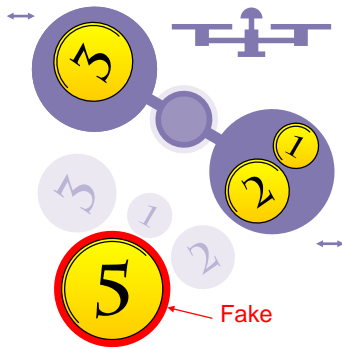
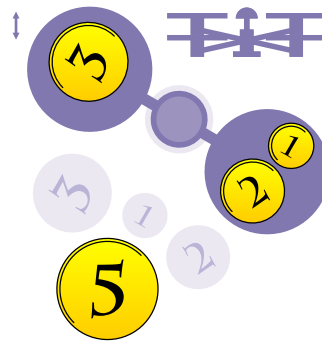




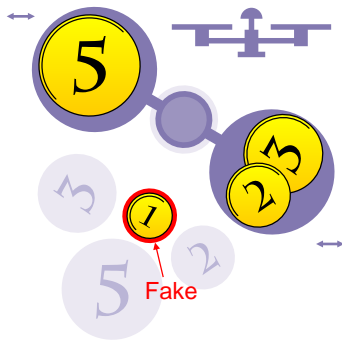
This is the same problem as Buckazoid Arithmetic II except that the four coins are one 1-buckazoid coin, one 2-buckazoid coin, one 3-buckazoid coin, and one 5-buckazoid coin. Once again, one of them is fake – it doesn't weigh what it should – but you don't know whether it is heavier or lighter than a real coin. How can you find the fake coin by using only a pan balance? You have no other weights except for these four coins.



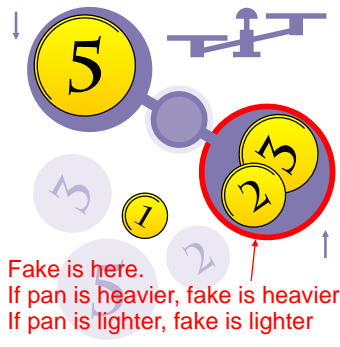
A1 Result of the weighing 1



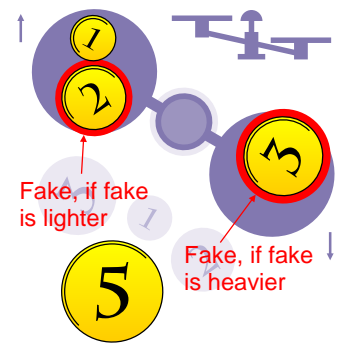
B1 Result of the weighing 1



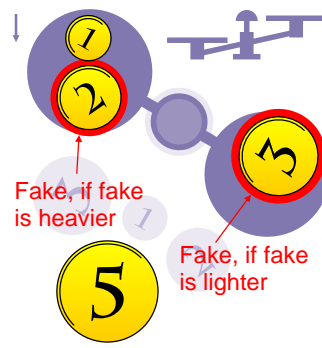
B2 Result of the weighing 2



B3 Result of the weighing 2



B4 Result of the weighing 3



B5 Result of the weighing 3

Step 1. Weigh the 3-buckazoid coin against the 1- and the 2-buckazoid coins. If they balance, then the 5-buckazoid coin is the fake (diagram A1). If they don't balance (diagram B1), then the 5-buckazoid coin is real, and do the following.

Step 2. Weigh the 5-buckazoid coin against the 2- and the 3-buckazoid coins. If they balance, then the 1-buckazoid coin is the fake (diagram B2). If they don't balance then either the 2- or the 3-buckazoid coin is fake, and we now know whether the fake is too heavy or too light (diagram B3).

Step 3. Keep in mind whether the fake is too heavy or too light and weigh the 3-buckazoid coin against the 1- and the 2-buckazoid coins again. This will tell you whether the 2-buckazoid coin or the 3-buckazoid coin is fake (actually, if we had the foresight to make a note when we did step 1, we wouldn't have had to repeat it). If the fake is too heavy then the heavier pan contains the fake (diagram B4), if the fake is too light, then the lighter pan contains the fake (diagram B5).