Band 6 – Test 1 Answers

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| 1. | 100x = 213.63636…- x = 2.13636… 99x = 211.5 x = $\frac{211.5}{99}=2\frac{135}{990}=2\frac{3}{22}$ | 1 mark for x1001 mark for calculating x1 mark for answer in simplest form | 3 |
| 2. | 35.55$\sqrt{\frac{2 x 35.55}{9.85}}$ = 2.686684… = 2.7 seconds | 1 mark for correct LB of d1 mark for correct UB of g1 mark for correct substitution1 mark for answer rounded correctly | 4 |
| 3. | √72 = √36 x √2 = 6√2 | 1 mark for correct working1 mark for correct answer | 2 |
| 4. | Gradient = -1 ÷ 2 = -½y = -½x + 6  | 1 mark for gradient1 mark for y-intercept1 mark for correct answer | 3 |
| 5. |

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| **x** | -2 | -1 | 0 | 1 | 2 |
| **y** | ¼  | ½  | 1 | 2 | 4 |

 | 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 |
| 6. | x³ - x² + 7 = 0 x³ = x² - 7 x = $\sqrt[3]{x^{2}-7}$x1 = -1.817…x2 = -1.546…x3 = -1.664…x4 = -1.617… = -1.617 | 1 mark for isolating x³1 mark for correct answer1 mark for at least 2 correct iterations1 mark for answer rounded correctly | 4 |
| 7. | x = 4 or -3/2 | 1 mark for correct working1 mark for correct factorisation1 mark for correct answer | 3 |
| 8. | $$x=\frac{--5\pm \sqrt{5^{2}-4(1)(-8)}}{2(1)}$$$$x=\frac{5\pm \sqrt{5^{2}+32}}{2}$$x = 6.27 or -1.27 | 1 mark for correct substitution1 mark for each correct answer | 3 |
| 9. |  | 1 mark for dotted line1 mark for correct side indicated | 2 |
| 10. |  | 1 mark for C of E correctly identified1 mark for SF 1½1 mark for correct enlargement | 3 |
| 11. | $\sqrt{8^{2}+ 10^{2}}= \sqrt{168}$ = 12.8 cmDiagonal is shorter than the pencil therefore will not fit | 1 mark for correct working1 mark for 12..81 mark for correct conclusion | 3 |
| 12. | $\sqrt{5^{2}+ 7^{2}}$ = 8.6 cmtan-1(3 ÷ 8.6) = 19.2º | 1 mark for 8.61 mark for tan used1 mark for correct working1 mark for answer rounded correctly | 4 |
| 13. | ½x2sin60 = 36x = 9.118… = 9.11 cm | 1 mark for correct equation for x1 mark for correct working1 mark for correct answer | 3 |
| 14. | 180 x 2² = 720 cm² | 1 mark for sf 21 mark for correct working1 mark for correct answer | 3 |
| 15. |

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| **Area (A cm2)** | **Frequency** | **Midpoint** | **M x f** |
| 0 < *A* ≤ 10 | 38 | 5 | 190 |
| 10 < *A* ≤ 25 | 36 | 17.5 | 630 |
| 25 < *A* ≤ 40 | 30 | 32.5 | 975 |
| 40 < *A* ≤ 60 | 46 | 50 | 2300 |

4095 = 27.3 cm² 150 | 1 mark for correct third column1 mark for correct fourth column1 mark for Σmf Σf1 mark for correct answer rounded correctly | 4 |
| 16. | 90 < t ≤ 10080 < t ≤ 90 | 1 mark for each correct answer | 2 |