**(Assessment 1)**

**There are 9 coins. 8 coins weigh 100 gram and 1 coin weighs 200 grams. You have a weighing machine and you can weigh it on both ends. You only weigh it 2 times. How will you find out the heavier coin?"**

**Solution,**

To find the heavier coin among 9 coins (8 weighing 100 grams and 1 weighing 200 grams), I can do this in a minimum of 2 weighing using a weighing machine:

**Step 1:** I'll divide the 9 coins into 3 groups, let's call them Group 1, Group 2, and Group 3.

First Weighing:

**Step 2:** I will then take two groups and weigh them against each other.  
**Possible outcomes:**

1. If both groups are equal in weight, the heavier coin is in the third group.
2. If one of the groups is heavier, the heavier coin is in that group.

**Step 3:** Now, I've narrowed it down to 3 coins, from the group where I identified the heavier coin.

Second Weighing:  
I will take two coins from that group and weigh them against each other.  
**Possible outcomes:**

1. If both coins are equal, the heavier coin is the one left out.
2. If one of them is heavier, the heavier coin is the one on the heavier side.

By using these two weighing methods, I believe I will definitely identify the heavier coin with 200-grams among the 9 coins.