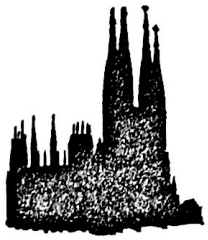
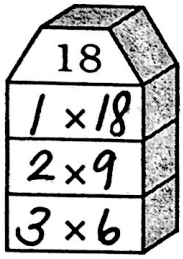
26 pts

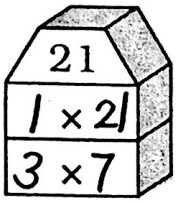
Factor Towers



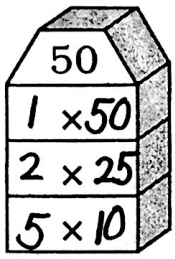
Write a pair of factors in each "story" of the factor tower. Count the number of *different* factors and write this number in the blank. Then answer the questions below.



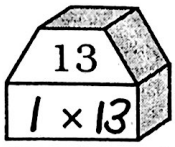
Number of factors 6



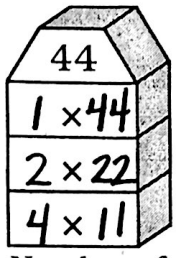
Number of factors 4



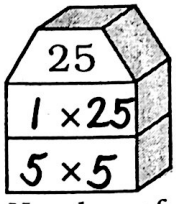
Number of factors 6



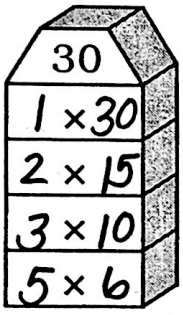
Number of factors 2



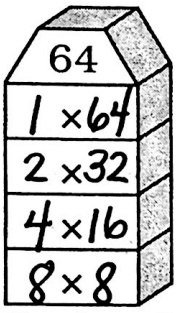
Number of factors 6



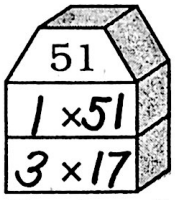
Number of factors 3



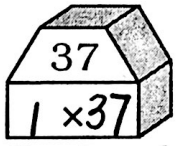
Number of factors 8



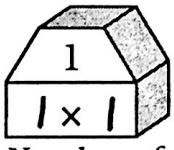
Number of factors 7



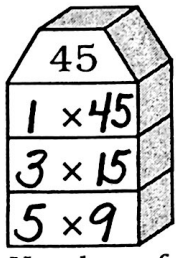
Number of factors 4



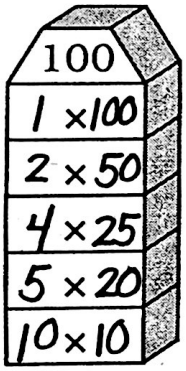
Number of factors 2



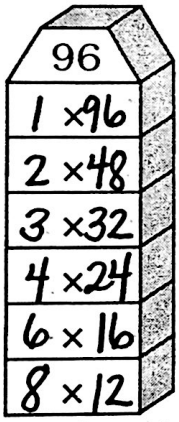
Number of factors 1



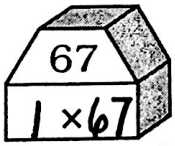
Number of factors 6



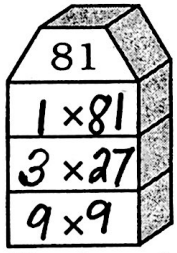
Number of factors 9



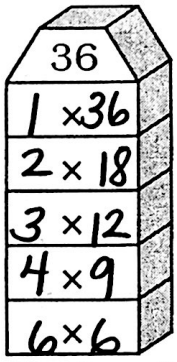
Number of factors 12



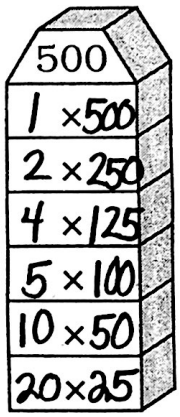
Number of factors 2



Number of factors 5



Number of factors 9



Number of factors 12

1. Numbers that are multiplied to form a product are called factors.
2. Which of the "tower numbers" have exactly two factors? 13, 37, 67
3. Numbers that have exactly two factors are called prime numbers.
4. Numbers that are squares of integers are called perfect squares.
5. Which of the "tower numbers" have an odd number of factors? 25, 64, 1, 100, 81, 36
6. Numbers that have an odd number of factors are perfect squares.
7. List all the prime numbers less than 20: 2, 3, 5, 7, 11, 13, 17, 19
8. List all the perfect squares less than 101: 1, 4, 9, 16, 25, 36, 49, 64, 81, 100