



UKMT Team Maths Challenge 2012

National Final 2012
Crossnumber

1			2		3			4
			5					
		6			7	8		
	9			10		11		
12		13			14			15
	16			17		18		
19		20	21		22			23
			24					
25					26			

Across

- 1 The value of $2x^2 - 2x - 3$ when 22 Across is substituted for x . (4)
- 3 The difference between 16 Across and the sum of 21 Down and 22 Down (4)
- 5 The interior angle of a regular polygon with the number of sides equal to 10 Down (3)
- 6 Half a triangle number (2)
- 7 A square number (2)
- 9 Mean of 9 Across, 11 Across, 14 Across and 16 Across (2)
- 11 An even Fibonacci number (2)
- 13 Half the difference between 22 Down and 19 Down (2)
- 14 The difference between 23 Down and 24 Across (2)
- 16 The exterior angle of a regular polygon with $(17 \text{ Down} + 15 \text{ Down})$ sides (2)
- 18 A multiple of 9 (2)
- 20 The smaller solution of $\begin{cases} 5x - 4y = 42 \\ 7x - 5y = 87 \end{cases}$ (2)
- 22 The larger solution of $\begin{cases} 5x - 4y = 42 \\ 7x - 5y = 87 \end{cases}$ (2)
- 24 One of the angles of an isosceles triangle which has an angle of 17 Down° (3)
- 25 Twice a Fibonacci number (4)
- 26 Half the product of 18 Across and 16 Across (4)



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19		20	21		22			23
			24					
25					26			

Down

- 1 The sum of 23 Down and 24 Across (3)
- 2 A prime number (3)
- 3 The square root of 24964 (3)
- 4 The interior angle of a regular polygon with 17 Down sides (3)
- 6 A multiple of 79 and also of 109 (5)
- 8 The result of multiplying 100 more than the difference between 1 Across and 25 Across by eleven (5)
- 10 The highest common factor of 616 and 520 (1)
- 12 The square root of 13 Across (1)
- 15 The solution of $2x^3 + 14 = 700$ (1)
- 17 One less than the square root of 7 Across (1)
- 19 An odd cube number (3)
- 21 The sum of 3^2 , 22 Down and 24 Across (3)
- 22 The square of a Fibonacci number (3)
- 23 The product of 11 Across and 15 Down (3)



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Team Number School Name

Answer	1			2		3			4	Marks (8)
Mark										
Answer				5						Marks (5)
Mark										
Answer			6			7	8			Marks (6)
Mark										
Answer		9			10		11			Marks (5)
Mark										
Answer	12		13			14			15	Marks (6)
Mark										
Answer		16			17		18			Marks (5)
Mark										
Answer	19		20	21		22			23	Marks (6)
Mark										
Answer				24						Marks (5)
Mark										
Answer	25					26				Marks (8)
Mark										

Total = _____ /54

+ 6

Score = _____