Maths Toolkit #1 Differentiating & Integrating Time Allowed = 5 mins

| $y = \cos 3x$ | $y = e^{-3x}$ | $y = \ln 5x$ | $y = \tan \alpha x$ | $y = e^{-\frac{1}{2}x}$ |
|-------------------------------------|----------------------------------|----------------------------------|------------------------------|--------------------------|
| $\frac{dy}{dx} =$ | $\left \frac{dy}{dx} \right =$ | $\left \frac{dy}{dx} \right =$ | $\frac{dy}{dx} = y$ | $\frac{dy}{dx} =$ |
| $\int \frac{1}{2x+1} dx$ | $\int \sin 4x dx$ | $\int e^{2x+1}dx$ | $\int \frac{2}{x} dx$ | $\int \sec^2(2x)dx$ |
| = | = | = | = | = |
| $y = e^{x^2 + 3}$ | $y = \tan\frac{1}{3}x$ | $y = \ln x^2$ | $y = -e^{5+x}$ | $y = \ln(\sin x)$ |
| $\frac{dy}{dx} =$ | $\left \frac{dy}{dx} \right =$ | $\left \frac{dy}{dx} \right =$ | $\frac{dy}{dx} =$ | $\frac{dy}{dx} =$ |
| $\int \cos(x+\pi)dx$ | $\int e^{\frac{1}{2}x} dx$ | $\int \frac{1}{3-x} dx$ | $\int e^{-\frac{1}{5}x+2}dx$ | $\int \frac{5}{2x-1} dx$ |
| = | = | = | = | = |
| $y = \ln\left(\frac{x}{x+1}\right)$ | $y = e^{2x+3} + 1$ | $y = \frac{1}{2}e^{5x} + 2x$ | $y = \ln(\cos 2x)$ | $y = \ln e$ |
| $\frac{dy}{dx} =$ | $\left \frac{dy}{dx} \right =$ | $\left \frac{dy}{dx} \right =$ | $\frac{dy}{dx} =$ | $\frac{dy}{dx} =$ |

Score:

%