Puzzle: June 2025

As a mathematician I can think of nothing better than having a question chosen by UKMT.

In July 2022 I set the question below only with $A = \{1 \ldots 16\}$ and $B = \{4035 \ldots 4051\}$.

The only other question I could find for $A = \{1 \ldots 16\}$ and $B < 8000$ was below!!

This required hard work!!

Each of the numbers in the set

$A = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15 \text{ and } 16\}$

is paired with a different number in the set

$B = \{3483, 3484, 3485, 3486, 3487, 3488, 3489, 3490, 3491, 3492, 3493, 3494, 3495, 3496, 3497 \text{ and } 3498\}$

in such a way that, for each pair (m, n) with m in A and n in B, n is exactly divisible by m.

For example $\frac{3483}{9} = 387 \ldots \frac{3498}{6} = 583$

What is the sum of the sixteen integers $387 + \ldots + 583$?

The names of those sending answers to volunteering@ukmt.org.uk by

31st July will appear in the next UKMT News.

Puzzle: March 2025 Answers:

1. 2004	2. 2010	3. 2025	4. 2000	5. 1997	6. 2020	7. 2014
8. 1996	9. 2018	10. 1998	11. 2008	12. 2017	13. 2021	14. 2009
15. 2002	16. 2006	17. 2023	18. 2003	19. 2015	20. 2011	21. 2007
22. 2016	23. 2024	24. 2019	25. 2022	26. 2013	27. 1999	
28. 2012	29. 2001	30. 2005.				

Correct answers from:

Alan S

PTMR	24	
JMO	A 163°	B 31
TMC	Group (a) 184	(b) 920
	Circle (a) 2019	(b) 84
IMOK	Cayley	1:1
	Hamilton	12360
	Maclaurin	$x = {}^{3}/_{5}, y = {}^{-8}/_{5}$ and $x = {}^{-3}/_{5}, y = {}^{8}/_{5}$.
SMC	${}^{1}/_{5}$	