11.1 #4

$$g(x) = \frac{x^2}{1-x} = x^2 \cdot \frac{1}{1-x} = x^2 \sum_{n=0} x^n = \sum_{n=0} x^{n+2}$$

$$g' = \sum_{n=0} (n+2)\, x^{n+1}$$

not for $n=0$ the first term is x^2 which is not a constant so do not change the index in the derivative.