

Einstein's brainteaser There are five houses of five different colours. In each house lives a person of a different nationality. Those five people drink different drinks, smoke cigarettes of a different brand and have a different pet. None of them has the same pet, smokes the same cigarette or drinks the same drink.

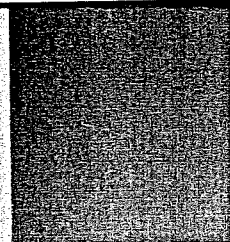
We know:

- The Englishman lives in the red house.
- The Swede has a dog as a pet.
- The Dane drinks tea.
- The green house is on the left of the white one.
- The person who lives in the green house drinks coffee.
- The person who smokes Pall Mall raises birds.
- The owner of the yellow house smokes Dunhill.
- The man who lives in the house that is in the middle drinks milk.
- The Norwegian lives in the first house.
- The man who smokes Blends lives next to the one who has cats.
- The man who raises horses lives next to the one who smokes Dunhill.
- The man who smokes Bluemaster drinks beer.
- The German smokes Prince.
- The Norwegian lives next to the blue house.
- The man who smokes Blends is neighbour of the one who drinks water.

Question: Who has the fish?
(Thanks to NoDoubts.)

ISATION. THEY WANT TO CALCULATE THE AREA

QUESTION 8.19. Let's play a game with 100 balls: 50 white and 50 black and two sacks. You can arrange the balls within the two sacks in any way you want. I then come into the room and pick a ball from one of the sacks. If I pick a black, I win; a white, you win. How do you arrange the balls such that you have the highest chance of winning?



Question 1.1: You are given two glass jugs. Each contains the same volume, V , of liquid. One jug contains pure alcohol, and the other jug contains pure water. A modest quantity, Q , of water is poured from the water jug into the alcohol jug, which is then thoroughly mixed. The same modest quantity, Q , of (now diluted) alcohol is then poured back into the water jug to equalize the volumes of the jugs at their initial levels.

The initial concentration of alcohol in the alcohol jug equals the initial concentration of water in the water jug (at 100%). What is the relationship between the final concentrations of alcohol in the alcohol jug and water in the water jug?¹