

$$f(x) = 1 + x^2 + x^4 + x^6$$

$$g(x) = x + x^3 + x^5 + x^7$$

$$h(x) = f(x) \cdot g(x)$$

$$h'(x) = f'(x) \cdot g(x) + g'(x) \cdot f(x)$$

$$h'(x) = (2x + 4x^3 + 6x^5)(x + x^3 + x^5 + x^7) + (1 + 3x^2 + 5x^4 + 7x^6)(1 + x^2 + x^4 + x^6)$$

$$h'(1) = (2 + 4 + 6)(1 + 1 + 1 + 1) + (1 + 3 + 5 + 7)(1 + 1 + 1 + 1)$$

$$h'(1) = 12 \cdot 4 + 16 \cdot 4$$

$$h'(1) = 48 + 64$$

$$\boxed{h'(1) = 112}$$

$$\cdot (1 + x^2 + x^4 + x^6)$$