1. A bear walks ten miles due south, then ten miles due east, then ten miles due north, ending up at the starting point. What color is the bear?

2. There are three switches in the kitchen connected to three light bulbs in the basement – one switch per bulb. How do you find out which switch goes with which bulb with only one trip: from the kitchen to the basement.

3. You have a three-liter container, a five-liter container, and a barrel with less than ten liters of water. Both containers are irregularly shaped. How do you measure out exactly four liters?

4. You have two hourglasses - one measures seven minutes, and the other measures four minutes. Use these two hourglasses to measure nine minutes.

5. It’s 3:00 a.m., the doorbell rings and you wake up... unexpected visitors. It’s your parents, and they are there for breakfast. You have strawberry jam, honey, wine, bread, and cheese. What is the first thing you open?

6. You have two ropes and a lighter. Each rope has the following property. If you light one end of the rope, it will take one hour to burn to the other end. They don’t necessarily burn at a uniform rate. How can you measure 45 minutes?

7. Alice, Bob, Charlie, and Denise have been kidnapped and buried along a straight line, in alphabetical order, up to their necks in the sand so that each can only look straight forward. The tide is rising and their lives are at risk. Alice, Bob, and Charlie are facing north, and Denise is facing south; there is a wall between Denise and the others that blocks line of sight. While all four were unconscious, the kidnapper placed black hats on Alice and Charlie and white hats on Bob and Denise.

Now they’re all awake and the kidnapper tells them that they will be left to die unless the following condition is met. They will be set free if – with no communication between the victims – one of them can decide if the hat on their own head is black or white. If anything but a single-word correct answer is given, then they will be left to die. They are finally told that there are two black hats and two white hats.

After a few minutes, one of the four says the correct answer. Who is it?

8. You have two identical coconuts and a 100-story building. You wish to find the highest floor from which they can be dropped without breaking. They do not weaken with repeated landings. You only have $1.40 and the elevator costs a dime each time you ride it up (going down is free).

How should you drop the coconuts to guarantee that you will find the lowest floor they will break at, while starting and ending at floor 1?

9. Find a location other than the bear’s starting point (see riddle #1) from which the same motion is possible: ten miles due south, then ten miles due east, then ten miles due north to end up at the starting point.

10. You have been given the task of transporting 3,000 bottles of beer a distance of 1,000 miles from Porterland to Lagerville. Your truck can carry 1,000 bottles at a time. For every mile you travel towards Lagerville you must pay a tax of one bottle, but you pay nothing when going in the other direction (back towards Porterland). What is maximum number of bottles you can get to Lagerville?

11. *Einstein’s riddle.* There are five houses in five different colors in a row. In each house lives a person with a different nationality. The five owners drink a certain type of beverage, smoke a certain brand of cigar and keep a certain pet. No owners have the same pet, smoke the same brand of cigar, or drink the same beverage. Other facts:

(a) The Brit lives in the red house.
(b) The Swede keeps dogs as pets.
(c) The Dane drinks tea.
(d) The green house is on the immediate left of the white house.
(e) The green house’s owner drinks coffee.
(f) The owner who smokes Pall Mall rears birds.
(g) The owner of the yellow house smokes Dunhill.
(h) The owner living in the center house drinks milk.
(i) The Norwegian lives in the first house.
(j) The owner who smokes Blends lives next to the one who keeps cats.
(k) The owner who keeps the horse lives next to the one who smokes Dunhill.
(l) The owner who smokes Bluemasters drinks beer.
(m) The German smokes Prince.
(n) The Norwegian lives next to the blue house.
(o) The owner who smokes Blends lives next to the one who drinks water.

The question is: who owns the fish?

12. Solve a Rubik’s Cube without assistance.

13. *The 12-Coins Problem.* There are 12 coins, one of which is counterfeit. Though it looks like the others, it doesn’t weigh the same. You have only a balance scale and the 12 coins, so you can only weigh coins against each other. How do you determine, in only three weighings, which coin is counterfeit and whether it’s too heavy or too light?