Do the following series converge or diverge? If they converge, find the value to which they converge.

1. $\sum_{k=0}^{\infty} \frac{4}{3^{k}}$
2. $\sum_{k=0}^{\infty} \frac{3^{k}}{(-4)^{k}}$
3. $\sum_{k=2}^{\infty} \frac{5^{k}}{2^{k}}$
4. $\sum_{k=42}^{\infty} \frac{1}{5^{k}}$

Notice where $k$ begins!

