2 (722) $S_8 = \frac{2(5^8-1)}{5-1} = 195,312$

4 (722) $S_{14} = \frac{5((-2)^{14}-1)}{-2-1} = -27,305$

6 (722) $S_6 = \frac{6144 \cdot ((\frac{3}{4})^6-1)}{-\frac{3}{4}-1} = 2886$

9 (722) $844 = \frac{a_1(1.5^5-1)}{1.5-1} = 13.1875a_1 \rightarrow a_1 = 64$

12 (722) $a_7 = 972(\frac{1}{3})^{n-1}$ $q = \frac{324}{972} = \frac{1}{3}$ (1)

$\frac{1}{243} = (\frac{1}{3})^{n-1}$

$(\frac{1}{3})^5 = (\frac{1}{3})^{n-1}$

$\boxed{n=6}$

$S_6 = \frac{972((\frac{1}{3})^6-1)}{\frac{1}{3}-1} = 1456$

$S_n = \frac{a_n q - a_1}{q-1} = \frac{4 \cdot \frac{1}{3} - 972}{\frac{1}{3}-1} = 1456$ (2) ניתן להשתמש בנוסחה $S_n = \frac{a_n q - a_1}{q-1}$

14 (722) $122 = \frac{162q-2}{q-1}$

$122q - 122 = 162q - 2$

$-120 = 40q$

$\boxed{q=-3}$