

DIFFERENTIATION & APPLICATIONS (Q 6 & 7, PAPER 1)

LESSON No. 8: HIGHER ORDER DIFFERENTIATION

2002

7 (c) Let $f(x) = \frac{e^x + e^{-x}}{2}$.

(i) Show that $f''(x) = f(x)$, where $f''(x)$ is the second derivative of $f(x)$.

(ii) Show that $\frac{f'(2x)}{f'(x)} = 2f(x)$ when $x \neq 0$ and where $f'(x)$ is the first derivative of $f(x)$.