

5.17

$$\begin{aligned} 1) \quad f'(x) &= ((2x^2 + 3x + 4)^3)' \\ &= 3(2x^2 + 3x + 4)^2(2x^2 + 3x + 4)' \\ &= 3(2x^2 + 3x + 4)^2(4x + 3) \end{aligned}$$

$$\begin{aligned} 2) \quad f'(x) &= ((x^2 + 5x - 1)^5)' \\ &= 5(x^2 + 5x - 1)^4(x^2 + 5x - 1)' \\ &= 5(x^2 + 5x - 1)^4(2x + 5) \end{aligned}$$

$$\begin{aligned} 3) \quad f'(x) &= ((x^2 + 1)^7)' \\ &= 7(x^2 + 1)^6(x^2 + 1)' \\ &= 7(x^2 + 1)^6 2x \\ &= 14x(x^2 + 1)^6 \end{aligned}$$

$$\begin{aligned} 4) \quad f'(x) &= ((3 - x)^5)' \\ &= 5(3 - x)^4(3 - x)' \\ &= 5(3 - x)^4(-1) \\ &= -5(3 - x)^4 \end{aligned}$$

$$\begin{aligned} 5) \quad f'(x) &= ((2x^2 - 3)^2)' \\ &= 2(2x^2 - 3)(2x^2 - 3)' \\ &= 2(2x^2 - 3)4x \\ &= 8x(2x^2 - 3) \end{aligned}$$

$$\begin{aligned} 6) \quad f'(x) &= ((5x + 1)^4)' \\ &= 4(5x + 1)^3(5x + 1)' \\ &= 4(5x + 1)^3 5 \\ &= 20(5x + 1)^3 \end{aligned}$$