

Patterns for the Nines

Complete the table below. You may use your multiplication table.

Row Number	$9 \times \text{Row Number}$	$10 \times \text{Row Number}$	$10 \times \text{Row Number} - \text{Row Number}$
1	$9 \times 1 = 9$	$10 \times 1 = 10$	$10 - 1 = 9$
2		$10 \times 2 = 20$	$20 - 2 = 18$
3			$30 - 3 = 27$
4			
5			
6			
7			
8			
9			

1. Describe patterns you see in the second column.
2. Describe patterns you see in the third column.
3. Describe patterns you see in the last column.

4. How can you use the patterns to help you learn the facts for the nines?

5. Use your calculator to find the products below. Then add the digits in each product. Repeat adding the digits until you get a one-digit number.

Example: $9 \times 634 = 5706$ $5 + 7 + 0 + 6 = 18$ $1 + 8 = 9$

A. 9×47

B. 9×83

C. 9×89

D. 9×123

E. 9×633

F. 9×697

6. Describe what happens when you add the digits of a multiple of 9.