Assignment 1

Jaswanth Chowdary Madala

1) Two cards are drawn at random and without replacement from a pack of 52 playing cards. Find the probability that both the cards are black.

Solution: Let E_1 denote the event that the first card drawn is Black, E_2 denote the event that the second card drawn is Black. Given that the cards are drawn without replacement. Thus, the required probability is given by

$$\Pr(E_1 E_2) = \Pr(E_1)\Pr(E_2 \mid E_1) \qquad (0.0.1)$$

$$= \frac{26}{52} \times \frac{25}{51} \qquad (0.0.2)$$

$$= \frac{25}{102} \qquad (0.0.3)$$