

## Substitution code breaker – brackets, indices and fractions

$a = 5$

$b = 3$

$c = 10$

$d = 100$

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
0	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

Evaluate each expression by substituting in the values of  $a$ ,  $b$ ,  $c$  and  $d$ . To decipher the code and reveal a Maths joke, replace each number with the matching letter shown.

$\frac{11c}{a}$	$ab - 8$	$b^0 - 1$	$\frac{d}{a} - 1$		$\frac{d}{10}$	$b^2 - 1$	$ab - 2$	$\frac{3d}{10c}$		$7(a - b)$	$\frac{a^2}{5}$		
_____	_____	_____	_____		_____	_____	_____	_____		_____	_____		
$\frac{ac}{2} - 6$	$\frac{d}{a} - b$	$\frac{400}{d}$	$2\left(\frac{a+1}{b}\right)$		$\frac{9}{b}$	$\frac{d}{a} - 6$	$\frac{d}{a^2}$	$b(c - 4)$		$\frac{d}{10} - c$			
_____	_____	_____	_____		_____	_____	_____	_____		_____			
$\frac{bd}{5a}$	$\frac{b^2}{3b} - 1$	$a^2 - 2b$	$\frac{ab-1}{2}$	$\frac{d}{a} - 2$		$2c - d^0$	$\frac{d}{25}$	$b^3 - 3^b$	$\frac{c}{a}$	$\frac{d}{c} - 3$	$\frac{1}{2}c - 1$	$b^2 + 8$	
_____	_____	_____	_____	_____		_____	_____	_____	_____	_____	_____	_____	
$d \div ac$	$2c - b^2$	$a^2 - 17$	$3(a - 1)$	$\frac{d}{c^2}$									
_____	_____	_____	_____	_____		?							
						$b^3 - 3b$	$a^2 - 1$	$\frac{2bc}{a}$	$\frac{2c+4}{a-b}$	$b^2 - a$	$\frac{c^2}{b+2} - 1$	$bc - 13$	$b^2 + 3a$
						_____	_____	_____	_____	_____	_____	_____	_____