What's Your Ratio?

1. For which values of x does the Ratio Test guarantee that $\sum_{n=1}^{\infty} \frac{2^n x^n}{n}$ converges? Write you answer as an interval.

2. For which values of x does the Ratio Test guarantee that $\sum_{n=1}^{\infty} \frac{2^n x^n}{n}$ diverges?

3. For which values of x is the Ratio Test inconclusive about $\sum_{n=1}^{\infty} \frac{2^n x^n}{n}$? Use a different test to determine whether the series converges in each of these cases.

4. For which values of x does $\sum_{n=1}^{\infty} \frac{2^n x^n}{n}$ converge? Write your answer in the form of an interval.