

## Hat Puzzles

There are three players called A, B and C. Each player is capable of making logical deductions.

I place a hat on the head of each player. I have three silver coloured hats and two gold coloured hats to choose from. No player can see their own hat. Each player tries to deduce the colour of their own hat. If a player can deduce the colour of their own hat then they shout.

The players stand in a queue.

A (at the back of the queue) can see B's hat and C's hat

B (in the middle of the queue) can see C's hat

C (at the front of the queue) can see no hats

Who can deduce the colour of their own hat in these examples?

- |                       |                    |                    |
|-----------------------|--------------------|--------------------|
| a) A has a silver hat | B has a gold hat   | C has a gold hat   |
| b) A has a silver hat | B has a silver hat | C has a gold hat   |
| c) A has a silver hat | B has a silver hat | C has a silver hat |

## SOLUTIONS

a) A thinks:

I can see two gold hats. So my hat must be silver.

b) B thinks:

If my hat is gold then A can deduce her hat is silver (see previous example). So if A does not shout then my hat is silver.

c) C thinks:

If my hat is gold then B can deduce his hat is silver (see previous example). So if B does not shout then my hat is silver.