

## A - Level Further Maths 15 Minute Boost 1

Define $\cosh(x)$ in terms of exponential functions.	
How do you define the mean value of a function over the interval $[a, b]$ .	
What is a suitable concluding statement for a proof by induction?	
State Viète's formulae for the cubic equation $ax^3 + bx^2 + cx + d = 0$	
What is the derivative of $y = \operatorname{arsinh}(4x)$	
<b>1</b> Find the Maclaurin series for the function $y = \ln(e + 3ex)$ . You may use results given in the formula book.	



**2 a)** What is the matrix representing a reflection in the line  $y = 3x$ ?

**b)** Find all invariant lines of the form  $y = mx + c$  for the matrix found in **(b)**?

