

Solutions to Week in Review 9

1. a.)  $I = [-\frac{1}{4}, \frac{1}{4}]$ ,  $R = \frac{1}{4}$

b.)  $I = (\frac{1}{6}, \frac{1}{2}]$ ,  $R = \frac{1}{6}$

c.)  $I = \{-2\}$ ,  $R = 0$

d.)  $I = (-\infty, \infty)$ ,  $R = \infty$

2.

a.) Diverge

b.) Converge

c.) Converge

d.) Not enough information to determine.

3. a.)  $\sum_{n=0}^{\infty} 8^n x^n$ ,  $R = \frac{1}{8}$

b.)  $\sum_{n=0}^{\infty} \frac{(-1)^n x^{2n}}{2^{n+1}}$ ,  $R = \sqrt{2}$

c.)  $\sum_{n=0}^{\infty} \frac{x^{n+4}}{5^{n+4}}$ ,  $R = 5$

d.)  $\ln 15 + \sum_{n=0}^{\infty} \frac{(-1)^n x^{n+1}}{15^{n+1}(n+1)}$ ,  $R = 15$

e.)  $\sum_{n=0}^{\infty} \frac{(-1)^n (2x)^{2n+1}}{(2n+1)}$ ,  $R = \frac{1}{2}$

f.)  $\sum_{n=0}^{\infty} 2^n (n+1)x^n$ ,  $R = \frac{1}{2}$

4.  $\sum_{n=0}^{\infty} \frac{(-1)^n}{2^{5n+1}(5n+1)}$

5.  $\frac{1}{10}$