**ACHIEVEMENT QUESTIONS ON A TYPICAL NCEA PAPER. (B)**

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

Question ONE

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| (a) Simplify ***(2a)3(3a)2*** | (b) Simplify ***(16x8 ) ½*** |

Question TWO

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| (a) Factorise ***3x2 + 2x – 8*** | (b) Solve ***3x2 + 2x – 8 = 0*** |

Question THREE

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| (a) Solve for ***x: log3 x = 2*** | (b) Solve for ***x: logx 36 = 2*** |

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

Question ONE

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| (a) ***If f(x) = x3 –2x2 + 4x + 5 find the gradient of the tangent when x = 1*** | (b) ***The gradient function f ꞌ(x) = 6x2 – 8x***  ***The graph passes through (1, 4), find the equation for f(x)*** |

Question TWO

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| (a) ***Find the x coordinate of the point on the graph y = x2 + 2x + 9 where the gradient is equal to 3*** | (b) ***Find the x coordinate of the points on the graph y = x3 – x2 – 12x + 5 where the***  ***3 2***  ***gradient is equal to 0*** |

Question THREE

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| (a)***The curve y = f(x) goes through (0, 0)and f ꞌ(x) = 6 – 4x. Find the y value if x = ½*** | (b) ***If R = 3t2 + 4t, find the rate of increase of R at t = 4 seconds.*** |