A Note on Probability

1. The probability of your getting 10♡, J♡, Q♡, K♡, and A♡ from a full deck in the first five draws:

$$\frac{5}{52}\times\frac{4}{51}\times\frac{3}{50}\times\frac{2}{49}\times\frac{1}{48}=3.85\times10^{-7}$$

2. The probability of your getting the same cards when there are three players and you have first draw:

$$\frac{5}{52}\times\frac{47}{51}\times\frac{46}{50}\times\frac{4}{49}\times\frac{45}{48}\times\frac{44}{47}\times\frac{3}{46}\times\frac{43}{45}\times\frac{42}{44}\times\frac{2}{43}\times\frac{41}{42}\times\frac{40}{41}\times\frac{1}{40}$$
$$=\frac{5}{52}\times\frac{4}{51}\times\frac{3}{50}\times\frac{2}{49}\times\frac{1}{48}=3.85\times10^{-7}$$

So the number of players doesn't matter.

3. The probability of your getting the same cards when there are three players and you have last draw:

$$\frac{47}{52}\times\frac{46}{51}\times\frac{5}{50}\times\frac{45}{49}\times\frac{44}{48}\times\frac{4}{47}\times\frac{43}{46}\times\frac{42}{45}\times\frac{3}{44}\times\frac{41}{43}\times\frac{40}{42}\times\frac{2}{41}\times\frac{39}{40}\times\frac{38}{39}\times\frac{1}{38}$$
$$=\frac{5}{52}\times\frac{4}{51}\times\frac{3}{50}\times\frac{2}{49}\times\frac{1}{48}=3.85\times10^{-7}$$

So the order of dealing doesn't matter, either.