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

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

Question ONE

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| (a) Simplify ***(a4)3(5a)2*** | (b) Simplify ***(27b6) - ⅓*** |

Question TWO

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| (a) Factorise ***4x2 + 4x – 15***  | (b) Solve ***4x2 + 4x – 15 = 0*** |

Question THREE

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| (a) Solve for ***x: log x = 3 log 4*** | (b) Solve for ***x: log4 x = 2***  |

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

Question ONE

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| (a) ***If f(x) = 3x2 + 4x – 5 find the gradient when x = 2*** | (b) ***The gradient function f ꞌ(x) = 3 – 4x******The graph passes through (2, 7), 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 – 3x + 7 where the gradient is equal to 8***  | (b) ***Find the x coordinate of the points on the graph y = x3 – x2 – 15 where the***  ***3******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) = 3x2 – 2x. Find the y value if x = 4***  | (b) ***The temperature T in an experiment at t seconds is T = 4t2 + 2t. Find the rate of increase of the temperature at t = 5 seconds.***  |