Question 5

Let event e = ticket 2 differs by more than 3

$$P(e) = \left[\frac{6}{10} + \frac{5}{10} + \frac{4}{10} + \frac{3}{10} + \frac{3}{10} + \frac{3}{10} + \frac{3}{10} + \frac{4}{10} + \frac{5}{10} + \frac{6}{10}\right] \frac{1}{10}$$

Choose: 1 2 3 4 5 6 7 8 9 10

$$= \boxed{0.42}$$

Question 6

$$P(\text{all same suit}) = \frac{\binom{13}{5}}{\binom{52}{5}} = 0.0004951981$$

Question 7

a) $4/52$ b) $4/52$

Question 8

$$P(\text{Side}_2 \text{Blue} \mid \text{Side}_1 \text{Blue}) = \frac{P(\text{Side}_1 \text{Blue} \wedge \text{Side}_2 \text{Blue})}{P(\text{Side}_1 \text{Blue})}$$

$$= \frac{3}{6} = \boxed{\frac{1}{2}}$$