

## Examen

1.

$$b_1 = 0,25$$

$$b_2 = 0,25 \cdot 4 = 1$$

$$b_3 = 1 \cdot 4 = 4$$

$$b_4 = 4 \cdot 4 = 16$$

$$b_5 = 16 \cdot 4 = 64$$

$$b_6 = 64 \cdot 4 = 256$$

2.

$$a_n = a_{k+1} = a_k + 4$$

$$a_n = a_2 = a_1 + 4$$

$$a_n = a_3 = a_2 + 4$$

$$a_n = 25, 29, 33, 37, 41, \dots$$

4.  $a_1 = 4, r = 3$

$$4 \cdot 3^{n-1}$$

$$n=1$$

5.  $\sum_{n=1}^9 \frac{3n-1}{n}$

$$\frac{3 \times 1 - 1}{1} = \frac{3 - 1}{1} = \frac{2}{1} = 2$$

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

$$\frac{3 \times 3 - 1}{3} = \frac{9 - 1}{3} = \frac{8}{3} = 2,6$$

$$\frac{3 \times 4 - 1}{4} = \frac{12 - 1}{4} = \frac{11}{4} = 2,75$$

$$\frac{3 \times 5 - 1}{5} = \frac{15 - 1}{5} = \frac{14}{5} = 2,8$$

$$\frac{3 \times 6 - 1}{6} = \frac{18 - 1}{6} = \frac{17}{6} = 2,83$$

$$\frac{3 \times 7 - 1}{7} = \frac{21 - 1}{7} = \frac{20}{7} = 2,857$$

$$\frac{3 \times 8 - 1}{8} = \frac{24 - 1}{8} = \frac{23}{8} = 2,875$$

$$\frac{3 \times 9 - 1}{9} = \frac{27 - 1}{9} = \frac{26}{9} = 2,8$$

$$\frac{60977}{2520}$$

$$68 \quad \sum_{n=1}^6 \frac{1}{2^n}$$

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

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

$$\frac{1}{2 \times 3} = \frac{1}{6} = 0,16$$

$$\frac{1}{2 \times 4} = \frac{1}{8} = 0,125$$

$$\frac{1}{2 \times 5} = \frac{1}{10} = 0,1$$

$$\frac{1}{2 \times 6} = \frac{1}{12} = 0,083$$

$$1,22$$

7.  $\sum_{n=1}^4 \left(\frac{2}{7}\right)^{n-1}$

$$1 + \frac{2}{7} + \frac{4}{49} + \frac{8}{343} + \frac{16}{2401} = \frac{3355}{2401}$$

8.

$$\begin{array}{r} 6.950.050 \\ - 5.150.050 \\ \hline 1.800.000 \end{array}$$

9.

$$S_n = \frac{a(4^n - 1)}{4 - 1} = 5,467$$