For all integers $n \geq 9$, the value of

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

is always

A - mult of 4
B - mult of 10
C - prime
D - perfect square
E - perfect cube

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

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

$$= (n+1)[(n+2)-1]$$

$$= (n+1)(n+1)$$

$$= (n+1)^2$$

$\therefore$ (D)