# A - Level Maths 15 Minute Boost 5

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| $\displaystyle\int \sec(x)\tan(x)\ \mathrm{d}x =$ | |
| What does the mechanics modelling assumption "smooth" mean? | |
| How can you find the area of a general triangle $ABC$? | |
| What is the Newton-Raphson iterative formula? | |
| How do you calculate the moment of a force, $F$, about a point $P$? | |

**1)** Find $\dfrac{\mathrm{d}y}{\mathrm{d}x}$ for the curve given implicitly by $3x^2y + 2y^2 = 7$

**2** Let $l_1$ be the line $l_1 : y = 3x + 6$.

**a)** Find the equation of the line, $l_2$ which is perpendicular to $l_1$ passing through the point $(7,7)$.

**b)** Find the coordinate of intersection of $l_1$ and $l_2$ and name this $A$.

**c)** Let $B$ be the point where $l_1$ crosses the $x-$ axis and $C$ be the point where $l_2$ crosses the $x-$axis. Find the area of triangle $ABC$.