

Show all work clearly and in order. Justify your answers.

(1) You are conducting the following experiment. You flip a coin and if it is heads you roll a fair 6-sided die. If it is tails, you roll a fair 10 sided die.

(a) Give the sample space of this experiment, explicitly.

(b) Give the event that the die roll is even, explicitly and find its probability.

(c) Are the events you flip heads and roll an even number independent? Be sure to use the definition of the independence.