Question 1

1. For the case of two fair dice simultaneously,

S = {0,1,2,3,4,5,6}

Total possible outcomes = 6\*6 = 36

If dice 1 show 1, dice 2 show 2/3/4/5/6 🡪 5 outcomes

If dice 1 show 2, dice 2 show 1/3/4/5/6 🡪 5 outcomes

If dice 1 show 3, dice 2 show 1/2/4/5/6 🡪 5 outcomes

If dice 1 show 4, dice 2 show 1/2/3/5/6 🡪 5 outcomes

If dice 1 show 5, dice 2 show 1/2/3/4/6 🡪 5 outcomes

If dice 1 show 2, dice 2 show 1/2/3/4/5 🡪 5 outcomes

For score 0, possible outcome = 30

for score 1, 1🡪 1 : 1 outcome

for score 2, 2🡪 2 : 1 outcome

for score 3, 3🡪 3 : 1 outcome

for score 4, 4🡪 4 : 1 outcome

for score 5, 5🡪 5 : 1 outcome

for score 6, 6🡪 6 : 1 outcome

P(S=0) = 30/36 = 5/6

P(S=1) = 1/36

P(S=2) = 1/36

P(S=3) = 1/36

P(S=4) = 1/36

P(S=5) = 1/36

P(S=6) = 1/36

1. E(S) = 0\*5/6 + 1\*1/36+ 2\*1/36 + 3\*1/36+ 4\*1/36 + 5\*1/36 + 6\*1/36

= 0+ 1/36 + 1/18 + 1/12 + 1/9 + 5/36 + 1/6

= 7/12

= 0.5833

1. Inside notebook
2. E(T) = 3\*E(S) = 3\* 7/12 = 1.75

Fee – E(T) = 1

Fee = 1+ E(T)

Fee = 1+1.75

Fee = 2.75

Fee should be $2.75

Question 2

1. Total possible outcome = 30

P(R) = 10/30 = 1/3

P(B) = 15/30 = ½

P(G) = 5/30 = 1/6

S= {RBG,RGB,BRG,BGR,GRB,GBR}

N(S) = 6

P(RGB) = 1/3\*1/2\*1/6 = 1/36

P(A3) = 6 \* 1/36 = 1/6