Bands 1 – 3 Problem Solving – Test 3 Answers

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| 1. | 12 ÷ 3 = 4 cm  4 x 4 = 16 cm | 1 mark for calculating length of one side  1 mark for correct answer | 2 |
| 2. | 134 + 125 + 30 = 289  289 ÷ 54 = 5 r 19  6 coaches needed | 1 mark for total number attending  1 mark for 289 ÷ 54  1 mark for correct answer | 3 |
| 3. | |  |  |  |  | | --- | --- | --- | --- | |  | **Girls** | **Boys** | **Total** | | **Chemistry** | 7 | **16** | 23 | | **Biology** | 21 | **28** | **49** | | **Physics** | **10** | 18 | **28** | | **Total** | 38 | **62** | 100 |   49 students liked biology best | 1 mark for attempt to draw two-way table  1 mark for correctly filling in information from the question  1 mark for correctly filling in gaps  1 mark for correct answer | 4 |
| 4. | 12 sides in total  60 ÷ 12 = 5 cm | 1 mark for identifying number of sides  1 mark for 60 ÷ 12  1 mark for correct answer | 3 |
| 5. | = (50, 30) | 1 mark for or  1 mark for correct answer | 2 |

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| 6. | 200 cm² ÷ 8 squares = 25 cm² each  √25 = 5 cm side  18 x 5 cm = 90 cm | 1 mark for calculating area of one square  1 mark for calculating length of side  1 mark for 18 x 5  1 mark for correct answer | 4 |
| 7. | 80305 – 79721 = 584 units used  584 – 70 = 514  70 x 20p = 1400p  514 x 10p = 5140p  1400 + 5140 = 6540 = £65.40 | 1 mark for calculating units used  1 mark for 70 x 20  1 mark for 514 x 10  1 mark for correct answer in pounds | 4 |
| 8. | 17 15 18 30 21 20 22 20  2/3 of 228 = 2 x 76 = 152 | 1 mark for delay  1 mark for flight  1 mark for time difference  1 mark for 228 ÷ 3  1 mark for 2 x 76  1 mark for correct answer | 6 |

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| 9. | 2x + x = 135  3x = 135  x = 45 cm  **or**  1 : 2  135 ÷ 3 = 45 cm  **or** | 1 mark for expression, ratio or diagram  1 mark for 135 ÷ 3 (written or otherwise)  1 mark for correct answer |  |
| 10. | |  |  |  | | --- | --- | --- | | **Shop A**  270 ÷ 9 = 30 packs  Pay for 15  15 x £1.80 = £27.00 | **Shop B**  270 ÷ 18 = 15 packs  Pay for 10  10 x £2.50 = £25.00 | **Shop C**  270 ÷ 27 = 10 packs  Pay for 10  10 x £2.60 = £26.00 |   Shop B is cheapest | 1 mark for each price calculation  1 mark for correct answer | 4 |

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| 11. | 5.7 ÷ 0.53 = 10.75 🡪 11 rolls across width  11 x 2.8 = 30.8 m needed  30.8 ÷ 21 = 2.56 🡪 3 rolls needed  3 x £12.45 = £37.35 | 1 mark for rolls across width  1 mark total length needed  1 mark for number of rolls needed  1 mark for 3 x £12.45  1 mark for correct answer | 5 |
| 12. | |  |  | | --- | --- | | **T-shirts R Us**  Pay for 3/5 of T-shirts  18 x £12 = £216  10% of £216 = £21.60  20% of £216 = £43.20  £216 - £43.20 = £172.80 | **Budget T-shirt Company**  30 x £12 = £360  £360 ÷ 2 = £180 |   T-shirts R Us is cheapest | 1 mark for 18 x £12 or £216 seen  1 mark for 10% or 20% of £216  1 mark for £172.80 seen  1 mark for £180 seen  1 mark for correct answer | 5 |
| 13. | 2x = 11 – 3 = 8  x = 4  x + y = 10 – 4 = 6  y = 2  Length = 4, width = 2  C = (9, 8) | 1 mark for identifying 2x = 8 oe  1 mark for x = 4 oe  1 mark for x + y = 6 oe  1 mark for y = 2  1 mark for correct answer (accept dimensions written on diagram)  1 mark for x coordinate  1 mark for y coordinate | 7 |