

1. Find the greatest percent increase in population among the five cities listed below. Express your answer to the nearest whole number.

1. _____

Rank	City	Population in 1950	Population in 1996
1	New York, NY	7,891,957	7,380,906
2	Los Angeles, CA	1,970,358	3,553,638
3	Chicago, IL	3,620,962	2,721,547
4	Houston, TX	596,163	1,744,058
5	Philadelphia, PA	2,071,605	1,478,002

2. Each of the letters a , b and c is replaced by a distinct digit 0 through 9 to make the following product true. What is the greatest possible value of $a + b + c$?

2. _____

$$\begin{array}{r} ab \\ \times b \\ \hline cab \end{array}$$

3. The Petronas Tower in Kuala Lumpur is 1483 feet tall and has 88 stories. The Sears Tower in Chicago is 1450 feet tall and has 110 stories. How many feet taller is the average height of a story in the Petronas Tower? Express your answer as a decimal to the nearest tenth.

3. _____

4. Aaron gave Levi the combination to his lock as a mystery to solve. There are three whole numbers in the locker combination. Aaron gave Levi the following clues:

4. _____

- Each number is greater than 0 and less than 40.
- The first number is a prime number greater than 31.
- The second number has nine distinct positive integer factors.
- If you take the product of the square of 3 and the cube of 2, and then reverse the digits, you have the third number.

What is the sum of the three numbers in the combination?

5. Years ago, an acre was the amount of land an ox could plow in a day. An acre is now defined as 43,560 square feet. How many square yards are in an acre?

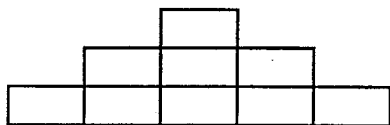
5. _____

6. How many three-digit numbers contain at least one 9?

6. _____

7. How many rectangles of any size are in the diagram?

7. _____



8. An integer n is a *nifty* number if both $n + 1$ and $\frac{1}{2}n + 1$ are perfect squares. What is the largest nifty number less than 100?

8. _____