

Integration

You need to know the following standard integrals!
(There will be a quiz!)

$$\textcircled{1} \int \frac{dx}{x} = \ln|x| + C$$

$$\textcircled{2} \int \frac{a}{bx+k} dx = \frac{a}{b} \ln|bx+k| + C$$

$$\textcircled{3} \int \sin(x) dx = -\cos(x) + C$$

$$\textcircled{4} \int \cos(x) dx = \sin(x) + C$$

$$\textcircled{5} \int \sin(ax) dx = \frac{-1}{a} \cos(x) + C$$

$$\textcircled{6} \int \cos(ax) dx = \frac{1}{a} \sin(x) + C$$

$$\textcircled{7} \int dx = x + C$$

$$\textcircled{8} \int x^n dx = \frac{1}{n+1} x^{n+1} + C$$

$(n \neq -1)$

$$\textcircled{9} \int e^x dx = e^x + C$$

$$\textcircled{10} \int e^{ax} dx = \frac{1}{a} e^{ax} + C$$

$$\textcircled{11} \int \ln(x) dx = x \ln|x| - x + C$$