1200. b) $Sn = 1 - \frac{1}{3} + \frac{1}{3^2} - \cdots + \frac{(-1)^{n-1}}{3^{n-1}}$

$a_1 = 1, q = -\frac{1}{3}$

$$S_n = a_1 \cdot \frac{1-q^n}{1-q} = 1 \cdot \frac{1-(-\frac{1}{3})^n}{1+\frac{1}{3}} = \frac{1-(-\frac{1}{3})^n}{\frac{4}{3}} = \frac{3\cdot(1-\left(-\frac{1}{3}\right)^n)}{4} = \frac{3}{4} \cdot (1 - \left(-\frac{1}{3}\right)^n)$$

1206. a) $2 + 5 + 11 + \cdots + (3 \cdot 2^{n-1} - 1)$

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

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

$$S_n = 3 \cdot \underbrace{(1 + 2 + 2^2 + \cdots + 2^{n-1})}_{a_1 = 1, q = 2} + \underbrace{(-1 - 1 - 1 - \cdots - 1)}_{n \cdot (-1)}$$

$$S_n = 3 \cdot 1 \cdot \frac{2^n - 1}{2-1} - n = 3 \cdot (2^n - 1) - n = 3 \cdot 2^n - 3 - n$$

Tamara Mandić, III3