ACHIEVEMENT QUESTIONS ON A TYPICAL NCEA PAPER. (B)

ALGEBRA *You need to get these right for achievement.*

Question ONE

(a) Simplify $(2a)^3(3a)^2$	(b) Simplify $(16x^8)^{1/2}$

Question TWO

(a) Factorise $3x^2 + 2x - 8$	(b) Solve $3x^2 + 2x - 8 = 0$

Question THREE

(a) Solve for *x:* $log_3 x = 2$	(b) Solve for *x:* $log_x 36 = 2$

CALCULUS *You need to get these right for achievement.*

Question ONE

(a) *If $f(x) = x^3 - 2x^2 + 4x + 5$ find the gradient of the tangent when x = 1*	(b) *The gradient function $f'(x) = 6x^2 - 8x$ The graph passes through (1, 4), find the equation for f(x)*

Question TWO

(a) *Find the x coordinate of the point on the graph $y = x^2 + 2x + 9$ where the gradient is equal to 3*	(b) *Find the x coordinate of the points on the graph $y = \frac{x^3}{3} - \frac{x^2}{2} - 12x + 5$ where the gradient is equal to 0*

Question THREE

(a) *The curve y = f(x) goes through (0, 0) and $f'(x) = 6 - 4x$. Find the y value if x = ½*	(b) *If $R = 3t^2 + 4t$, find the rate of increase of R at t = 4 seconds.*