

B 001 Intro Sheet

For our coming work in Core 4, your differentiation skills must be up to scratch. So complete the following, *fully simplifying your answers*.

1. Differentiate 3^{2x} with respect to x .
2. Differentiate $e^{\sin x}$ with respect to x .
3. Differentiate $\ln \sin x$ with respect to x .
4. Differentiate $(2x - 1)^3(x + 1)^4$ with respect to x .
5. Differentiate $x^3 e^{4x}$ with respect to x .
6. Differentiate $\frac{x^2-1}{\sqrt{x+2}}$ with respect to x .
7. Differentiate $\sec x^3$ with respect to x .
8. Differentiate $\sec^3 x$ with respect to x .
9. Differentiate $\sin \sin \sin x^2$ with respect to x .