

DOMAĆI RAD:

1200. b)

$$S_n = 1 - \frac{1}{3} + \frac{1}{3} - \dots - \frac{(-1)^{n-1}}{3^{n-1}} \rightarrow S_n = a_1 \cdot \frac{1-q^n}{1-q} \rightarrow S_n = 1 \cdot \frac{1-(-\frac{1}{3})^n}{1-(-\frac{1}{3})} \rightarrow$$

$$a_1 = 1 \quad \rightarrow S_n = \frac{1-(-\frac{1}{3})^n}{\frac{3}{3}+\frac{1}{3}} \rightarrow S_n = \frac{1-(-\frac{1}{3})^n}{\frac{4}{3}} \rightarrow$$

$$q = -\frac{1}{3} \quad \rightarrow \boxed{S_n = \frac{3}{4} \cdot (1 - (-\frac{1}{3})^n)}$$

1206. a)

$$2 + 5 + 11 + \dots + (3 \cdot 2^{n-1} - 1) = S_n$$

$$(3 - 1) + (6 - 1) + (12 - 1) + \dots + (3 \cdot 2^{n-1} - 1) = S_n$$

$$(3 - 1) + (6 - 1) + (12 - 1) + (24 - 1) + (48 - 1) + (96 - 1) + \dots + (3 \cdot 2^{n-1} - 1) = S_n$$

$$\underbrace{(-1 - 1 - 1 - 1 - \dots - 1)}_{\text{n-jedinica}} + (3 + 6 + 12 + 24 + 48 + 96 + \dots + 3 \cdot 2^{n-1}) = S_n$$

$$a_1 = 3$$

$$q = 2$$

$$S_n = a_1 \cdot \frac{q^n - 1}{q - 1} \rightarrow S_n = -n + 3 \cdot \frac{2^n - 1}{2 - 1} \rightarrow \boxed{S_n = 3 \cdot (2^n - 1) - n}$$