Bands 1 – 3 Problem Solving – Test 3 Answers

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| 1. | 12 ÷ 3 = 4 cm4 x 4 = 16 cm | 1 mark for calculating length of one side1 mark for correct answer | 2 |
| 2. | 134 + 125 + 30 = 289289 ÷ 54 = 5 r 196 coaches needed | 1 mark for total number attending1 mark for 289 ÷ 541 mark for correct answer | 3 |
| 3. |

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|  | **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 table1 mark for correctly filling in information from the question1 mark for correctly filling in gaps1 mark for correct answer | 4 |
| 4. | 12 sides in total60 ÷ 12 = 5 cm | 1 mark for identifying number of sides1 mark for 60 ÷ 121 mark for correct answer | 3 |
| 5. | $\left(\frac{20+80}{2},\frac{15+45}{2}\right)$ = (50, 30) | 1 mark for $\frac{20+80}{2}$ or $\frac{15+45}{2}$1 mark for correct answer | 2 |

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| 6. | 200 cm² ÷ 8 squares = 25 cm² each√25 = 5 cm side18 x 5 cm = 90 cm | 1 mark for calculating area of one square1 mark for calculating length of side1 mark for 18 x 51 mark for correct answer | 4 |
| 7. | 80305 – 79721 = 584 units used584 – 70 = 51470 x 20p = 1400p514 x 10p = 5140p1400 + 5140 = 6540 = £65.40 | 1 mark for calculating units used1 mark for 70 x 201 mark for 514 x 101 mark for correct answer in pounds | 4 |
| 8. | 17 15 $\vec{delay}$ 18 30 $\vec{flight}$ 21 20 $\vec{time difference}$ 22 202/3 of 228 = 2 x 76 = 152 | 1 mark for delay1 mark for flight1 mark for time difference1 mark for 228 ÷ 31 mark for 2 x 761 mark for correct answer | 6 |

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| 9. | 2x + x = 1353x = 135x = 45 cm**or**1 : 2135 ÷ 3 = 45 cm**or** | 1 mark for expression, ratio or diagram1 mark for 135 ÷ 3 (written or otherwise)1 mark for correct answer |  |
| 10. |

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| **Shop A**270 ÷ 9 = 30 packsPay for 1515 x £1.80 = £27.00 | **Shop B**270 ÷ 18 = 15 packsPay for 1010 x £2.50 = £25.00 | **Shop C**270 ÷ 27 = 10 packsPay for 1010 x £2.60 = £26.00 |

Shop B is cheapest | 1 mark for each price calculation1 mark for correct answer | 4 |

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| 11. | 5.7 ÷ 0.53 = 10.75 🡪 11 rolls across width11 x 2.8 = 30.8 m needed30.8 ÷ 21 = 2.56 🡪 3 rolls needed3 x £12.45 = £37.35 | 1 mark for rolls across width1 mark total length needed1 mark for number of rolls needed1 mark for 3 x £12.451 mark for correct answer | 5 |
| 12. |

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| **T-shirts R Us**Pay for 3/5 of T-shirts18 x £12 = £21610% of £216 = £21.6020% 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 seen1 mark for 10% or 20% of £2161 mark for £172.80 seen1 mark for £180 seen1 mark for correct answer | 5 |
| 13. | 2x = 11 – 3 = 8x = 4x + y = 10 – 4 = 6y = 2Length = 4, width = 2C = (9, 8) | 1 mark for identifying 2x = 8 oe1 mark for x = 4 oe1 mark for x + y = 6 oe1 mark for y = 21 mark for correct answer (accept dimensions written on diagram)1 mark for x coordinate1 mark for y coordinate | 7 |