

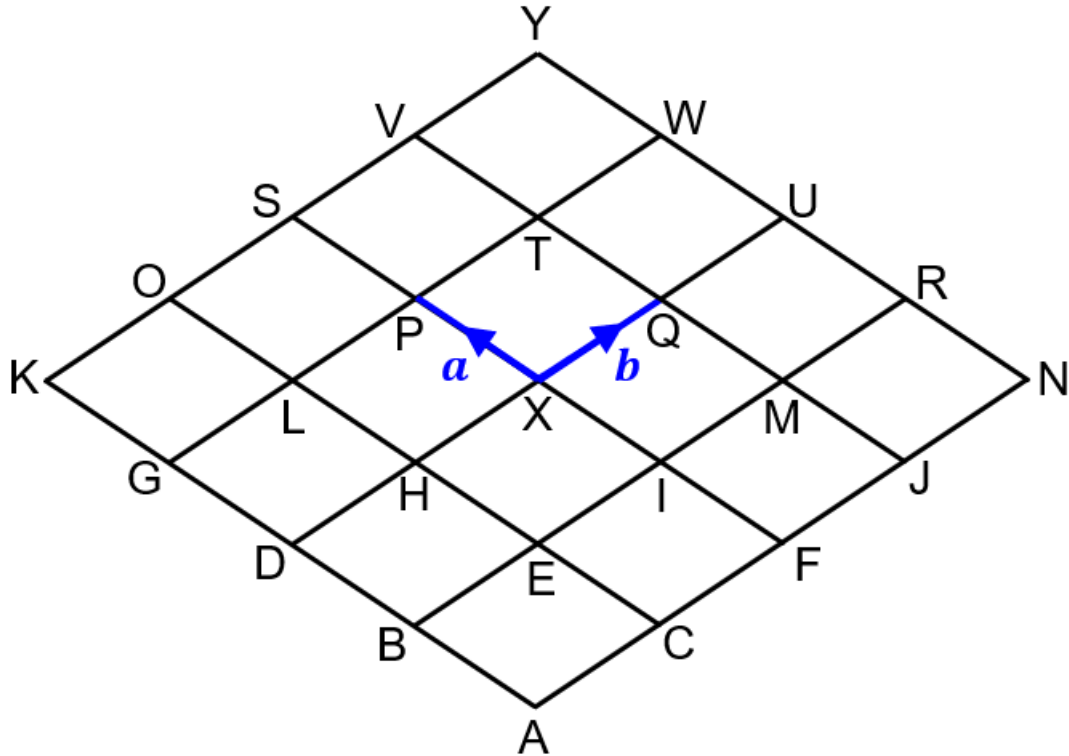


# Decode the Maths Joke



## Defining Vectors

Each vector in terms of  $a$  and  $b$  defines a path which starts at X and ends at a given letter. Find each of the letters and then decode the joke.



Vector	$a + 2b$	$-b$	$-a - b$	$-a + 2b$	$-a - b$		$-2b$
Letter	W	H	E	R	E		D
Vector	$2a - b$		$-a + b$	$-2a - 2b$	$a + b$	$-b$	$2a$
Letter	O		M	A	T	H	S
Vector	$a + b$	$-a - b$	$-2a - 2b$	$-2a - b$	$-b$	$-a - b$	$-a + 2b$
Letter	T	E	A	C	H	E	R
Vector	$2a$		$a - 2b$	$2a - b$		$2a - b$	$-2a + 2b$
Letter	S		G	O		O	N
Vector	$-b$	$2a - b$	$a - b$	$-a$	$-2b$	$-2a - 2b$	$2a + 2b$
Letter	H	O	L	I	D	A	Y
Vector	?		$a + b$	$-a$	$-a + b$	$-a - b$	$2a$
Letter	?		T	I	M	E	S
Vector	$2a$	$b$	$2b$	$-2a - 2b$	$-a + 2b$	$-a - b$	!
Letter	S	Q	U	A	R	E	!