16. $\int u'(x) \cdot u(x)^n \, dx = \frac{u(x)^{n+1}}{n+1} + C$ Power

$\int u'(x) \cdot e^{u(x)} \, dx = e^{u(x)} + C$ Exponential

$\int \frac{u'(x)}{u(x)} \, dx = \ln|u(x)| + C$ Log Rule.

17 $I = \int (x^6 + x^2)(3x^7 + 7x^3)^{10} \, dx$

$u(x) = 3x^7 + 7x^3 \quad u'(x) = 3 \cdot 7x^6 + 7 \cdot 3x^2$

$= 3 \cdot 7(x^6 + x^2) = 21(x^6 + x^2)$

$I = \frac{1}{21} \int 21(x^6 + x^2) \cdot (3x^7 + 7x^3)^{10} \, dx$

$= \frac{1}{21} \cdot \frac{(3x^7 + 7x^3)^{11}}{11} = \boxed{\frac{(3x^7 + 7x^3)^{11}}{231} + C}$

18. $I = \int 21(x^6 + x^2) e^{(3x^7 + 7x^3)} \, dx$

$u(x) = 3x^7 + 7x^3, \quad u'(x) = 21(x^6 + x^2) \Rightarrow$ Perfect fit

$\boxed{I = e^{3x^7 + 7x^3}}$

19. $\int \frac{21(x^6 + x^2)}{(3x^7 + 7x^3)} \, dx = \boxed{\ln|3x^7 + 7x^3| + C}$