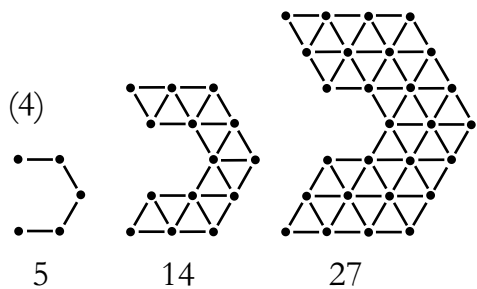


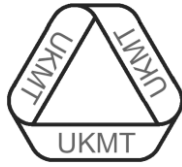
UKMT Team Maths Challenge
National Final 2010 – Crossnumber

1		2		3		4		5
				6				
7	8		9			10		
			11		12			
13							14	
		15						
16					17	18		19
		20		21				
22				23				

Across

- 1 A power of eleven (5)
- 4 A square number which is the sum of a three-digit cube number and a three-digit fourth power (3)
- 6 The sum of five consecutive Fibonacci numbers (3)
- 7 The lowest common multiple of 1 Down and 21 Down (4)
- 10 A prime factor of 32123 (3)
- 11 The number of dots in the sixtieth pattern in this sequence: (4)
- 13 Twenty-five more than a multiple of seven and twenty-five less than a multiple of seventeen (2)
- 14 The difference between two cube numbers (2)
- 15 One more than a multiple of four; its digits are the same as those of 4 Down but not in the same order (4)
- 16 An odd number with ten factors; its digits are consecutive (3)
- 17 (13 Across) percent of 12 Down; the product of its digits is ten (4)
- 20 The square of 21 Down (3)
- 22 The area of a rhombus whose perimeter is 120 and the lengths of whose diagonals are in the ratio 3 : 4 (3)
- 23 A multiple of eleven with two distinct digits, each occurring more than once (5)



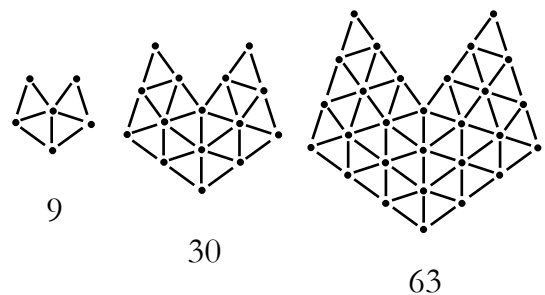


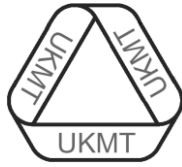
UKMT Team Maths Challenge
National Final 2010 – Crossnumber

1		2		3		4		5
				6				
7	8		9			10		
			11		12			
13							14	
		15						
16					17	18		19
		20		21				
22				23				

Down

- 1 A prime factor of 23432 (3)
- 2 A prime number, the product of whose digits is (13 Across) percent of (13 Across) (3)
- 3 The sum of two Fibonacci numbers (2)
- 4 A number, the product of whose digits is zero (4)
- 5 A power of 111 (5)
- 8 The total of the interior angles (in $^{\circ}$) of a polygon (3)
- 9 The number of line segments in the fortieth pattern in this sequence: (4)
- 12 A number more than 15 Across but less than 15 Down (4)
- 13 A multiple of four whose five digits are distinct and have a range of four (5)
- 14 An even multiple of the sixth and twelfth prime numbers (3)
- 15 A multiple of eleven (4)
- 18 The longest side of a right-angled triangle whose shorter sides are 13 Across and 14 Across (3)
- 19 Half of the mean of 2 Down, 3 Down, 10 Across and 16 Across (3)
- 21 The square root of 20 Across (2)





UKMT Team Maths Challenge
National Final 2010
Crossnumber



Team Number

School Name

Answer	1		2		3		4		5	Marks (8)
Mark										
Answer					6					Marks (6)
Mark										
Answer	7	8		9			10			Marks (7)
Mark										
Answer				11		12				Marks (6)
Mark										
Answer	13							14		Marks (6)
Mark										
Answer			15							Marks (6)
Mark										
Answer	16					17	18		19	Marks (7)
Mark										
Answer			20		21					Marks (6)
Mark										
Answer	22				23					Marks (8)
Mark										

Score = _____ /60