10.4, #1. This is a geometric series with a = 2 and r = 1/2, its sum is 4.

10.4, #2. This is a geometric series with a = 1 and r = -1/2, its sum is 2/3.

10.4, #3. This is not a geometric series: the (n + 1)-st term comes from the *n*-th term by multiplying by n/(n + 1) instead of a constant factor.

10.4, #5 and #11. This is a geometric series with a = 1 and r = -x. It converges to $\frac{1}{1+x}$ for |x| < 1.

10.4, #12. The series in #7 is geometric converging to $\frac{y^2}{1-y}$ for |y| < 1.

10.4, #13. The series in #8 is geometric converging to $\frac{1}{1-y^2}$ for |y| < 1.