








- 1) The answer to a 3-digit number multiplied by a 1-digit number is 2608. What could the possible calculations be?



	x				

	x				

- 2) The children were each given a different multiplication to complete but forgot to write their names on their work. Calculate the answer to each multiplication. Then, read the clues carefully to identify which calculation each child completed.

Child	Clue	Calculation
Moirag 	The answer to my calculation is an even number.	
Polly 	The answer to my calculation is greater than 5000.	
Rocky 	The sum of the digits for the answer to my calculation is 16.	
Olga 	My calculation required no regrouping.	
Taj 	The answer to my calculation has a place holder.	

A

			2	1	3
	x				3

B

			9	8	9
	x				7

C

			5	9	4
	x				8

D

			9	3	8
	x				8

E

			3	7	5
	x				6

Answers

- 1) *False. The largest 3-digit by 1-digit multiplication calculation is  $999 \times 9$ . This calculation would require 3 lots of regrouping: the 80 ones regrouped into 8 tens, the 80 tens regrouped into 8 hundreds and the 80 hundreds regrouped into 8 thousands. It is impossible for regrouping to occur 4 times when multiplying a 3-digit number by a 1-digit number. You would need to be multiplying a 4-digit number by a 1-digit number for regrouping to happen 4 times.*

			H	T	O	
			9	9	9	
	x				9	
		8	9	9	1	
		8	8	8		



2) a)

		2	7	6
x				9
	2	4	8	4
	2	4	5	

b)

		6	2	1
x				4
	2	4	8	4
	2			

c)

		4	1	4
x				6
	2	4	8	4
	2		2	

d)

		3	4	2
x				7
	2	3	9	4
	2	2	1	

*D is the odd one out because it is the only calculation with the answer 2394. The rest of the calculations all have an answer of 2484.*

- 3)  $453 \times 9 = 4077$   
 $499 \times 8 = 3992$   
 $851 \times 6 = 5106$

*$851 \times 6$  is the closest to 5000 because it is only 106 more than 5000. 3992 is 1008 less than 5000 and 4077 is 923 less than 5000.*






1) There are only two possible calculations. Although 2 is a factor of 2608, 2 would need to be multiplied by a 4-digit number to give 2608.



		H	T	O	
		6	5	2	
x				4	
		2	6	0	8
		2	2		

		H	T	O	
		3	2	6	
x				8	
		2	6	0	8
		2	2	4	

2)

Child	Clue	Calculation
Moirag 	The answer to my calculation is an even number.	C
Polly 	The answer to my calculation is greater than 5000.	B
Rocky 	The sum of the digits for the answer to my calculation is 16.	D
Olga 	My calculation required no regrouping.	A
Taj 	The answer to my calculation has a place holder.	E

A

		2	1	3	
x				3	
		6	3	9	

B

		9	8	9	
x				7	
		6	9	2	3
		6	6	6	

C

		5	9	4	
x				8	
		4	7	5	2
		4	7	3	

D

		9	3	8	
x				8	
		7	5	0	4
		7	3	6	

E

		3	7	5	
x				6	
		2	2	5	0
		2	4	3	