Band 6 – Test 2 Answers

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| 1. | 1000x = 13.013013…  - x = 0.013013…  999x = 13  x = | 1 mark for x1000  1 mark for calculating x  1 mark for answer in simplest form | 3 |
| 2. | UB mass = 1180.5 g  LB volume = x π x 6.15³ = 974.347… cm³  UB density = = 1.21157… = 1.21 g/cm³ | 1 mark for correct UB mass  1 mark for correct LB volume  1 mark for correct working  1 mark for answer rounded correctly | 4 |
| 3. | √96 = √16 x √6 = 4√6 | 1 mark for correct working  1 mark for correct answer | 2 |
| 4. | Gradient = -1 ÷ 2 = -½  y = -½x + c  3 = -½(0) + c  c = 3  y = -½x + 3 | 1 mark for gradient  1 mark for y-intercept  1 mark for correct answer | 3 |

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| 5. | |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | **x** | -2 | -1 | 0 | 1 | 2 | | **y** | 1/9 | 1/3 | 1 | 3 | 9 | | 1 mark for at least 2 y values correct  Or 2 marks for all y values correct  1 mark for coordinates plotted correctly  1 mark for correct graph drawn | 4 |

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| 6. | x³ + 3x² - 5 = 0  x²(x + 3) = 5  x² =  x =  x1 = 1.1180…  x2 = 1.1018…  x3 = 1.1040…  x4 = 1.1037… = 1.104 | 1 mark for isolating x²  1 mark for correct answer  1 mark for at least 2 correct iterations  1 mark for answer rounded correctly | 4 |
| 7. | x = 1/5 or -3 | 1 mark for correct working  1 mark for correct factorisation  1 mark for correct answer | 3 |
| 8. | x = 8 or -1.47 | 1 mark for correct substitution  1 mark for each correct answer | 3 |
| 9. |  | 1 mark for solid line  1 mark for correct side indicated | 2 |
| 10. |  | 1 mark for C of E correctly identified  1 mark for SF -½  1 mark for correct enlargement | 3 |
| 11. | = 13 cm | 1 mark for 2 dimensions squared  1 mark for correct working  1 mark for correct conclusion | 3 |
| 12. | = 60√2 cm  60 x tan30 = 30.571…  tan-1() = 22.0150… = 22.0º | 1 mark for 60√2 oe  1 mark for tan used  1 mark for tan used again  1 mark for answer rounded correctly | 4 |
| 13. | ½ x 10 x 12 x sin45 = 38.9668… = 39.0 cm² | 1 mark for correct substitution  1 mark for correct working  1 mark for correct answer | 3 |
| 14. | =  1350 x = 3200 cm³ | 1 mark for sf 4/3  1 mark for correct working  1 mark for correct answer | 3 |
| 15. | |  |  |  |  | | --- | --- | --- | --- | | **Time (*t* minutes)** | **Frequency** | **Midpoint** | **M x f** | | 0 < *t* ≤6 | 15 | 3 | 45 | | 6 < *t* ≤ 12 | 25 | 9 | 225 | | 12 < *t* ≤ 18 | 20 | 15 | 300 | | 18 < *t* ≤ 24 | 12 | 21 | 252 | | 24 < *t* ≤ 30 | 8 | 27 | 216 |   1038 = 12.975 minutes  80 | 1 mark for correct third column  1 mark for correct fourth column  1 mark for Σmf  Σf  1 mark for correct answer rounded correctly | 4 |
| 16. | 30 < t ≤ 40  30 < t ≤ 40 | 1 mark for each correct answer | 2 |