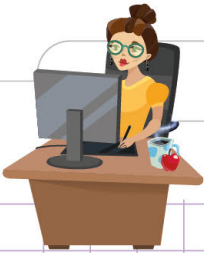


Name: Class:



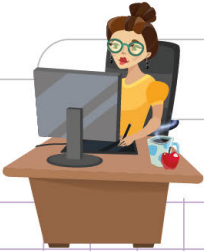
Number pattern: word problems

a. Alisha typed 192 words on Monday, 768 words on Tuesday, 3,072 words on Wednesday, and 12,288 words on Thursday. How many words did Alisha type on Friday, if this pattern continues?

b. Mrs. Simson went to visit her grandchildren. When she got there, she handed 3, 9, 81 candies to the 1st, 2nd, 3rd, and 4th grandchild respectively. If this pattern continues, how many candies will the 5th grandchild who wasn't in the house at the moment get?



Name: Class:



Number pattern: word problems

- a.** Alisha typed 192 words on Monday, 768 words on Tuesday, 3,072 words on Wednesday, and 12,288 words on Thursday. How many words did Alisha type on Friday, if this pattern continues? Firstly, we have to write down the given numbers in a pattern form.

192, 768, 3,072, 12,288, _____

Secondly, let's find the rule to this pattern.

You see that, the numbers in the pattern increase greatly. So this must be a geometric sequence.

So, we need to figure out a common ratio between the numbers.

t_2/t_1	t_3/t_2	t_4/t_3	t_5/t_4
$\frac{768}{192} = \frac{4 \times 192}{1 \times 192}$	$\frac{3,072}{768} = \frac{4 \times 768}{1 \times 768}$	$\frac{12,288}{3,072} = \frac{4 \times 3,072}{1 \times 3,072}$	$\frac{49,152}{12,288} = \frac{4 \times 12,288}{1 \times 12,288}$
= 4	= 4	= 4	= 4

Finally since the common ratio of the given numbers is 4, we have to multiply the number immediately before the missing number by 4 to find the missing number i.e

$$12,288 \times 4 = 49,152$$

Therefore, Alisha typed 49,152 words on Friday.

- b.** Mrs. Simson went to visit her grandchildren. When she got there, she handed 3, 9, 27, 81 candies to the 1st, 2nd, 3rd, and 4th grandchild respectively. If this pattern continues, how many candies will the 5th grandchild who wasn't in the house at the moment get?

Firstly, let's write down the given numbers in a pattern form.

3, 9, 27, 81, _____

Secondly, let's find the rule to this pattern. You see that, the numbers in this pattern are multiples of 3.

So, this must be a geometric sequence with a common ratio of 3.

Finally, to find the missing number, let's multiply 81 by 3

$$81 \times 3 = 243$$

Therefore, the 5th child will get 243 candies.

