Band 6 – Test 1 Answers

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| --- | --- | --- | --- |
| 1. | 100x = 213.63636…  - x = 2.13636…  99x = 211.5  x = | 1 mark for x100  1 mark for calculating x  1 mark for answer in simplest form | 3 |
| 2. | 35.55  = 2.686684… = 2.7 seconds | 1 mark for correct LB of d  1 mark for correct UB of g  1 mark for correct substitution  1 mark for answer rounded correctly | 4 |
| 3. | √72 = √36 x √2 = 6√2 | 1 mark for correct working  1 mark for correct answer | 2 |
| 4. | Gradient = -1 ÷ 2 = -½  y = -½x + 6 | 1 mark for gradient  1 mark for y-intercept  1 mark for correct answer | 3 |
| 5. | |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | **x** | -2 | -1 | 0 | 1 | 2 | | **y** | ¼ | ½ | 1 | 2 | 4 | | 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 |
| 6. | x³ - x² + 7 = 0  x³ = x² - 7  x =  x1 = -1.817…  x2 = -1.546…  x3 = -1.664…  x4 = -1.617… = -1.617 | 1 mark for isolating x³  1 mark for correct answer  1 mark for at least 2 correct iterations  1 mark for answer rounded correctly | 4 |
| 7. | x = 4 or -3/2 | 1 mark for correct working  1 mark for correct factorisation  1 mark for correct answer | 3 |
| 8. | x = 6.27 or -1.27 | 1 mark for correct substitution  1 mark for each correct answer | 3 |
| 9. |  | 1 mark for dotted line  1 mark for correct side indicated | 2 |
| 10. |  | 1 mark for C of E correctly identified  1 mark for SF 1½  1 mark for correct enlargement | 3 |
| 11. | = 12.8 cm  Diagonal is shorter than the pencil therefore will not fit | 1 mark for correct working  1 mark for 12..8  1 mark for correct conclusion | 3 |
| 12. | = 8.6 cm  tan-1(3 ÷ 8.6) = 19.2º | 1 mark for 8.6  1 mark for tan used  1 mark for correct working  1 mark for answer rounded correctly | 4 |
| 13. | ½x2sin60 = 36  x = 9.118… = 9.11 cm | 1 mark for correct equation for x  1 mark for correct working  1 mark for correct answer | 3 |
| 14. | 180 x 2² = 720 cm² | 1 mark for sf 2  1 mark for correct working  1 mark for correct answer | 3 |
| 15. | |  |  |  |  | | --- | --- | --- | --- | | **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 column  1 mark for correct fourth column  1 mark for Σmf  Σf  1 mark for correct answer rounded correctly | 4 |
| 16. | 90 < t ≤ 100  80 < t ≤ 90 | 1 mark for each correct answer | 2 |