## A - Level Further Maths 15 Minute Boost 5

For a polynomial with real coefficients, complex roots occur in	
When is a matrix singular?	
State Viète's formulae for the cubic $p(x) = ax^3 + bx^2 + cx + d$ with roots $\alpha$ , $\beta$ and $\gamma$ .	
Express the area of the triangle $ABC$ in vector form.	
$(\mathbf{AB})^T =$	
<b>1</b> Find $\begin{vmatrix} 2 & 2 & -1 \\ 4 & 2 & 1 \\ 3 & 4 & -2 \end{vmatrix}$	



**2** Let  $f(x) = x^{\frac{1}{2}} + 3x^{\frac{3}{2}}$  is rotated about the *x*-axis between the lines x = 4 and x = 9. Find the volume of revolution formed.

