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2. (a) Starting from the definitions of $\sinh x$ and $\cosh x$ in terms of exponentials, prove that

(i) $\cosh 2x \equiv 2\cosh^2 x - 1$

(ii) $\sinh 2x \equiv 2\sinh x \cosh x$

(4)

(b) Solve the equation

$$\cosh 2x - 7\cosh x = -7$$

giving your answers as exact logarithms.

(5)

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Q2

(Total 9 marks)