\frac{3\times6-1}{6} = \frac{18-1}{6} = \frac{17}{6}$

$\frac{3\times7-1}{7} = \frac{21-1}{7} = \frac{20}{7}$

$\frac{3\times8-1}{8} = \frac{24-1}{8} = \frac{23}{8}$

$\frac{3\times9-1}{9} = \frac{27-1}{9} = \frac{26}{9}$

$\frac{2}{1} + \frac{5}{2} + \frac{8}{3} + \frac{11}{4} + \frac{14}{5} + \frac{17}{6} + \frac{20}{7} + \frac{23}{8} + \frac{26}{9}$

$=$

$\frac{60911}{2520}$

(6) $\sum_{k=1}^{6} \frac{1}{2n}$

$\frac{1}{2\cdot1} = \frac{1}{2} = 0,5$

$\frac{1}{2\cdot2} = \frac{1}{4} = 0,25$

$\frac{1}{2\cdot3} = \frac{1}{6} = 0,16$

$\frac{1}{2\cdot4} = \frac{1}{8} = 0,125$

$\frac{1}{2\cdot5} = \frac{1}{10} = 0,1$

$\frac{1}{2\cdot6} = \frac{1}{12} = 0,083$

$0,5 + 0,25 + 0,16 + 0,125 + 0,1 + 0,083 = 1,22$

(7) $\sum_{n=1}^{5} \left(\frac{2}{7}\right)^{n-1}$

$Sn = a_1 \times \frac{1-r^5}{1-r}$

$S5 = 1 \times \frac{1-\left(\frac{2}{7}\right)^5}{1-\frac{2}{7}}$

$\frac{1-\left(\frac{2}{7}\right)^5}{\frac{5}{7}} = \frac{\left(1-\left(\frac{2}{7}\right)^5\right)\times 7}{5}$

$\frac{7\cdot 7\times\left(\frac{2}{7}\right)^5}{5} = \frac{7-7\times\frac{25}{75}}{5} = \frac{7-\frac{25}{74}}{5} = \frac{7-\frac{32}{74}}{5} = \frac{\frac{75-32}{74}}{5}$

$\frac{7^5-32}{5\times74} = \frac{16807-32}{5\times74} = \frac{16775}{5\times74} = \frac{3355}{74} = \frac{3355}{2407}$

8

$$\begin{array}{r} 6'950.050 \\ -\ 5'150.050 \\ \hline 1,800,000 \end{array}$$

R+A = D

(9)

$$S_n = \frac{1(4^n - 1)}{4 - 1} = 5.461$$

$$S_1 = \frac{1(4^1 - 1)}{4 - 1} = 1$$

$$S_2 = \frac{1(4^2 - 1)}{4 - 1} = 2,3$$

$$S_3 = \frac{1(4^3 - 1)}{4 - 1} = 21$$

$$S_4 = \frac{1(4^4 - 1)}{4 + 1} = 85$$

$$S_5 = \frac{1(4^5 - 1)}{4 + 1} = 341$$

$$S_6 = \frac{1(4^6 - 1)}{4 - 1} = 1.365$$

$$S_7 = \frac{1(4^7 - 1)}{4 - 1} = 5.461$$