Band 6 – Test 2 Answers

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| 1. | 1000x = 13.013013…- x = 0.013013… 999x = 13 x = $\frac{13}{999}$ | 1 mark for x10001 mark for calculating x1 mark for answer in simplest form | 3 |
| 2. | UB mass = 1180.5 gLB volume = $\frac{4}{3}$ x π x 6.15³ = 974.347… cm³UB density = $\frac{1180.5}{974.347…}$ = 1.21157… = 1.21 g/cm³ | 1 mark for correct UB mass1 mark for correct LB volume1 mark for correct working1 mark for answer rounded correctly | 4 |
| 3. | √96 = √16 x √6 = 4√6 | 1 mark for correct working1 mark for correct answer | 2 |
| 4. | Gradient = -1 ÷ 2 = -½y = -½x + c3 = -½(0) + cc = 3y = -½x + 3 | 1 mark for gradient1 mark for y-intercept1 mark for correct answer | 3 |

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| 5. |

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| **x** | -2 | -1 | 0 | 1 | 2 |
| **y** | 1/9  | 1/3  | 1 | 3 | 9 |

 | 1 mark for at least 2 y values correctOr 2 marks for all y values correct1 mark for coordinates plotted correctly1 mark for correct graph drawn | 4 |

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| 6. | x³ + 3x² - 5 = 0 x²(x + 3) = 5 x² = $\frac{5}{x+3}$ x = $\sqrt{\frac{5}{x+3}}$x1 = 1.1180…x2 = 1.1018…x3 = 1.1040…x4 = 1.1037… = 1.104 | 1 mark for isolating x²1 mark for correct answer1 mark for at least 2 correct iterations1 mark for answer rounded correctly | 4 |
| 7. | x = 1/5 or -3 | 1 mark for correct working1 mark for correct factorisation1 mark for correct answer | 3 |
| 8. | $$x=\frac{--124\pm \sqrt{124^{2}-4(19)(-224)}}{2(1)}$$$$x=\frac{124\pm \sqrt{15376+17024}}{2}$$x = 8 or -1.47 | 1 mark for correct substitution1 mark for each correct answer | 3 |
| 9. |  | 1 mark for solid line1 mark for correct side indicated | 2 |
| 10. |  | 1 mark for C of E correctly identified1 mark for SF -½1 mark for correct enlargement | 3 |
| 11. | $\sqrt{12^{2}+ 3^{2}+ 4^{2}}= \sqrt{169}$ = 13 cm | 1 mark for 2 dimensions squared1 mark for correct working1 mark for correct conclusion | 3 |
| 12. | $\sqrt{60^{2}+ 60^{2}}$ = 60√2 cm60 x tan30 = 30.571…tan-1($\frac{30.6}{60\sqrt{2}}$) = 22.0150… = 22.0º | 1 mark for 60√2 oe1 mark for tan used1 mark for tan used again1 mark for answer rounded correctly | 4 |
| 13. | ½ x 10 x 12 x sin45 = 38.9668… = 39.0 cm² | 1 mark for correct substitution1 mark for correct working1 mark for correct answer | 3 |
| 14. | $\sqrt{800÷450}$ = $\frac{4}{3}$1350 x $\left(\frac{4}{3}\right)^{3}$ = 3200 cm³ | 1 mark for sf 4/31 mark for correct working1 mark for correct answer | 3 |
| 15. |

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| **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 column1 mark for correct fourth column1 mark for Σmf Σf1 mark for correct answer rounded correctly | 4 |
| 16. | 30 < t ≤ 4030 < t ≤ 40 | 1 mark for each correct answer | 2 |