**1.**

**(a).**

i) The probability of getting heads on the first flip:

ii) The probability of all heads or all tails:

iii) :

iv) :

**(b).**

a)

b)

i)

ii)

iii)

iv)

**(c).**

i)

ii)

iii)

**2.**

**(a).**

i)

ii)

**(b).**

i)

ii)

**(c).**

i)

ii)

**(d).**

i)

ii)

**3.**

**(a).**

i)

and are independent if .

Therefore, and are independent events.

ii)

{(2,1), (2,2), (2,3), (2,4), (4,1), (4,2), (4,3), (4,4), (1,2), (3,2), (1,4), (3,4)}

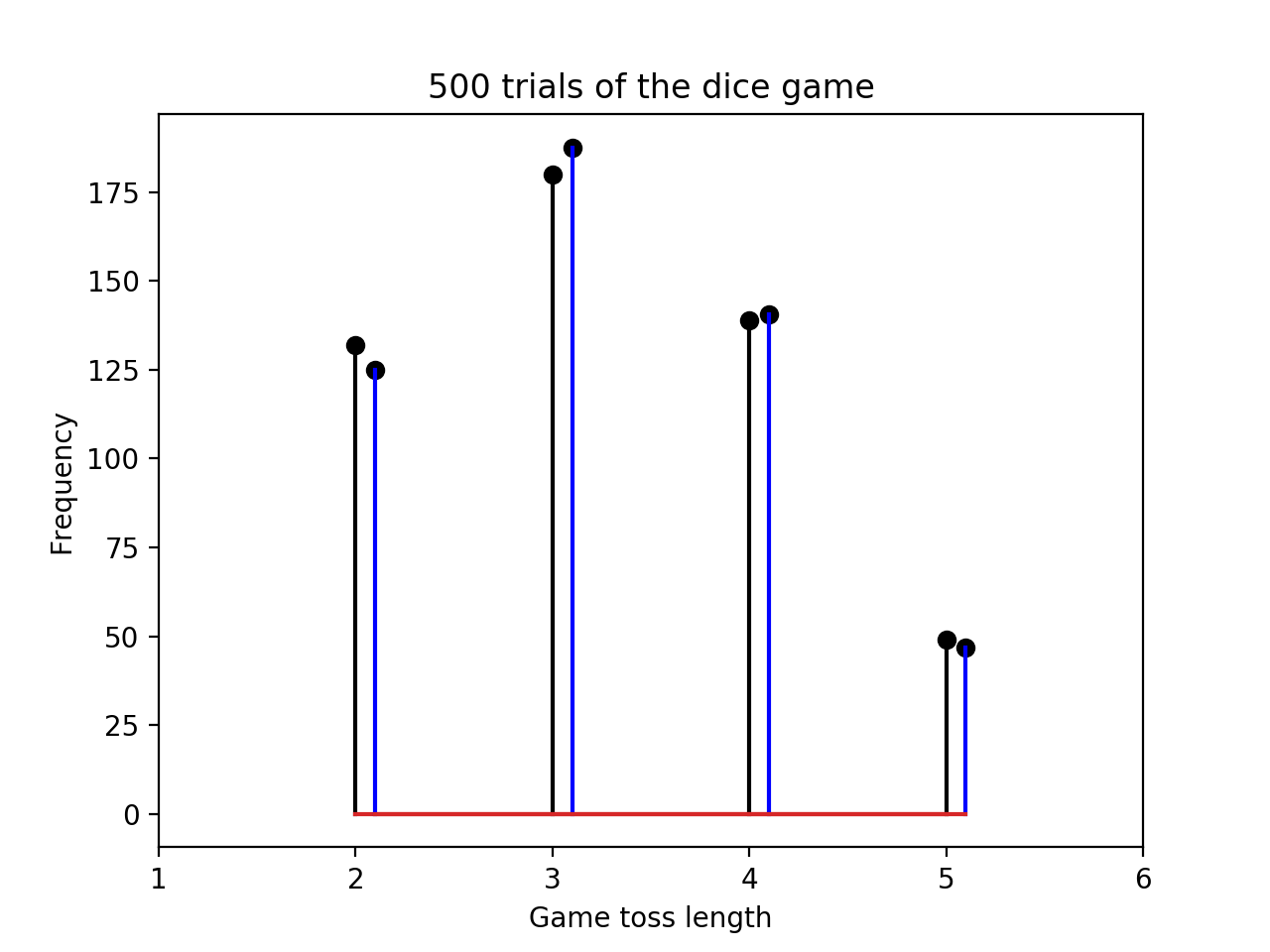
and are independent if .

Therefore, and are dependent (NOT independent) events.

**(b).**

**(c).**

**(d).**

****