Student Information

Name :Burak Bahar

ID : 2380137

Answer 1

a)For blue dice $E(B) = 2 * (4/6) + 3 * (1/6) + 4 * (1/6) = 2.5$
for yellow dice $E(Y) = 1 * (2/6) + 2 * (2/6) + 3 * (2/6) = 2$
for red dice $E(R) = 1 * (2/8) + 2 * (2/8) + 3 * (3/8) + 5 * (1/8) = 2.5$

b) $E(2R + Y) = E(2R) + E(Y) = 2.5 * 2 + 2 = 7$
$E(2Y + B) = E(2Y) + E(B) = 2 * 2 + 2.5 = 6.5$
I would choose 2 red and 1 yellow

c)If blue is guaranteed to be 4. Second option becomes
$E(2Y) + 4 = 2 * 2 + 4 = 10$**. I would choose 2 yellow and 1 blue**

d) $P(R|3) = P(R \wedge 3)/P(3) =$
$(1/3)(3/8)/(1/3)(1/3 + 1/6 + 3/8) = (1/8)/(7/24) = 3/7$

e)for getting 6 in total, yellow and red could be 1 and 5 or 3 and 3 respectively. For first one the probability is$(2/6) * (1/8) = 2/48$**, for the second,** $(2/6) * (3/8) = 6/48$**, so the total probability is** $2/48 + 6/48 = 8/48 = 1/6$

Answer 2

a) no electric outage in Ankara : a=0 , two electric outage in Istanbul : i= 2. answer = 0.17

b) There is and in expression so 2 things should be right at the same time and a should be 2 so answer is 0.

c) for total 2 electric outages, a=0 and i=2 or a=1 and i=1, from table probability is $0.17 + 0.11 = 0.28$

d) a =1 and i could be anything so $0.12 + 0.11 + 0.22 + 0.15 = 0.6$

e) For a = 0 the probability 0.4 and a=1 is 0.6. For i=0 0.2, i=1 0.24, i=2 0.39, i=3 0.17.

f) a = 0 is 0.4 and a=1 is 0.6 without looking at i. i=0 0.2, i=1 0.24, i=2 0.39, i=3 0.17. If a and i are independent the multiplication of these values should give the probabilities in the table but for a=0 and i=1 table gives 0.13 but $0.4 * 0.24$ **gives 0.096 so they are not independent**