

MA 162 Recitation Worksheet Thursday 6th November 2014

1. An experiment consisting of tossing a coin, rolling a die, and observing the outcomes
 - a. What is an appropriate sample space for this experiment?
 - b. Describe the event “a head is tossed and an even number is rolled.”
2. In a television game show, the winner is asked to select three prizes from five different prizes, A, B, C, D , and E .
 - a. Describe a sample space of possible outcomes (order is not important).
 - b. How many points are there in the sample space corresponding to a selection that includes A ?
 - c. How many points are there in the sample space corresponding to a selection that includes A and B ?
 - d. How many points are there in the sample space corresponding to a selection that includes either A or B but not both?
3. The grade distribution for a certain class is shown in the following table. Find the probability distribution associated with these data

Grade	A	B	C	D	F
Frequency of Occurrence	4	10	18	6	2

4. From a list of five applicants for a sales position a, b, c, d , and e two are selected for the next round of interviews. If the applicants are selected at random, what is probability that the two interviewees chosen:
 - a. Include applicant a ?
 - b. Include applicants a and c ?
 - c. Include applicants d and e ?
5. In a survey on consumer spending methods conducted in a certain year, the following results were obtained:

Payment Method	Checks	Cash	Credit Cards	Debit/ATM cards	other
Transactions(%)	37	14	25	15	9

If a transaction tracked in this survey is selected at random, what is the probability that the transaction was paid for:

- a. With a credit card or with a debit/ATM card?
 - b. With cash or some method other than with a check, a credit card, or a debit/ATM card?
6. Determine whether the following statements are true or false. If true explain why. If false give an example to show why it is false.
 - a. Let $S = \{s_1, s_2, \dots, s_n\}$ such that $P(s_1) = P(s_2) = \dots = P(s_n) = 1/n$ (all outcomes are equally likely) and all events are simple, then $0 \leq P(s_1) + P(s_2) + \dots + P(s_n) < 1$.
 - b. Let $S = \{s_1, s_2, \dots, s_n\}$ such that $P(s_1) = P(s_2) = \dots = P(s_n) = 1/n$ (all outcomes are equally likely), all events are simple, and $n \geq 5$. If $E = \{s_1, s_3, s_5\}$, then $P(E) = 3/n$