Bands 1 – 3 Problem Solving – Test 1 Answers

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| 1. | 40 – 35 = 5 hours remaining50 mins + 2 hrs + 40 mins + 1 hr + 35 mins = 5 hrs 5 minsSumire cannot record all 3 programmes | 1 mark for calculating hours remaining1 mark for adding lengths of 3 shows1 mark for total time1 mark for correct conclusion | 4 |
| 2. |

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| **Flavour** | **Tally** | **Total/frequency** |
| Salt and vinegar | |||| | 4 |
| Chicken | ||| | 3 |
| Plain | ~~||||~~ ||| | 8 |
| Bovril | ~~||||~~ | 5 |

 | 3 marks for a tally chart **or** bar graph(1 mark for different options)(1 mark for tally column **or** correct axes)(1 mark for total/frequency column **or** bars of all correct height)1 mark for “4”1 mark for “plain” | 5 |
| 3. | 40 ÷ 15 = 2 r 10 = 3 minibuses3 x £30 = £90£90 + £150 = £240£240 ÷ 40 = £6 per person | 1 mark for 40 ÷ 151 mark for rounding to 3 minibuses1 mark for cost of 3 minibuses1 mark for 90 + 1501 mark for 240 ÷ 401 mark for correct answer | 6 |
| 4. | ¼ + 20% + 0.15 = 0.25 + 0.2 + 0.15 = 0.61 – 0.6 = 0.4 = $\frac{4}{10}$ = $\frac{2}{5}$ | 1 mark for converting all to percentages or decimals1 mark for subtracting from 11 mark for correct answer oe (accept fractions only) | 3 |
| 5. | 44 grey tiles£6.20 x 5 = £31.00 | 1 mark for adding 2 tiles to make wall symmetrical1 mark for adding 2 tiles of their own and maintaining symmetry1 mark for calculating grey tiles needed 1 mark for £6.20 x 51 mark for correct answer | 5 |

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| 6. | 14 cubes  | 1 mark for correct answer1 mark for correct plan | 2 |
| 7. | £80 000 - £60 000 = £20 0002% of £60 000 = £12001% of £20 000 = £200£1200 + £200 = £1400 | 1 mark for calculating amount to be charged at each rate1 mark for calculating 2% of £60 0001 mark for calculating 1% of £20 0001 mark for correct answer | 4 |

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| 8. | Multiples of:

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| **12** | **8** | **9** |
| 24 | 16 | 18 |
| 36 | 24 | 27 |
| 48 | 32 | 36 |
| 60 | 40 | 45 |
| 72 | 48 | 54 |
| 84 | 56 | 63 |
| 96 | 64 | 72 |
| 108 | 72 | 81 |
| 120 | 80 | 90 |

72 – 70 = 2 bags | 1 mark for listing multiples of at least 2 of the 3 numbers1 mark for identifying 72 as the LCM1 mark for 72 – 701 mark for correct answer | 4 |
| 9. | First offer: Of 6 pots you pay for 4 potsSecond offer: Of 6 pots you pay for 4.5 potsFirst offer is better as pay for fewer pots | 1 mark for calculating with first offer1 mark for calculating with second offer1 mark for correct answer1 mark for reasoning | 4 |
| 10. | There are many possibilities, all 5 units (the length of AB) fromeither A or B. For example,(1,6), (2,3), (6,1), (9,2), (10,3), (11,6) and so on(Note that the perpendicular bisector of AB does not passthrough any point that has whole number coordinates) | 1 mark for each coordinate | 3 |
| 11. | $\frac{3}{10}$ = $\frac{90}{300}$300 – 90 = 210 | 1 mark for calculating 300 counters in total1 mark for correct answer | 2 |

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| 12. | Median of 11 so place 11 on middle lineMode of 12 so place two 12s after 11Mean of 10 so any two other numbers less than 11 which have a sum of 15 (a + b = 15)a b 11 12 12 | 1 mark for median calculation1 mark for mode calculation1 mark for mean calculation | 3 |
| 13. | 10% of £55.90 = £5.59£55.90 + £5.59 = £61.496% of £7.855% = £0.391% = £0.08 = £0.47£7.85 + 47p = £8.32 | 2 marks for calculating total of bill1 mark for calculating 10% of total1 mark for correct answer1 mark for calculating 5% or 1%1 mark for calculating 6%1 mark for correct answer | 7 |