10.6.2.

1. $\sum_{n=1}^{\infty} \frac{(x-3)^n}{n2^n}$ converges for $|x-3| < 2$

2. $\sum_{n=0}^{\infty} \frac{\ln n\,(x+4)^n}{3^n}$ converges for $|x+4| < 3$

3. $\sum_{n=0}^{\infty} \frac{2^n(x-1)^n}{n+2}$ converges for $|x-1| < \frac{1}{2}$

4. $\sum \frac{n^2 x^n}{(2n)!}$ Converges for all x

5. $\sum_{n=0}^{\infty} \frac{n!\,x^n}{n^3+1}$ Converges for $x=0$

6. $\sum_{n=0}^{\infty} \frac{(-2)^n (x+2)^n}{3^n}$ converges for $|x+2| < \frac{3}{2}$

7. $\sum_{n=0}^{\infty} \frac{(-1)^n x^{2n}}{(2n)!}$ Converges for all x.