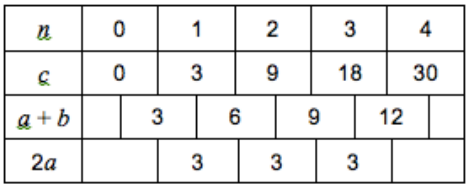
Topic Test 1 Mark Scheme

Number recap and review - Higher

Q	Answer	Mark	Comments
1	$\frac{1}{2}$ = 0.5 and $\frac{2}{5}$ = 0.4 and $\frac{3}{8}$ = 0.375	M1	
	$\frac{4}{11}$ = $0.\dot{3}6\dot{}$	A1	
2	**Alternative method 1**		
	List or table of numbers of matches for patterns 1, 2, 3 and 4 and calculation of second difference of 3 3 9 18 30 6 9 12 3 3	M1	oe
	Subtraction of $1\frac{1}{2}n^2$ from quadratic sequence $1\frac{1}{2}$ 3 $4\frac{1}{2}$ 6	M1dep	
	(Linear sequence) $1\frac{1}{2}n$	A1	
	$1\frac{1}{2}n^2 + 1\frac{1}{2}n$	A1ft	oe ft $1\frac{1}{2}n^2$ plus their linear if both Ms awarded.

Q	Answer	Mark	Comments
2	**Alternative method 2**		
	Sets up table of differences  	M1	
	Extends table back to $n = 0$	M1	
	Identifies rows as $2a$, $a + b$ and c	A1	
	$1\frac{1}{2}n^2 + 1\frac{1}{2}n$	A1	oe
3	24.5 or 25.5	B1	Allow 25.49
	215 or 225	B1	Allow 224.99
	their lower trailer limit ÷ their upper cement limit or 215 ÷ 25.5 or 8.43	M1	
	8	A1	
4	$\frac{8}{9}$	B1	
5	$250 \leq x < 255$	B1	
6	3	B1	
7	4.5555.. – 0.4555… or $9x = 4.1$	B1	
	$\frac{41}{90}$	B1	

Q	Answer	Mark	Comments
8	$\frac{1}{25}$	B2	B1 for $125^{\frac{1}{3}} = 5$
9	$\frac{1}{2} \times 3\sqrt{6} \times 2\sqrt{3} \times \frac{1}{\sqrt{2}}$	M1	
	9	M1	
10	$\frac{1}{4}$	B1	