

question	answer	marks	notes															
1. Use simple formulae.																		
a	<table border="1"> <tr> <td>$3a = 12$</td> <td>$a = \mathbf{4}$</td> </tr> <tr> <td>$30 = 5b$</td> <td>$b = \mathbf{6}$</td> </tr> <tr> <td>$8c = 72$</td> <td>$c = \mathbf{9}$</td> </tr> <tr> <td>$48 = 12d$</td> <td>$d = \mathbf{4}$</td> </tr> </table>	$3a = 12$	$a = \mathbf{4}$	$30 = 5b$	$b = \mathbf{6}$	$8c = 72$	$c = \mathbf{9}$	$48 = 12d$	$d = \mathbf{4}$	4	Award one mark for each answer.							
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b	<table border="1"> <tr> <td>$20 = 4h + 4$</td> <td>$h = \mathbf{4}$</td> </tr> <tr> <td>$3i + 5 = 11$</td> <td>$i = \mathbf{2}$</td> </tr> <tr> <td>$14 = 6j - 4$</td> <td>$j = \mathbf{3}$</td> </tr> <tr> <td>$2k - 5 = 5$</td> <td>$k = \mathbf{5}$</td> </tr> </table>	$20 = 4h + 4$	$h = \mathbf{4}$	$3i + 5 = 11$	$i = \mathbf{2}$	$14 = 6j - 4$	$j = \mathbf{3}$	$2k - 5 = 5$	$k = \mathbf{5}$	4	Award one mark for each answer.							
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c	<table border="1"> <tr> <td>$\triangle = 3a$</td> <td>$\triangle = \mathbf{21}$</td> </tr> <tr> <td>$4 + a =$</td> <td>$\pentagon = \mathbf{11}$</td> </tr> <tr> <td>$\diamond = 10 - a$</td> <td>$\diamond = \mathbf{3}$</td> </tr> <tr> <td>$a + a =$</td> <td>$\square = \mathbf{14}$</td> </tr> </table>	$\triangle = 3a$	$\triangle = \mathbf{21}$	$4 + a =$	$\pentagon = \mathbf{11}$	$\diamond = 10 - a$	$\diamond = \mathbf{3}$	$a + a =$	$\square = \mathbf{14}$	4	Award one mark for each answer.							
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2. Generate and describe linear number sequences.																		
a	39 47 55 63 71	1																
b	26	1																
c	22 38 54 70	1																
d	<table border="1"> <thead> <tr> <th>Term</th> <th>Calculation</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>1st</td> <td>$5 \times 1 + 1$</td> <td>6</td> </tr> <tr> <td>5th</td> <td>$5 \times 5 + 1$</td> <td>26</td> </tr> <tr> <td>10th</td> <td>$5 \times 10 + 1$</td> <td>51</td> </tr> <tr> <td>20th</td> <td>$5 \times 20 + 1$</td> <td>101</td> </tr> </tbody> </table>	Term	Calculation	Value	1st	$5 \times 1 + 1$	6	5th	$5 \times 5 + 1$	26	10th	$5 \times 10 + 1$	51	20th	$5 \times 20 + 1$	101	4	Award one mark for each box correctly completed.
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$3 \times 4 - 1$	$3 \times 5 - 1$	$3 \times 4 + 1$																
f	$10n + 2 = 92$	2	Award two marks for the formula correctly identified. Award one mark for a correct answer, but no formula.															
3. Express missing number problems algebraically.																		
a	<table border="1"> <tr> <td>$9h - 16$</td> <td>$16h + 9$</td> <td>$9h + 16$</td> </tr> </table>	$9h - 16$	$16h + 9$	$9h + 16$	1													
$9h - 16$	$16h + 9$	$9h + 16$																
b	When Emily is 11, Becky will be 15 When Becky is 17, Emily will be 13	2	Award one mark for each correct answer.															
c	$(l+w) \times 2$ or $2l+2w$	1																

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d	The cost of tiling a floor where the area is 10 square metres would be £60	1	Award one mark for each correct answer.										
	The area of a floor where the tiles cost £110 would be 20 square metres	2	Award one mark if it is clear that the calculation $(110 - 10) \div 5$ has been used but the answer is wrong.										
e	$8h - 5$ or $8 \times h - 5$ or $(8h) - 5$ or $(8 \times h) - 5$	1											
4. Find pairs of numbers that satisfy an equation with two unknowns.													
a	1×18 2×9 3×6	1	Award one mark for all three number pairs identified.										
b	1×12 2×6 3×4	1											
c	$e = 3$ $f = 7$ $g = 6$ $h = 3$ $i = 8$ $j = 2$	3	Award one mark for each pair of numbers identified.										
5. Enumerate possibilities of combinations of two variables.													
	$1 \times 2 = 2$ $2 \times 2 = 4$ $3 \times 2 = 6$ $4 \times 2 = 8$ $5 \times 2 = 10$	1	Award one mark for all 5 possible combinations identified.										
	<table border="1"> <thead> <tr> <th>Value of a</th> <th>Value of b</th> </tr> </thead> <tbody> <tr> <td>2</td> <td>18</td> </tr> <tr> <td>1</td> <td>11</td> </tr> <tr> <td>4</td> <td>32</td> </tr> <tr> <td>3</td> <td>25</td> </tr> </tbody> </table>	Value of a	Value of b	2	18	1	11	4	32	3	25	4	
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2	18												
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		Total 40											