

$$\sum_{n=1}^{\infty} \frac{(-1)^n 6^n x^n}{(\sqrt{n} + 4)}$$

$$\left| \frac{(-1)^{n+1} 6^{n+1} x^{n+1}}{\sqrt{n+1} + 4} \cdot \frac{\sqrt{n} + 4}{(-1)^n 6^n x^n} \right| = \frac{6|x|(\sqrt{n} + 4)}{\sqrt{n+1} + 4} \rightarrow |6x| < 1$$
$$|x| < \frac{1}{6}$$

$$-\frac{1}{6}, \frac{1}{6}$$

$$x = \frac{1}{6}$$

$$\sum \frac{(-1)^n 6^n \frac{1}{6^n}}{\sqrt{n} + 4} = \sum \frac{(-1)^n}{\sqrt{n} + 4} \quad \text{converge}$$

$$x = -\frac{1}{6}$$

$$\sum \frac{(-1)^n 6^n \left(-\frac{1}{6}\right)^n}{\sqrt{n} + 4} = \sum \frac{1}{\sqrt{n} + 4} \quad \text{div}$$