Suppose an experiment consists of rolling two fair dice, and we repeat the experiment using four independent trials. What is the probability that the sum of the dice in the third trial is smaller than three, given we do not see a six during either the first or second trial?

(a) None of these.

(b) 1/18

(c) 1/9

(d) 1/12

(e) 2/9

(f) 4/5

(g) 2/5

(h) 1/3

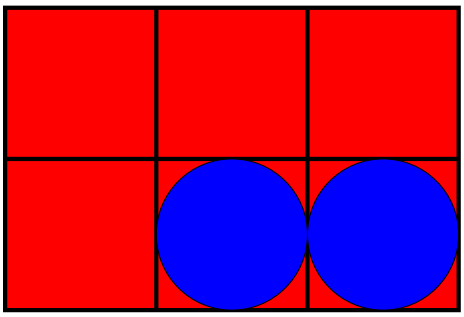
(i) 1/2

(j) 1/6

(k) 2/3

(l) 1/5

If two coins are randomly placed in two of the six squares in a 2×3 grid, what is the probability the two chosen squares are horizontally adjacent? The figure below shows an example where they are horizontally adjacent.



(a) 4/15

(b) 2/15

(c) 1/15

(d) 1/30

(e) 4/5

(f) 2/5

(g) 1/3

(h) 1/2

(i) 1/6

(j) 2/3

(k) 1/5

(l) None of these.

Suppose in sample space S that events A and C are conditionally independent given event B. If the probabilities of ABC^c and A^cBC are equal to each other and are each one half of the probability of ABC which is nonzero, then what is the probability of A given B?

(a) 2/3

(b) 1/3

(c) 1/2

(d) 1/6

(e) 5/6

(f) 1/12

(g) 1/4

(h) 5/12

(i) 3/4

(j) 3/8

(k) 1/24

(l) None of these