Geometric Series – Extra Practice

1. For each geometric series, determine $t\_{1}$ and r. Then, determine the indicated sum. Give your answer as exact values.
a) $24–12+6-…(S\_{10})$ b) $0,3+0,003+0,00003+…\left(S\_{15}\right)$

c) $8-8+8-…\left(S\_{40}\right)$ d) $1-\frac{1}{3}+\frac{1}{9}-…\left(S\_{12}\right)$
2. What is the value of $S\_{n}$ for each of the following geometric series?
a) $t\_{1}=6,r=2,n=9$ b) $t\_{1}=\frac{1}{2},r=4,n=8$
3. Calculate the following sums :
a) 960 + 480 + 240 + … + 15 b) $17–51+153-…-334611$

c) 27 + 9 + 3 + … + $\frac{1}{243}$ d) $\frac{1}{3}+\frac{2}{9}+\frac{4}{27}+…+\frac{128}{6561}$
4. Determine the number of terms in each of the following geometric series:
a) 7 971 615 + 5 314 410 + 3 542 940 + … + 92 160.

b) $1+3x^{2}+9x^{4}+…+243x^{10}$