

Name _____

Date _____

1. a. Multiply. Then, add the tens digit and ones digit of each product.

$1 \times 9 = 9$	$\underline{0} + \underline{9} = \underline{9}$
$2 \times 9 = 18$	$\underline{1} + \underline{8} = \underline{9}$
$3 \times 9 = 27$	$\underline{2} + \underline{7} = \underline{9}$
$4 \times 9 = 36$	$\underline{3} + \underline{6} = \underline{9}$
$5 \times 9 = 45$	$\underline{4} + \underline{5} = \underline{9}$
$6 \times 9 = 54$	$\underline{5} + \underline{4} = \underline{9}$
$7 \times 9 = 63$	$\underline{6} + \underline{3} = \underline{9}$
$8 \times 9 = 72$	$\underline{7} + \underline{2} = \underline{9}$
$9 \times 9 = 81$	$\underline{8} + \underline{1} = \underline{9}$
$10 \times 9 = 90$	$\underline{9} + \underline{0} = \underline{9}$

- b. What is the sum of the digits in each product? How can this strategy help you check your work with the nines facts?

The sum of each product is 9.
If your products digits do not add up to 9 then you know it is incorrect.

- c. Araceli continues to count by nines. She writes, "90, 99, 108, 117, 126, 135, 144, 153, 162, 171, 180, 189, 198. Wow! The sum of the digits is still 9!" Is she correct? Why or why not?

It will work until she gets to 189 and then when you add the digits together it is 18.

2. Araceli uses the number of groups in 8×9 to help her find the product. She uses $8 - 1 = 7$ to get the digit in the tens place and $10 - 8 = 2$ to get the digit in the ones place. Use her strategy to find 4 more facts.

Answers
will
vary
all
possible
answers

$10 \times 9 = 10 - 1 = 9$	$10 - 10 = 0$	$10 \times 9 = 90$
$9 \times 9 = 9 - 1 = 8$	$10 - 9 = 1$	$9 \times 9 = 81$
$7 \times 9 = 7 - 1 = 6$	$10 - 7 = 3$	$7 \times 9 = 63$
$6 \times 9 = 6 - 1 = 5$	$10 - 6 = 4$	$6 \times 9 = 54$
$5 \times 9 = 5 - 1 = 4$	$10 - 5 = 5$	$5 \times 9 = 45$
$4 \times 9 = 4 - 1 = 3$	$10 - 4 = 6$	$4 \times 9 = 36$
$3 \times 9 = 3 - 1 = 2$	$10 - 3 = 7$	$3 \times 9 = 27$
$2 \times 9 = 2 - 1 = 1$	$10 - 2 = 8$	$2 \times 9 = 18$

3. Dennis calculates 9×8 by thinking about it as $80 - 8 = 72$. Explain Dennis' strategy.

$$1 \times 9 = 1 - 1 = 0 \quad 10 - 1 = 9 \quad 1 \times 9 = 9$$

Dennis uses the distributive property

$$9 \times 8 = (10 \times 8) - (1 \times 8)$$

$$9 \times 8 = 80 - 8$$

$$9 \times 8 = 72$$

4. Sonya figures out the answer to 7×9 by putting down her right index finger, shown below.

What is the answer? Explain how to use Sonya's finger strategy.



Sonya is thinking that each finger represents the numbers 1 through 10

1 ones place on the right and 10's tens place on the left. She puts down her 7th finger to represent the 7 in the fact. Then she sees there are 6 fingers on the left and this represents the tens place. To the right of the down finger there are 3 fingers and this represents the ones place. So the product of $7 \times 9 = 63$.