

$$(11.) \sum_{n=0}^{\infty} \frac{n^n (2x-3)^{n+1}}{n!}$$

(6)

$$\text{Ratio: } \left| \frac{a_{n+1}}{a_n} \right| = \left| \frac{(n+1)^{n+1} (2x-3)^{n+2}}{(n+1)!} \cdot \frac{n!}{n^n (2x-3)^{n+1}} \right|$$

$$= \left| \frac{(n+1)^n (2x-3)}{n^n} \right|$$

$$= \left(\frac{n+1}{n} \right)^n |2x-3|$$

$$= \left(1 + \frac{1}{n} \right)^n |2x-3| \xrightarrow{n \rightarrow \infty} e |2x-3| < 1$$

$$\text{CONV} \Leftrightarrow |2x-3| < \frac{1}{e}$$

$$\left| x - \frac{3}{2} \right| < \frac{1}{2e}$$

$$\boxed{R = \frac{1}{2e}}$$

(c)