25) **วิธีทำ** จากโจทย์แบ่งการพิจารณาเศษและส่วนแยกกันดังนี้

พิจารณาเศษ ; $1^2 + 2^2 + 3^2 + \ldots + n^2 = \sum_{n=1}^{n} i^2 = \frac{n(n+1)(2n+1)}{6}$

พิจารณาส่วน ; $1(2) + 2(3) + 3(4) + \ldots + (n-1)(n) = \sum_{n=1}^{n} [(i-1)(i)]$

$$= \sum_{n=1}^{n} (i^2 - i)$$

$$= \sum_{n=1}^{n} i^2 - \sum_{n=1}^{n} i$$

$$= \frac{n(n+1)(2n+1)}{6} - \frac{n(n+1)}{2}$$

จากโจทย์กำหนด $\frac{\text{เศษ}}{\text{ส่วน}} = \frac{231}{228}$

$$\frac{\frac{n(n+1)(2n+1)}{6}}{\frac{n(n+1)(2n+1)}{6} - \frac{n(n+1)}{2}} = \frac{231}{228}$$

$$\frac{\frac{n(n+1)(2n+1)}{(2)(3)}}{\frac{n(n+1)(2n+1)}{(2)(3)} - \frac{n(n+1)}{2}} = \frac{\cancel{231}\ 77}{\cancel{228}\ 76}$$

$$\frac{\frac{n(n+1)}{2}[\frac{(2n+1)}{3}]}{\frac{n(n+1)}{2}[\frac{(2n+1)}{3} - 1]} = \frac{77}{76}$$

$$\frac{\cancel{\frac{n(n+1)}{2}}[\frac{(2n+1)}{3}]}{\cancel{\frac{n(n+1)}{2}}[\frac{(2n+1)}{3} - 1]} = \frac{77}{76}$$

$$\frac{[\frac{(2n+1)}{3}]}{[\frac{(2n+1)}{3} - 1]} = \frac{77}{76}$$

$$\frac{(2n+1)}{3} = \frac{77}{76}[\frac{(2n+1)}{3} - 1]$$

$$\frac{(2n+1)}{3} = \frac{77}{76}[\frac{(2n+1)-3}{3}]$$

$$\frac{(2n+1)}{\cancel{3}} = \frac{77}{76}[\frac{(2n+1)-3}{\cancel{3}}]$$

$$(2n+1) = \frac{77}{76}[(2n+1)-3]$$

$$(2n+1) = \frac{77}{76}(2n-2)$$

$$76(2n+1) = 77(2n-2)$$

$$38(2n+1) = 77(n-1)$$

$$76n + 38 = 77n - 77$$

$$38 + 77 = 77n - 76n$$

$$\therefore\ 115 = n$$

ตอบ C