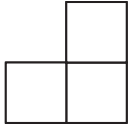


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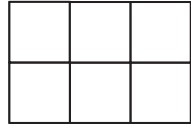
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# Unit Seven Post-Assessment

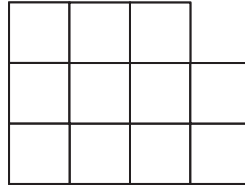
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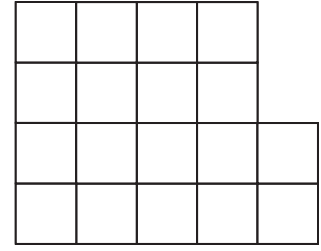
Arrangement 1



Arrangement 2



Arrangement 3



Arrangement 4

**1a** \_\_\_ In the space below, sketch the 5th and 6th arrangements in the above sequence.

**b** How many tile would it take to build the 10th arrangement in this sequence? Use numbers, words, and/or labeled sketches to show how you got your answer.

**c** What do you have to do to figure out how many tile are in any arrangement (or the  $n$ th arrangement) in this sequence? \_\_\_ Write an expression using  $n$  or explain your thinking in words.

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**1d** \_\_\_\_ Make a labeled sketch of the  $n$ th arrangement to show how you got your answer to 1c.

**e** If you graphed the tile sequence on page 1, would the points on the graph lie along a straight line or a curve? How do you know?

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**2a** \_\_\_ Use the standard order of operations to find the answer to the problem below. Show your work.

$$2 \times 15 - 12 \div 3 =$$

**b** Mr. Wong gave the problem in part a to his 5th graders. Shanti says the answer is 6. Ben says the answer is 2. \_\_\_ Insert parentheses to show how each student got his or her answer.

$$\text{Shanti: } 2 \times 15 - 12 \div 3 = 6$$

$$\text{Ben: } 2 \times 15 - 12 \div 3 = 2$$

**3** \_\_\_ Circle the word to show whether each equation below is true or false.

**a**  $32 \times 4 = 4 \times 9$  True False

**b**  $4 \times 2 \times 3 = 2 \times 4 \times 3$  True False

**c**  $15 \times (4 - 2) = (15 \times 4) - 2$   
True False

**d**  $18 = 2n + 4$  if the value of  $n$  is 7.  
True False

**4** \_\_\_ Write the correct number in each box to complete the equations.

**a**  $25 = 4 \times 5 + \square$

**b**  $3 \times \square = 2 \times \square$

**c**  $2 \times \square - 4 = 2 \times 6$

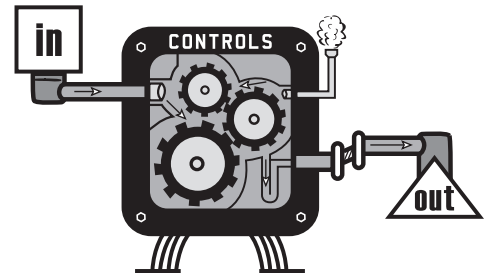
**d**  $40 \div \square = 31 - 21$

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**5** The function machine is back! \_\_\_ Use the clues to fill in the missing numbers on each chart. Describe a rule the machine could use to get the numbers on the chart. Then write an equation to describe the rule.



**a**

in	out
4	8
6	10
10	
2	6
0	
	104
16	20
	59

**b**

in	out
2	5
5	11
7	
10	
6	13
20	
100	201
	25

The rule for getting the output numbers is:

The rule for getting the output numbers is:

Here's how to write the rule as an equation:

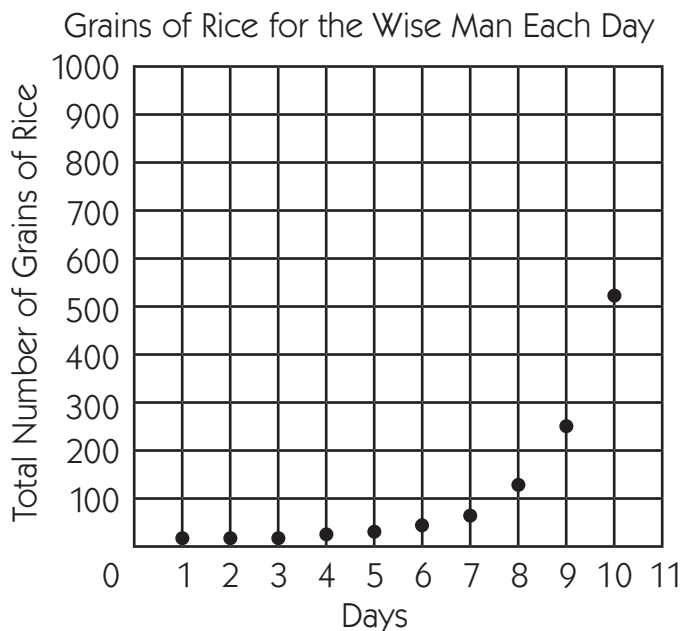
Here's how to write the rule as an equation:

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**6** A king promised to give a wise man double the number of grains of rice each day for 64 days. He gave him 1 grain the first day, 2 the second, 4 the third, and so on. Answer the questions about the graph below.



**a** Is it a graph of a linear pattern or a non-linear pattern? How do you know?

**b** Jon says he can't mark the point for the 11th day on this grid. Do you agree or disagree? Why?

**7a** The sum of two secret numbers is 32. Their difference is 4. What are the two secret numbers? \_\_\_\_ Show all of your work below. You will get an extra point if you can use a method that is not random guess and check to solve this problem.

**b** The two secret numbers are \_\_\_\_ and \_\_\_\_.