INSTRUCTIONS...

Answer each of the following problems in the space provided. You **MUST** clearly show your reasoning along with **ALL** of your work in solving the problem!

If you are not finished by the end of class...finish for homework!!!

PROBLEM #1: `Picking Apples`

A man entered an orchard through 7 gates and picked some apples. When he left, he gave the first guard half his apples and 1 apple more. To the second guard he gave half his remaining apples and 1 apple more. He did the same to each of the remaining five guards and...

LEFT THE ORCHARD WITH ONE APPLE.

_____

ANSWER EACH OF THE FOLLOWING...

1) How many apples did he pick all together?

2) Explain your reasoning and show all your work below!

PROBLEM #2: Easter Egg Hunt

The bunnies in Easter Village are excited once again, for their annual Easter Egg Hunt has just been finished. In the Hunt, four bunnies search around the town for one of the Easter Eggs. Once they have each found one, they hop back to the finish line! Can you figure out which rabbits found which eggs, what places they got in the Hunt, and the prizes that were in their Easter Egg?

Bunnies: Mr. Hops, Jumper, Long Ears, Ms. Littlenose
Eggs: Blue, Red, Green, Yellow
Prizes in Eggs: Chocolate Candy, Jelly Bean, Gold Coin, Visor

Clues:
1. The four bunnies were Mr. Hops, the bunny that found the Red Egg, the bunny that finished in 4th place, and the bunny that found the Gold Coin in their egg.
2. Long Ears did not find the Visor in his Egg.
3. The bunny that placed 2nd found the Chocolate Candy in his/her Egg.
4. Neither Long Ears nor Ms. Littlenose found the Red Egg.
5. The bunny who placed 1st found the Green Egg.
6. The bunny who found the Red Egg did not finish the Hunt in 3rd Place.
7. Long Ears did not find the Gold Coin.
8. The bunny who found the Blue Egg did not find the Jelly Bean in his/her egg.
9. The bunny who finished 1st did not find the Visor in his/her egg.

COMPLETE EACH OF THE FOLLOWING...

Bunny	Egg Color	Prize	Position
Mr. Hops			
Jumper			
Long Ears			
Ms. Littlenose			

EXPLAIN your reasoning and show all your work below!

PROBLEM #3: FIGURE OUT THE DIGITS...

In the puzzle below, each letter 'q' through 'z' represents a different digit from 0 to 9. Determine the correspondence between the letters and the digits. YOU MUST EXPLAIN HOW YOU FOUND EACH DIGIT!!!

1. $u \; r = z$

2. $t + w = t$

3. $r + r + r + r = z$

4. $x + y = q$

5. $\dfrac{y}{z} = \dfrac{x}{u}$

6. $s \; v = s$

7. $x^2 = q$

8. $r + r = u$

9. $x + u = s$

COMPLETE EACH OF THE FOLLOWING...

Letter	Digit	Explain...
q		
r		
s		
t		
u		
v		
w		
x		
y		
z		

Problem #4:

Inequality Sudoku

Sudoku puzzles are seen in many books, newspapers, and magazines. However, inequality Sudoku puzzles, like the one shown below, are much less common.

The Puzzle

Complete the puzzle by inserting the digits 1 through 9 into the cells so that the inequality signs are correct. Each digit must occur only once in each column or row, as in a conventional Sudoku puzzle.
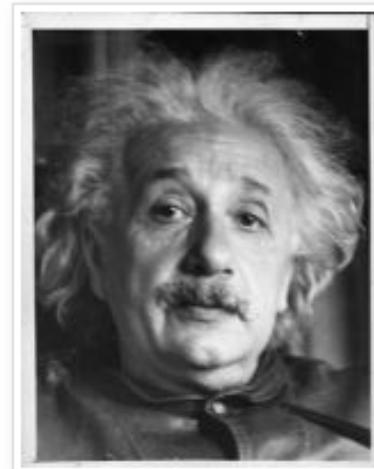
PROBLEM #5:

Einstein's Riddle
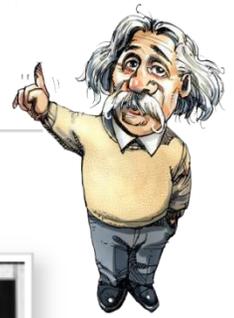
This is a straight-forward logic puzzle... no tricks; just logic.

Good luck — don't give up.

- **On a street there are five houses; each is painted a different color**
- **In each house lives a person of different nationality**
- **The five homeowners each drink a different kind of beverage, smoke a different brand of cigar and keep a different pet**

WHO OWNS THE FISH?

15 Facts:

1. A Brit lives in the red house.
2. The Swede keeps dogs as pets.
3. The Dane drinks tea.
4. The Green house is next to, and on the left of the White house.
5. The owner of the Green house drinks coffee.
6. The person who smokes Pall Mall rears birds.
7. The owner of the Yellow house smokes Dunhill.
8. The man living in the center house drinks milk.
9. The Norwegian lives in the first house.
10. The man who smokes Blends lives next to the one who keeps cats.
11. The man who keeps horses lives next to the man who smokes Dunhill.
12. The man who smokes Blue Master drinks beer.
13. The German smokes Prince.
14. The Norwegian lives next to the blue house.
15. The man who smokes Blends has a neighbor who drinks water.
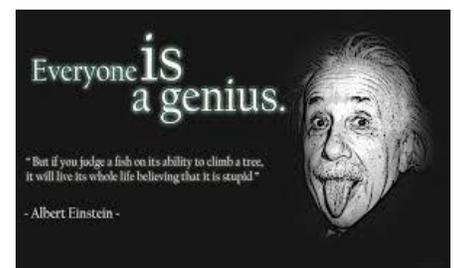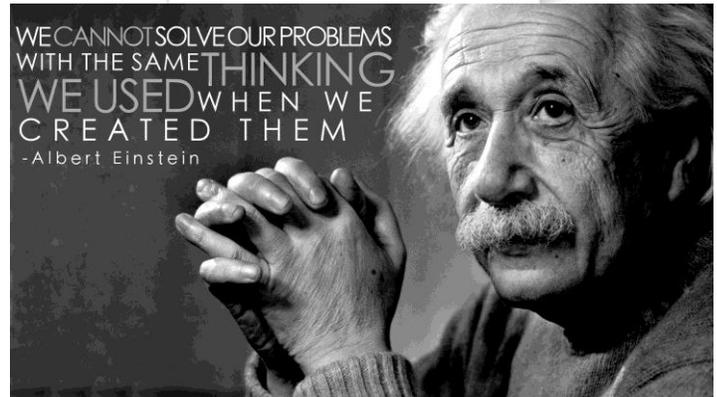
According to my sources, Albert Einstein created this riddle. Allegedly, he said: "98% OF THE WORLD POPULATION WILL NOT BE ABLE TO SOLVE IT."