

Full Name: _____

Student No: _____

Grade:

For each answer, **provide a short argument.**

1. (2 points) A bag contains 1000 coins. One of the coins has heads drawn on both sides, but all the other coins are fair coins. We pick a coin from the bag at random and flip it 8 times.

(a) What is the probability that in all 8 flips, the coin comes up heads?

Answer:

(b) If the 8 flips all resulted in heads, what is the probability that we have picked the two-headed coin?

Answer:

2. (2 points) You and your friend are in a class with 30 students. Today's class involves two activities. For the first activity, the professor randomly splits the class into two groups A and B of 15 students each.

(a) What is the probability that you and your friend are in the same group?

Answer:

For the second activity, the professor randomly pairs the students in group A with the students in group B .

(b) What is the probability that you and your friend are paired?

Answer:

3. (0 points) On the scale of 0–4, what is your estimate of your grade on this quiz?