

$$\frac{26}{(iii)} \quad \lim_{x \rightarrow 1} \frac{x^n - 1}{x - 1} = \lim_{x \rightarrow 1} \frac{(x-1)(x^{n-1} + x^{n-2} + x^{n-3} + \dots + x + 1)}{x-1} = \underbrace{(1+1+\dots+1)}_{n \text{ times}} = n$$