

$$R = \frac{1}{100} \frac{(2n)!}{(2n)!}$$

$$R = \frac{2}{100} \frac{2n}{(2n)!}$$

Problem Set 15.2 2 (Z+i)" Power Series General form Zo= Cente. So Xo = -i an = 1Now according to Cauchy-Hadamard formula Here $Q_n = \frac{1}{n^2}$ $Q_{n+1} = \frac{1}{(n+1)^2}$ $R = \lim_{n \to \infty} \frac{1}{n^2}$

$$\frac{R}{n \to \infty} = \frac{\lim_{n \to \infty} \frac{(n+1)^2}{n^2}}{\frac{1}{n^2}}$$

$$= \lim_{n \to \infty} \frac{n^2 + 1 + 2n}{n^2}$$

$$= \lim_{n \to \infty} \frac{n^4 \left(1 + \frac{1}{n^2} + \frac{1}{2}\right)}{n^2}$$

$$= \lim_{n \to \infty} \left(1 + \frac{1}{n^2} + \frac{1}{2}\right)$$

$$= 1$$

$$\frac{\ln \left(1 + \frac{1}{n^2} + \frac{1}{2}\right)}{n^2}$$

$$= 1$$

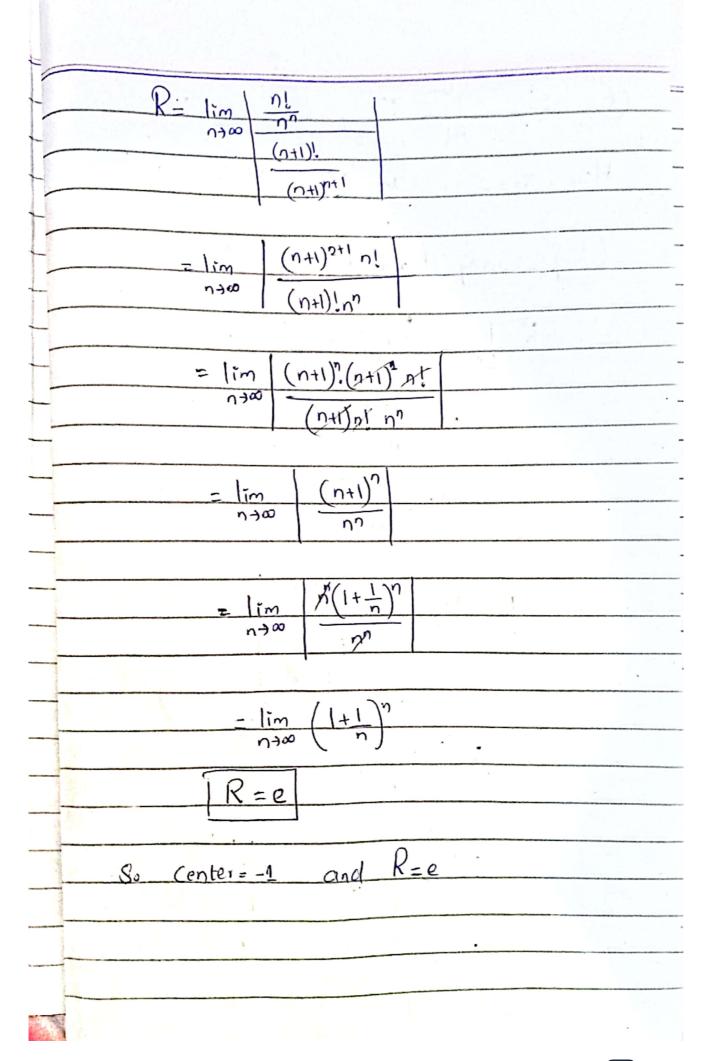
$$\frac{\ln \left(1 + \frac{1}{n^2} + \frac{1}{n^2} + \frac{1}{n^2} + \frac{1}{n^2} + \frac{1}{n^2}$$

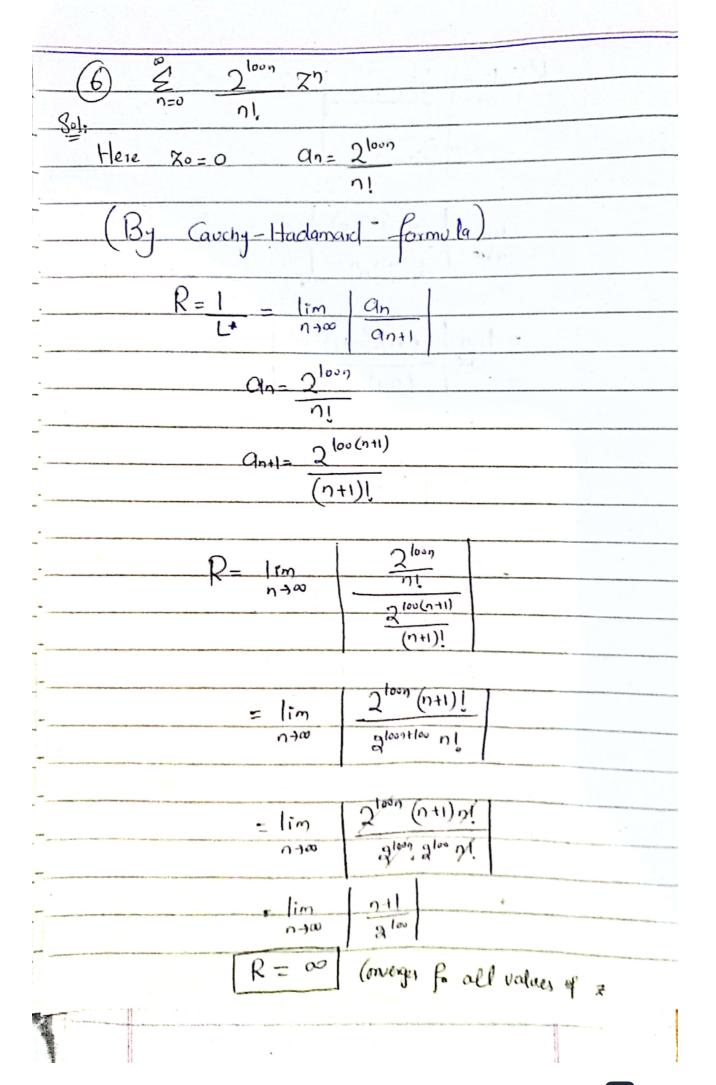
$$= 1$$

$$\frac{\ln \left(1 + \frac{1}{n^2} + \frac{1}{n^2} + \frac{1}{n^2} + \frac{1}{n^2} + \frac{1}{n^2} + \frac{1}{n^2} + \frac{1}{n^2}$$

$$= 1$$

$$\frac{\ln \left(1 + \frac{1}{n^2} + \frac{1}{n^2$$





(8)
$$\frac{2}{3^{2\eta}(n!)^{2}}$$
 $\frac{2^{2\eta}}{3^{2\eta}(n!)^{2}}$
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There series Converges for all value of 2. Hence the center is a and radius 15 00