

| question | answer | marks | notes | | | | | | | | | | | | | | | |
|---|--|-----------|--|-------|-----|------------------|----|-----|------------------------------------|----------|------|-------------------------------------|----|------|-------------------|-----------|---|--|
| 1. Use simple formulae. | | | | | | | | | | | | | | | | | | |
| a | $a = 9, b = 5, c = 8$ | 3 | | | | | | | | | | | | | | | | |
| b | $d = 5, e = 17, f = 2$ | 3 | | | | | | | | | | | | | | | | |
| c | $y = 25, y = 58, y = 36$ | 3 | | | | | | | | | | | | | | | | |
| d | 77p 20 pens | 3 | For the second part, 2 marks for a correct answer, but 1 mark for correct calculations with only 1 error in calculating. | | | | | | | | | | | | | | | |
| 2. Generate and describe linear number sequences. | | | | | | | | | | | | | | | | | | |
| a | 86, 97 | 1 | | | | | | | | | | | | | | | | |
| b | 51 | 1 | | | | | | | | | | | | | | | | |
| c | 44, 62 | 1 | | | | | | | | | | | | | | | | |
| d | <table><tr><th>term</th><th>calculation</th><th>value</th></tr><tr><td>1st</td><td>$3 \times 1 - 7$</td><td>-4</td></tr><tr><td>5th</td><td>$3 \times 5 - 7$</td><td>8</td></tr><tr><td>10th</td><td>$3 \times 10 - 7$</td><td>23</td></tr><tr><td>20th</td><td>$3 \times 20 - 7$</td><td>53</td></tr></table> | term | calculation | value | 1st | $3 \times 1 - 7$ | -4 | 5th | $3 \times 5 - 7$ | 8 | 10th | $3 \times 10 - 7$ | 23 | 20th | $3 \times 20 - 7$ | 53 | 4 | Award one mark for each box correctly completed. |
| term | calculation | value | | | | | | | | | | | | | | | | |
| 1st | $3 \times 1 - 7$ | -4 | | | | | | | | | | | | | | | | |
| 5th | $3 \times 5 - 7$ | 8 | | | | | | | | | | | | | | | | |
| 10th | $3 \times 10 - 7$ | 23 | | | | | | | | | | | | | | | | |
| 20th | $3 \times 20 - 7$ | 53 | | | | | | | | | | | | | | | | |
| e | $4n + 3$ 43 30th term | 3 | | | | | | | | | | | | | | | | |
| 3. Express missing number problems algebraically. | | | | | | | | | | | | | | | | | | |
| a | $2m + 4$ | 1 | | | | | | | | | | | | | | | | |
| b | $p = q - 10$ and $p + 10 = q$ | 2 | Allow any expression which is correct ($p + 1 = q - 9$) | | | | | | | | | | | | | | | |
| c | $3a = b$ | 1 | | | | | | | | | | | | | | | | |
| di. | £101 | 1 | | | | | | | | | | | | | | | | |
| ii. | 45 shirts | 2 | 2 marks for a correct answer, but 1 mark for correct calculations with only 1 error in calculating. | | | | | | | | | | | | | | | |
| e | $4n - 2$ | 1 | | | | | | | | | | | | | | | | |

| question | answer | marks | notes | | | | | | | | | | |
|--|---|-------------|---|---|---|---|---|---|---|----|---|---|--|
| 4. Find pairs of numbers that satisfy an equation with two unknowns. | | | | | | | | | | | | | |
| a | 1 x 12, 2 x 6, 3 x 4 | 1 | 1 mark for all 3 pairs. | | | | | | | | | | |
| b | 1 x 32, 2 x 16, 4 x 8 | 1 | 1 mark for all 3 pairs. | | | | | | | | | | |
| c | e = 3, f = 7 g = 6, h = 3 l = 8, j = 2 | 3 | 1 mark for each correct pair. | | | | | | | | | | |
| 5. Enumerate possibilities of combinations of two variables. | | | | | | | | | | | | | |
| | 19 – 3 = 6 18 – 12 = 6 17 – 11 = 6 | 1 | 1 mark for all 3 correct combinations identified. | | | | | | | | | | |
| | <table><tr><td>Value of a</td><td>Value of b</td></tr><tr><td>1</td><td>4</td></tr><tr><td>4</td><td>5</td></tr><tr><td>7</td><td>6</td></tr><tr><td>10</td><td>7</td></tr></table> | Value of a | Value of b | 1 | 4 | 4 | 5 | 7 | 6 | 10 | 7 | 4 | |
| Value of a | Value of b | | | | | | | | | | | | |
| 1 | 4 | | | | | | | | | | | | |
| 4 | 5 | | | | | | | | | | | | |
| 7 | 6 | | | | | | | | | | | | |
| 10 | 7 | | | | | | | | | | | | |
| | | Total 40 | | | | | | | | | | | |