Band 5 – Test 3 Answers

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| 1. | 0.912 = 83%0.913 = 75%0.914 = 69%0.915 = 62%0.916 = 57%0.917 = 52%0.918 = 47%8 years | 1 mark for 2 trials correct1 mark for trials up to 8 years1 mark for correct answer | 3 |
| 2. | q α 1 t²q = k t²8.5 = k 4²k = 136q = 136 t²q = 136 = 5.44 5² | 1 mark for calculating k1 mark for correct formula1 mark for substituting t1 mark for correct answer | 4 |
| 3. | $$\frac{9}{4}^{^{3}/\_{2}}= \sqrt{\frac{9}{4}}^{3}= \frac{3}{2}^{3}= \frac{27}{8}$$ | 1 mark for √1 mark for cubing answer | 2 |
| 4. | (4 x 103) ÷ (8 x 105)= 4 ÷ 8 x 10-2= 0.5 x 10-2= 5 x 10-3 | 1 mark for 0.5 or 5 seen1 mark for correct answer | 2 |
| 5. |

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| **x** | -2 | -1 | 0 | 1 | 2 |
| **y** | -14 | -4 | 0 | 4 | 14 |

 | 1 mark for 2 y values correctOr 2 marks for all y values correct1 mark for correct coordinates plotted1 mark for correct graph drawn | 4 |

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| 6. | L2: y = 2x + c4 = 2(3) + cc = -2y = 2x - 2 | 1 mark for calculating gradient1 mark for substituting to find c1 mark for correct answer | 3 |
| 7. | (x – 8)(x + 5)x = 8 or -5 | 1 mark for 5 or 8 seen1 mark for correct factorisation1 mark for correct answer | 3 |
| 8. |  3x + y = 1 x1 x – 2y = 19 x3 3x + y = 13x – 6y = 57 - 7y = -56 y = -8\_\_\_ 3x + y = 1 3x – 8 = 1 3x = 9 x = 3 |  3x + y = 1 x2 x – 2y = 19 x16x + 2y = 2 x – 2y = 19 + 7x = 21 x = 3\_\_\_\_\_ 3x + y = 1 9 + y = 1 y = -8 | 1 mark for scaling up correctly1 mark for calculating 1 variable1 mark for correct substitution1 mark for calculating other variable0 marks if non-algebraic method used | 4 |
| 9. |  \_\_x\_\_ = p x + c q xq = p(x + c) xq = px + pc xq – px = pcx(q – p) = pc x = \_pc\_ q + p | 1 mark for multiplying by denominators1 mark for expanding brackets1 mark for factorising1 mark for correct answer | 4 |
| 10. | 3t + 1 < t + 122t + 1 < 12 2t < 11 t < 5.5 | 1 mark for 5.5 oe1 mark for correct inequality symbol used | 2 |
| 11. | AB = BC = CD = AD as per diagram with equal lengthsBD shared by both trianglesSSS proves congruence | 1 mark for AB = BC = CD = AD1 mark for BD1 mark for SSS oe in words | 3 |
| 12. |  | 1 mark for line 1.5 cm from patio1 mark for circle radius 3 from pond1 mark for correct region shaded | 3 |
| 13. | x = cos-1(3.9 ÷ 4.7) = 33.923112… = 33.9º | 1 mark for use of cos1 mark for correct working1 mark for correctly rounded answer | 3 |

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| 14. |  | 1 mark for identifying C of E1 mark for correct enlargement of ½1 mark for enlargement in correct place1 mark for correct x movement1 mark for correct y movement | 5 |
| 15. | 15 = \_Θ\_ x 20 x π 360Θ = 15 ÷ 20 ÷ π x 360 = 85.943669… = 85.9º | 1 mark for equal to 151 mark for correct working1 mark for correct answer | 3 |
| 16. | l = $\sqrt{12^{2}+ 5^{2}}$ = 13π x 5 x 13 = 204.20352… = 204.20 cm² | 1 mark for Pythagoras to calculate l1 mark for correct working1 mark for correct answer | 3 |

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| 17. | 8 x 2.5 = 20 cm15 ÷ 2.5 = 6 cm | 1 marks for each correct working1 mark for each correct answer | 4 |
| 18. |

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| **Number of cups of coffee** | **Frequency** | **M x f** |
| 29 | 2 | 58 |
| 30 | 5 | 150 |
| 31 | 2 | 62 |
| 32 | 1 | 32 |

Mean = 302 = 30.2 pins 10 | 1 mark for correct third column1 mark for Σmf Σf1 mark for correct answer rounded correctly | 3 |
| 19. | \_399\_ x 70 = 19.24879… = 19 students 1451 | 1 mark for correct working1 mark for correct answer | 2 |
| 20. | P(L and L or nL and L or L and nL)= 1 x 7 + 4 x 1 + 1 x 3 = 7 + 4 + 3 = 14 5 10 5 10 5 10 50 50 50 50 | 1 mark for 1st train correct1 mark for 2nd train correct1 mark for correct working1 mark for correct answer | 4 |