

question	answer	marks	notes															
1. Use simple formulae.																		
a	<table><tr><td><math>3a = 12</math></td><td><math>a = \mathbf{4}</math></td></tr><tr><td><math>30 = 5b</math></td><td><math>b = \mathbf{6}</math></td></tr><tr><td><math>8c = 72</math></td><td><math>c = \mathbf{9}</math></td></tr><tr><td><math>48 = 12d</math></td><td><math>d = \mathbf{4}</math></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><tr><td><math>20 = 4h + 4</math></td><td><math>h = \mathbf{4}</math></td></tr><tr><td><math>3i + 5 = 11</math></td><td><math>i = \mathbf{2}</math></td></tr><tr><td><math>14 = 6j - 4</math></td><td><math>j = \mathbf{3}</math></td></tr><tr><td><math>2k - 5 = 5</math></td><td><math>k = \mathbf{5}</math></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><tr><td><math>\triangle = 3a</math></td><td><math>\triangle = \mathbf{21}</math></td></tr><tr><td><math>4 + a =</math></td><td><math>\pentagon = \mathbf{11}</math></td></tr><tr><td><math>\diamond = 10 - a</math></td><td><math>\diamond = \mathbf{3}</math></td></tr><tr><td><math>a + a =</math></td><td><math>\square = \mathbf{14}</math></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	<b>39   47   55   63   71</b>	1																
b	26	1																
c	<b>22   38   54   70</b>	1																
d	<table><tr><td>Term</td><td>Calculation</td><td>Value</td></tr><tr><td>1st</td><td><math>5 \times 1 + 1</math></td><td>6</td></tr><tr><td>5th</td><td><b><math>5 \times 5 + 1</math></b></td><td><b>26</b></td></tr><tr><td>10th</td><td><b><math>5 \times 10 + 1</math></b></td><td>51</td></tr><tr><td>20th</td><td><math>5 \times 20 + 1</math></td><td><b>101</b></td></tr></table>	Term	Calculation	Value	1st	$5 \times 1 + 1$	6	5th	<b><math>5 \times 5 + 1</math></b>	<b>26</b>	10th	<b><math>5 \times 10 + 1</math></b>	51	20th	$5 \times 20 + 1$	<b>101</b>	4	Award one mark for each box correctly completed.
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e	<table><tr><td><math>\textcircled{3 \times 4 - 1}</math></td><td><math>3 \times 5 - 1</math></td><td><math>3 \times 4 + 1</math></td></tr></table>	$\textcircled{3 \times 4 - 1}$	$3 \times 5 - 1$	$3 \times 4 + 1$	1													
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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><tr><td><math>9h - 16</math></td><td><math>16h + 9</math></td><td><math>\textcircled{9h + 16}</math></td></tr></table>	$9h - 16$	$16h + 9$	$\textcircled{9h + 16}$	1													
$9h - 16$	$16h + 9$	$\textcircled{9h + 16}$																
b	When Emily is 11, Becky will be <b>15</b> When Becky is 17, Emily will be <b>13</b>	2	Award one mark for each correct answer.															
c	$(l+w) \times 2$ <b>or</b> $2l+2w$	1																

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