#17

$a_n = n^3 e^{-n}$

$a_n' = n^3(-e^{-n}) + e^{-n}(3n^2)$

$= n^2 e^{-n}(-n+3)$

$= \underbrace{n^2 e^{-n}}_{>0} \underbrace{(3-n)}_{\geq 0 \text{ for } n=1,2,3}$

$< 0 \text{ for } n \geq 4$

So $a_n' < 0$ for $n \geq 4$, i.e. the sequence is eventually (strictly) decreasing.