Bands 2 – 4 Problem Solving – Test 3 Answers

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| 1. | £ 7.60£ 9.50£12.60£14.50 +£44.20\_\_Alex will have enough, and he will have 80p left over | 1 mark for correct information selected from table1 mark for prices added together1 mark for correct answer1 mark for correct conclusion | 4 |
| 2. | 10 000 x 0.995 = 995010 000 – 9950 = 50**or**1 – 0.995 = 0.00510 000 x 0.005 = 50 | 1 mark for 1 – or 10 000 –1 mark for multiplying by 0.995 or 0.0051 mark for correct answer | 3 |
| 3. | 500 ÷ 35 = 14 r 10 **or** 14.28One box will last 14 days, so yes it will last 2 weeks 130 = 13 = 6.5 = 6.5%2000 = 200 = 10023 x 7 x 30 = 23 x 210 = 4830 cm³ = 161 x 30 = 4830 cm³ = 690 x 7 = 4830 cm³ | 1 mark for 500 ÷ 351 mark for 14 seen1 mark for correct conclusion1 mark for 1 mark for 1 mark for calculation1 mark for correct answer1 mark for correct units | 8 |

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| 4. | 94 singles:94 x £2.99 = £281.0612 boxes:12 x £16.95 = £203.4011 boxes and 6 singles:(11 x £16.95) + (6 x £2.99) = £186.45 + £17.94 = £204.39Cheapest way to buy is 12 boxes | 1 mark for cost of 94 singles1 mark for cost of 12 boxes1 mark for cost of 11 boxes1 mark for cost of 6 singles1 mark for correct conclusion | 5 |
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| **Paints R Us** | **Deco Mart** |
| 6 tins neededPay for 44 x £2.40 = £9.60 | 15% of £2.00 = 30p£2.00 – 30p = £1.706 x £1.70 = £10.20 |

Ashley should buy from Paints R Us | 1 mark for 3 for 2 offer applied1 mark for £9.60 seen1 mark for 15% of £2.00 calculated1 mark for subtracting from £2.001 mark for £10.20 seen1 mark for correct conclusion | 6 |
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| **Caribbean Calypso** | **Royal European** |
| 10% of £2329 = £232.90£2329 – £232.90 = £2096.10**or**0.9 x £2329 = £2096.10 | 5% of £2147 = £107.35£2147 - £107.35 = £2039.65**or**0.95 x £2147 = £2039.65 |

Debra and Mark should choose Royal European because it is cheaper by £56.45 | 1 mark for 10% of £2329 or 0.9 x £23291 mark for £2096.101 mark for 5% of £2147 or 0.95 x £21471 mark for £2039.651 mark for correct conclusion | 5 |
| 7. | 160 L x 365 = 58400 L = 58.4 cubic metres58.4 x 91.22 = 5327.248p = £53.27£53.27 + £28.20 = £81.47Harry should have a water metre – it will save him £25.53 per year | 1 mark for amount used in litres1 mark for amount used in cubic metres1 mark for cost in pounds for water used1 mark for total cost on meter1 mark for correct conclusion | 5 |
| 8. | £3.50 + £3.50 + £2.50 + £2.20 = £11.70 to pay€10 ÷ 1.25 = £8 paid in Euros£11.70 - £8 = £3.70 to pay in pounds | 1 mark for adding everything together1 mark for €10 = £81 mark for £11.70 - £81 mark for correct answer | 4 |
| 9. | Petra : Stephen = 1 : 3£240 ÷ 1 : 3 = £60 : £80**or**Petra + Stephen = n + 3n = £240n = £603n = £180 | 1 mark for 1 : 3 **or** n + 3n **or** ÷41 mark for £601 mark for £180 | 3 |
| 10. | 1 – ($\frac{1}{3}$ + $\frac{2}{9}$) = $\frac{4}{9}$$\frac{4}{9}$ = 32 so $\frac{1}{9}$ = 8$\frac{2}{9}$ = 2 x 8 = 16 marbles | 1 mark for attempt to subtract fractions from 11 mark for $\frac{4}{9}$ seen1 mark for $\frac{1}{9}$ calculated1 mark for correct answer | 4 |

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| 11. | N = 3O = xR = x – 10T = 21C = 294294 = 3(x + x – 10 + 42)294 = 3(2x + 32) 98 = 2x + 32 66 = 2x 33 = x£33 | 1 mark for O or R substituted1 mark for complete equation1 mark for brackets expanded or ÷ 31 mark for correct answer | 4 |