# Practice Sheet (1)

Md. Ismail Hossain Riday

# Example 1

- Two balanced dice, one black and one red are thrown and the number of dots on their upper faces are noted. Let, “b” be the outcomes of the black die, and “r” the outcomes of the red die, and both “b”; “r” varies from 1 to 6. Find,

a) The probability of throwing a double. (Ans: 1/6)

b) The probability that the sum is 5, i.e., b+r = 5 (Ans: 1/9)

c) Probability that the sum is even. (Ans: 1/2)

d) The probability that r≤2 or b≤3. (Ans: 2/3)

# Example 2

- Machine always do mistake. In a bolt factory “Machine A” produces 45% of the output and “Machine B” produces the rest. On average 9 items in 1000 produces by “Machine A” are defective, and 2 items in 500 produced by “Machine B” are defective. In a day run, the two machine produce 20000 items. An item is drawn at random from a day’s output and is found to be defective. What is the probability that,

a) Defective item was produced by “Machine A”? (Ans: 81/125)

b) Defective item was produced by “Machine B”? (Ans: 44/125)

# Example 3

- Given that,

$$f(x) = \frac{3}{4}\, x(2 - x); 0 \leq x \leq 2$$

a) Check is this PDF?

b) Find mean, median, and comment about its asymmetrical characteristics.

c) Q1, Q3?

# Example 4

- A biologist estimates that the chance of germination for a type of bean seed is 0.5%. A student was given 120 seeds. Assuming that the germination of seeds is independent, find the probabilities, a) At least three seeds are germinated. b) Suppose 6 students have conducted the experiment independently, then what is the probability that 3 students will get at most three seeds germinated?

# Thank You