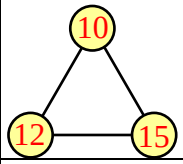
2004 IMSO Answers

SHORT ANSWER

1.	156	**2.**	120	**3.**	17	**4.**	math	**5.**	4 -3 2 -1 1 3 0 5 -2
6.	10	**7.**	12000	**8.**	60	**9.**		**10.**	*H-A-F-E*
11.	70	**12.**	11	**13.**	764	**14.**	06:55	**15.**	432+657=1089, 452+637=1089, 423+675=1098, 437+589=1026, 324+765=1089.
16.	S	**17.**	20	**18.**	36	**19.**	124	**20.**	69999
21.	56	**22.**	8652	**23.**	33	**24.**	8	**25.**	$\frac{\pi}{1024}$ or $\frac{157}{51200}$

ESSAY PROBLEMS

1.	40	**2.**	9	**3.**	105	**4.**	15
5.	120	**6.**	100	**7.**	156	**8.**	6

9.	700	**10.**	A	**11.**	66	**12.**	300	**13.**	4

EXPLORATION PROBLEMS

1.	(a) There are 21 blue triangles and 15 yellow triangles. (b) There are 55 blue triangles and 45 yellow triangles. (c) There are 210 blue triangles and 190 yellow triangles.	**2.**	(a) *BHGD* (or its varians) and *AIHD* (or its varians). (b) *AFIG*, *ACFG*, *ACIH*, *ACHG*, *ACID*, *CIGD*, and *ABIG*. (c) 28
3.	(a) There are 196 ways. (b) There are 168 ways. (c) There are 168 ways.	**4.**	(a) We can find 7 squares. (b) We can find 9 squares. (c) We can find 16 squares. (d) We can find 23 squares.
5.	The length of the longest possible route is $30\times20+50\times20=1600$ m.	**6.**	The length of the sides of the cube is 8 cm.