

$$\begin{aligned}
& \textcircled{7} \quad 6(x^2+3x+1)(2x+3)^2 + 6(x^2+3x+1)^2 \\
& \quad 6(x^2+3x+1) \left[(2x+3)^2 + (x^2+3x+1) \right] \\
& \quad 6(x^2+3x+1) \left[(4x^2+12x+9) + (x^2+3x+1) \right] \\
& \quad \left\{ \begin{aligned} & 6(x^2+3x+1)(5x^2+15x+10) \\ & 6(x^2+3x+1)(5)(x^2+3x+2) \end{aligned} \right. \\
& \quad 30(x^2+3x+1)(x^2+3x+2) \\
& \quad \boxed{30(x^2+3x+1)(x+2)(x+1)}
\end{aligned}$$

$$\begin{aligned}
& \textcircled{8} \quad 60x^3(1-3x^2)^5(5x^4-1)^2 - 30x(5x^4-1)^3(1-3x^2)^4 \\
& \quad 30x(1-3x^2)^4(5x^4-1)^2 \left[2x^2(1-3x^2) - (5x^4-1) \right] \\
& \quad 30x(1-3x^2)^4(5x^4-1)^2 (2x^2 - 6x^4 - 5x^4 + 1) \\
& \quad 30x(1-3x^2)^4(5x^4-1)^2 (x^2 - 11x^4 + 1) \\
& \quad \boxed{30x(1-3x^2)^4(5x^4-1)^2 (-11x^4 + 2x^2 + 1)}
\end{aligned}$$
