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| S4 NAT5 Prelim 2014 Paper 1 Marking Scheme | Marks |
| 1. **Ans: 1**  * Equivalent Fraction * Subtract fraction | 1  1 |
| 1. **Ans:** | 1  1  1 |
| 1. **(a) Ans : (*x* – 5)(*x* + 5)**  * Factorise difference of two squares - (*x* – 5)(*x* + 5)   **(b) Ans:**   * Substitute answer from part (a) in denominator - * Simplify fraction - | 1  1  1 |
| 1. **Ans: Proof**  * Know to use Cosine Rule - evidence * Substitute correctly into formula - *cos*(A) = * Complete proof - cos(A) = | 1  1  1 |
| 1. **Ans: y = sin3x**  * **Y = sin3c** | 1 |
| 1. **(a) Ans: A(0, -3)**  * Evaluate y by substituting *x* = 0 into formula - A(0, -3)   **(b) Ans: B( and C(**   * Set y = 0 and factorise - (2*x* + 3)(2*x* – 1) = 0 * Evaluate roots - x = and x = * Write down co-ordinates - B( and C(   **(c) Ans:**   * Find midpoint of roots and substitute into formula - * Evaluate - | 1  1  1  1  1  1 |
| 1. **(a) Ans: D(5,5,12)**  * **Coordinates of D(5,5,12)**   **(b) Ans:**   * **d – a =** * **Calculate the magnitude** | 1  1  1 |
| 1. **Ans: *h = 2L + t***  * Multiply both sides by 2 - *2L = h – t* * Add *t* to both sides - *h = 2L + t* | 1  1 |
| 1. **(a) Ans: Appropriate boxplots**  * Boxplots drawn for each set of data (labelled) - inspection * Consistent, appropriate scale drawn - inspection * Both boxplots drawn on same diagram - inspection   **(b) Ans: Timberplan**   * Smaller box (middle 50%, SIQR) therefore more consistent | 1  1  1  1 |
| 1. **(a) Ans: 4**  * Take cube root of 8 - 2 * Square answer - 4   **(b) Ans:**   * Multiply top and bottom by root 3 * Simplify | 1  1  1  1 |
| 1. **Ans: Inspection of graph**  * Suitable axes drawn - inspection * Line sloping down from left to right - inspection * Line crosses the *y* axis below the *x* axis - inspection | 1  1  1 |
| 1. (a) Ans: a = 6 , b = -32  * a = 6 * b = -32   (b) Ans: p = +4 or -4   * b2 – 4ac = 0 * (-p)2 – (4 x 4 x 1)= 0 * P2 = 16 * P = +4 or -4 | 1  1  1  1  1  1 |
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