|  |  |
| --- | --- |
| S4 NAT5 Prelim 2014 Paper 2 Marking Scheme | Mark |
| Answer = | 1  1 |
| 60% =£63  1% = £1.05  100% = £105 | 1  1  1 |
| 1. = 42.6   = -11.6, 41.4, 13.4, -12.6, -13.6, -15.6, -1.6  SD = 20.9   1. Comment on mean - **On average** Edinburgh Rugby team scored more points last season.   Comment on Standard Deviation – Glasgow’s team points are **more variable** (more spread) over the course of the season compared to Edinburgh’s.  *Remarks*  *Lose mark if rounded to 43 but still correctly followed …….. award 3/4* | 1  1  1  1  1  1 |
| **ANS: 6190000 or 6.19 Million**  Multiplier 1.04  Power of 3  Answer before giving to 3 sig fig. = 6186752  Answer 6.19 million  *Remarks*  *Year by year approach 1st mark for increase = 220000, 2nd mark for end year 1 = 5720000* | 1  1  1  1 |
| 1. Area of Semi Circle =   = 2.74  Area of rectangle = 2.64 x 1.5 = 3.96    Total Area = 3.96 + 2.74  = 6.7   1. **ANS: 20.1m3**     = A x 3m    = 20.1m3  *Remarks*  *Award 1 mark if used 300cm,instead of 3m, correctly to get 2009.08.* | 1  1  1  1  1 |
| Correctly rearranging  Principal Value  Correctly identifying 2 values | 1  1  1 |
| 1. ANS: *x*= 2.19 or -1.52   Substituting correctly into formula  Correct root  *X* = 2.19 to 2 decimal places  *X* = -1.52 to 2 decimal places | 1  1  1  1 |
| Missing angle B (180° – 53° - 68°) = 59°  For knowing to use the Sine Rule (or equivalent)  Missing side A or C a = 121.12m  Knowing to use trigonometry (SOH CAH TOA)  X = 112.3m | 1  1  1  1  1 |
| 1. Correct sketch   Correct sketch of a sin wave  Label 4 and -4 on the y axis  2 waves in 360 or 1 wave in 180 | 1  1  1 |
| 1. Identifying the area of the whole shape and area of the lawn   Area of whole shape = , Area of lawn =  Solving for the area of path =  =  Area of lawn = Area of path  therefore shown   1. Correctly identifying factors   Solving for roots , 2  Selecting the appropriate value and length 6cm | 1  1  1  2  1  1 |
| Identifying the angle fraction and substituting into formula for arc length  Correctly working out arc length = 44.61cm  Knowing to ÷ 2 and × 100  Final Answer = 2230.5 grams | 1  1  1  1 |
| 1. ANS: 27cm   Identify the need to use Pythagoras and quote formula  Know to divide the length of the chord by 2 to get 9cm  Correctly calculate the length of the short side as 12cm  Add together the radius and length of the short side to get the width as 27cm | 1  1  1  1 |