15.39(q)

Adam, Barb

Adam, Charlie

Adam Doris

Barb, Charlie

Barb, Doris

Charlie, Doris

There are in total six different possible pairs, each pair can either be a pair of friends or a pair of enemies.

Compute above, we get

**Answer: 1/64**

16.4

(a)

In world 1, all ravens are black.

In world 2, there is a white raven.

If you pick world 1, all ravens are black. Pick word 2, not all ravens are black.

**Compute above, we get for the answer**

(b)

Probability of all ravens are black, given that you see a black raven in your world.

P[A|B] = P[All ravens are black | you see a black raven]

P[A|B]

16.37

(a)

Fair coins:

Unfair: 1

(b)

Fair coins:

Unfair: 0

(c)

Unfair: 1

Fair coins:

{tail, head}, **{tail, tail}**, {head, tail}, **{head, head}**

16.40

(a)

(b)

Assume the probability of a girl named Leiltton is p

There are four possibly combinations of boys and girls:

BB: do not need to consider

BG: 1. A Boy, A girl named Leilitoon 0.25p

BG: 1. A Boy, A girl named Leilitoon 0.25p

GG 1. A girl named Leiltoon, A girl but not Leiltoon 0.25 \* p(1-p)

2. A girl named Leiltoon, A girl but not Leiltoon 0.25 \* p(1-p)

3. A girl but not Leiltoon, A girl but not Leiltoon 0.25 \*

4. A girl named Leiltoon, A girl named Leiltoon 0.25 \*

P[GG | Leilitoon] =

P =.

Since P is a girl name Leiltton and Leiltton is a rare name, we can assume that p is close to zero. In this case, is close to

(c)

The chance for a girl to born on Sunday is plug back into the equation we get above, we get

17.9

(a)

independent

If B is a black square, no white square is taken, doesn’t affect A

(b)

dependent

From given, B is at even column, and it could be at an even row or an odd row. If it is at an even row, a possible spot for A is taken, it will affect the chance of A.

(c)

dependent

From given, B is at even column, and it could be at a black square or a white square. If it is at a white square row, a possible spot for A is taken, it will affect the chance of A.

17.28

P = 1 – probability of no matches for 5 throws

probability of no matches for 5 throws =

P = 1 -