

Name: _____

Summer Problem Solving Packet for Rising 6th Graders



Complete the following word problems. They will be checked for completion in September and count as the first homework grade of the marking period. Each strategy will be discussed as it comes up in the textbook throughout the school year.

1) Make a Table:

50 cars and motorcycles were parked in a garage. There were 172 wheels altogether. How many cars were in the garage?

2) Guess and Check:

The combination to a lock consists of two 2-digit numbers. The sum of the numbers is 40, and their product is 336. What are the two 2-digit numbers in the combination?

3) Work Backwards:

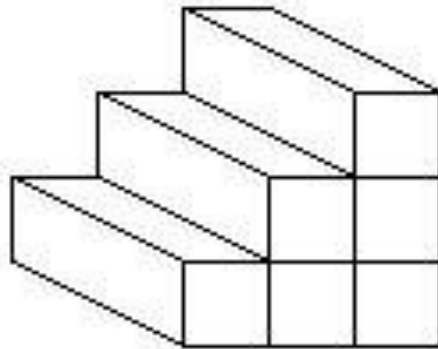
There were some passengers on a train as it left Station A. At Station B, 15 passengers got off and 20 passengers got on. At Station C, 9 passengers got on and none got off. Then there were 45 passengers on board. How many passengers were on the train at Station A?

4) Write/Use a Formula or Equation:

The dimensions of a rectangle are 3 ft. by 5 ft. If these dimensions were doubled, by how many feet would the rectangle's area and perimeter change?

5) Look for a Pattern:

Jose used 6 blocks to build this staircase with 3 steps. How many blocks will Jose need to make an 8-step staircase?



6) Make an Organized List:

Ryan numbered his miniature race car collection according to the following rules:

1. It has to be a 3-digit number.
2. The digit in the hundreds place is less than 3.
3. The digit in the tens place is greater than 7.
4. The digit in the ones place is odd.

If Ryan used every possibility and each car had a different number, how many cars did Ryan have in his collection?

7) Use Logical thinking:

There are four brothers—Al, Bob, Carl, and Dave. Dave is two years older than Bob; Bob is one year younger than Carl; Al, who is 34, is two years younger than Carl. How old is each brother?

8) Solve a Simpler Problem:

Kevin painted his room. He used $\frac{1}{3}$ of a gallon to paint the **whole room**. What fraction of a gallon did he use for each of the 4 walls of his room if he used the same amount of paint on each wall?

9) Draw a Diagram:

Mia's family is driving to New York City. The trip is 510 miles long. Forty-two miles before the halfway point of the trip, they stop for lunch. How much farther do they have to drive to get to New York City?

10) Make a Graph:

Natalie's family enjoys bird watching. Each December, they keep track of the number of birds they see during the month. Natalie wonders how the numbers of birds they saw in 2009 compares to the number of birds they saw in 2008. Which bird sighting increased the most from 2008 to 2009, **and** by how much? (**Draw a double bar graph to help you solve this problem.**)

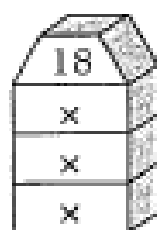
2008	
Red-bellied Woodpecker	55
American Goldfinch	80
Northern Cardinal	45
Blue Jay	70
Robin	30

2009	
Northern Cardinal	50
Robin	20
American Goldfinch	70
Blue Jay	80
Red-bellied Woodpecker	40

Factor Towers



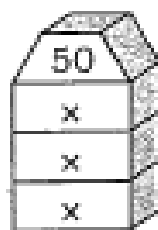
Write a pair of factors in each "story" of the factor tower. Count the number of different factors and write this number in the blank. Then answer the questions below.



Number of factors _____



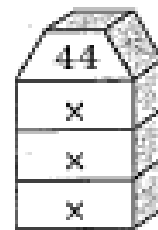
Number of factors _____



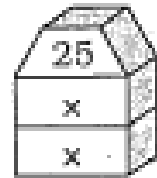
Number of factors _____



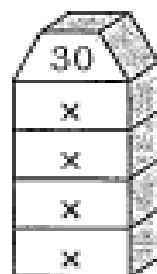
Number of factors _____



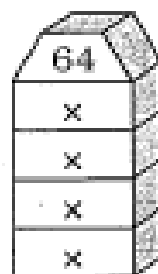
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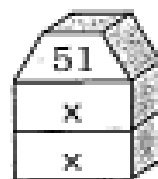
Number of factors _____



Number of factors _____



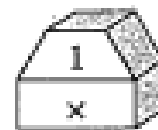
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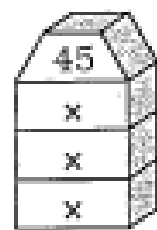
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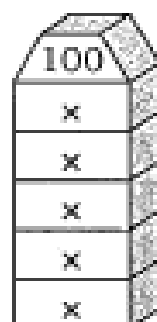
Number of factors _____



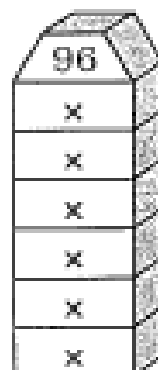
Number of factors _____



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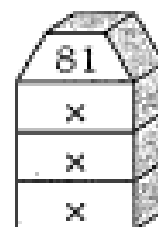
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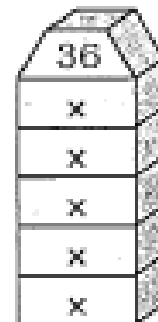
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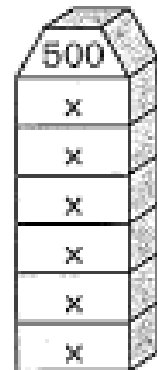
Number of factors _____



Number of factors _____



Number of factors _____



Number of factors _____

- Numbers that are multiplied to form a product are called _____.
- Which of the "tower numbers" have exactly two factors? _____
- Numbers that have exactly two factors are called _____ numbers.
- Numbers that are squares of integers are called _____.
- Which of the "tower numbers" have an odd number of factors? _____
- Numbers that have an odd number of factors are _____.
- List all the prime numbers less than 20: _____
- List all the perfect squares less than 101: _____