18.20(a)

18.33

(l)

Not binomial

(m)

Binomial

(o)

(i)

Not binomial

(ii)

Not binomial

(p)

Binomial

(q)

Not binomial

19.11

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 4 heads | 3 heads | 2 heads | 1 heads | 0 heads |
| possibilities | 1/16 | 4/16 | 6/16 | 4/16 | 1/16 |

Win: more heads than tails, which is in total 5/16 chance.

19.35

(a)

(b)

19.54

Assume chances to have a boy is P, have a girl is 1 – P.

(a)

Possibilities for females: 2/3

Possibilities for males: 1/3

(b)

Possibilities for females: 1/2

Possibilities for males: 1/2

(c)

Possibilities for females: 1/3

Possibilities for males: 2/3

20.11

(a)

(b)

If a person sleeps in the wrong bunk, there must be another person sleep in the wrong bunk. There is no way that only one person sleeps in the wrong bunk

Answer: 0

(c)

(d)

No matter the chance they sleep in their own bunk, we would always expect 1 person sleep in his own bunk.

Answer: 1