

11.9 #5

$$f(x) = x^2 \ln(1+x^2) = x^2 \sum_{n=0}^{\infty} \frac{(-1)^n (x^2)^{n+1}}{n+1}$$

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

$$= \sum_{n=0}^{\infty} \frac{(-1)^n x^{2n+4}}{n+1}$$

$$f'(x) = \sum_{n=0}^{\infty} \frac{(-1)^n (2n+4) x^{2n+3}}{(n+1)}$$