Math 3339 Name:

HW #1

Please, write clearly and justify all your steps, to get proper credit for your work.

(1)[4 Pts] In a class of 125 students, the instructor gave 40 A's, 30 B's, 35 C's, 15 D's and 5 F's. Compute the relative frequency of the 5 events. Compute the probability (= relative frequency) of getting a grade that is better than C.

(2)[4 Pts] Let $S = A \cup B$ (here S is the universal set), $P(A) = 0.6$, $P(B) = 0.8$.

(a) Find $P(A \cap B)$

(b) Find $P(A^c \cup B^c)$

(3)[6 Pts] Let $P(A \cap B) = 0.2$, $P(A) = 0.5$, $P(B) = 0.4$.

(a) Find $P(A \cup B)$

(b) Find $P(A^c \cup B^c)$

(c) Find $P(A^c \cap B)$

(4)[4 Pts] How many different ways can you rearrange the letters of the following words

(a) OLSEN

(b) CALCUTTA

(5) [6 Pts] A bowl contains 20 chips, of which 9 are red, 8 are blue and 3 are white. Six chips are drawn at random and without replacement.

(i) Compute the probability that each of the 6 chips is red.

(ii) Compute the probability that 3 chips are red and 3 chips are blue.