

Solutions to Week in Review 10

1. a.)  $I = [-\frac{1}{2}, \frac{1}{2}]$ ,  $R = \frac{1}{2}$

b.)  $I = (\frac{1}{3}, \frac{2}{3}]$ ,  $R = \frac{1}{6}$

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

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

2. a.)  $\sum_{n=0}^{\infty} 5^n x^n$ ,  $R = \frac{1}{5}$

b.)  $\sum_{n=0}^{\infty} (-1)^n 4^n x^{2n}$ ,  $R = \frac{1}{2}$

c.)  $\sum_{n=0}^{\infty} \frac{x^{n+2}}{3^{2n+1}}$ ,  $R = 9$

d.)  $\ln 4 + \sum_{n=0}^{\infty} \frac{(-1)^n x^{n+1}}{4^{n+1}(n+1)}$ ,  $R = 4$

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

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

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