

$$\begin{aligned}
 15) \int (3u^5 - 2u^3) du \\
 \int 3u^5 du - \int 2u^3 du \\
 3 \int u^5 du - 2 \int u^3 du \\
 \cancel{2} \cdot \frac{u^6}{\cancel{6}2} - \cancel{2} \cdot \frac{u^4}{\cancel{4}2} + C \\
 \frac{u^6}{2} - \frac{u^4}{2} + C //
 \end{aligned}$$

$$\begin{aligned}
 16) \int y^3 (6y^2 - 3) dy \\
 \int (2y^5 - 3y^3) dy \\
 \int 2y^5 dy - \int 3y^3 dy \\
 2 \int y^5 dy - 3 \int y^3 dy \\
 \cancel{2} \cdot \frac{y^6}{\cancel{6}3} - \cancel{3} \cdot \frac{y^4}{\cancel{4}4} + C \\
 \frac{y^6}{3} - \frac{3y^4}{4} + C
 \end{aligned}$$

$$\begin{aligned}
 17) \int x^4 (5 - x^2) dx \\
 \int (5x^4 - x^6) dx \\
 \int 5x^4 dx - \int x^6 dx \\
 5 \int x^4 dx - \int x^6 dx \\
 \cancel{5} \cdot \frac{x^5}{\cancel{5}} - \frac{x^7}{7} + C \\
 x^5 - \frac{x^7}{7} + C
 \end{aligned}$$

$$\begin{aligned}
 18) \int (x^2 + x) dx \\
 \int x^2 dx + \int x dx \\
 \frac{x^3}{3} + \frac{x^2}{2} + C //
 \end{aligned}$$

$$\begin{aligned}
 \bullet f(x) &= \frac{u^6}{2} - \frac{u^4}{2} + C \\
 &= \frac{\cancel{3}u^6}{\cancel{2}1} - \frac{\cancel{2}u^4}{\cancel{2}1} + 0 \\
 &= 3u^5 - 2u^3 //
 \end{aligned}$$

$$\begin{aligned}
 \bullet f(x) &= \frac{y^6}{3} - \frac{3y^4}{4} + C \\
 &= \frac{d}{dx} \frac{y^6}{3} - \frac{d}{dx} \frac{3y^4}{4} + C \\
 &= \frac{\cancel{2}y^5}{\cancel{3}1} - \frac{\cancel{3}y^3}{\cancel{4}1} + 0 \\
 &= 2y^5 - 3y^3 \\
 &= y^3(2y^2 - 3) //
 \end{aligned}$$

$$\begin{aligned}
 \bullet f(x) &= x^5 - \frac{x^7}{7} + C \\
 &= \frac{d}{dx} x^5 - \frac{d}{dx} \frac{x^7}{7} + \frac{d}{dx} C \\
 &= 5x^4 - \cancel{7} \frac{x^6}{\cancel{7}1} + 0 \\
 &= 5x^4 - x^6 \\
 &= x^4(5 - x^2) //
 \end{aligned}$$

$$\begin{aligned}
 \bullet f(x) &= \frac{x^3}{3} + \frac{x^2}{2} + C \\
 &= \frac{d}{dx} \frac{x^3}{3} + \frac{d}{dx} \frac{x^2}{2} + \frac{d}{dx} C \\
 &= \frac{\cancel{3}x^2}{\cancel{3}1} + \frac{\cancel{2}x}{\cancel{2}1} + 0 \\
 &= x^2 + x //
 \end{aligned}$$