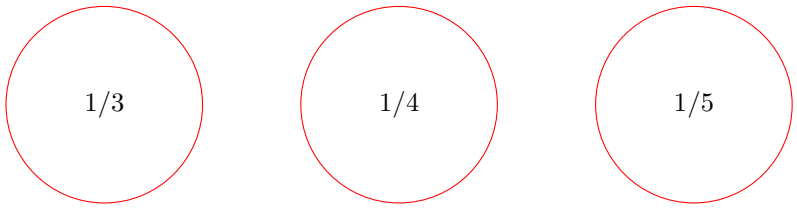
Suppose three biased coins are each flipped once. The probabilities of each coin getting Heads are shown below. Which of the following pairs of events are independent?



(a) $\{HHH, HHT\}$ and $\{HHT, HTT, THT, TTT\}$

(b) $\{HHH\}$ and $\{TTT\}$

(c) $\{HHH\}$ and $\{TTT, TTH, THT, HTT\}$

(d) $\{HHT, HTH, THH, HHH\}$ and $\{TTT, TTH, THT, HTT\}$

(e) $\{TTT\}$ and $\{HHT, HTH\}$

(f) $\{HHH\}^c$ and $\{TTT, HHH\}^c$

(g) $\{HHH\}^c$ and $\{TTT\}^c$

(h) $\{HHH, TTT\}$ and $\{HHH, TTT\}$

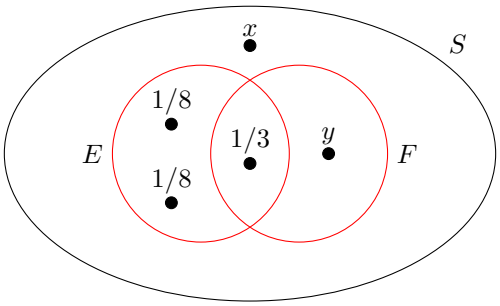
(i) $\{HHH\}$ and $\{HHH, HHT, HTH, THH, TTH, THT\}$

(j) $\{HHH\}$ and $\{HHH, TTT\}$

(k) $\{HHH, TTT\}$ and $\{HHH, TTT, THT, HTH\}$

(l) None of these

Suppose the sample space S of an experiment is shown below, with each element labeled by its probability. Also shown as red circles are two events E and F. If E^c and F^c are independent, then what is the value of y?



(a) 5/21

(b) 5/7

(c) 1/12

(d) 1/3

(e) 2/3

(f) 1/24

(g) 1/8

(h) 3/8

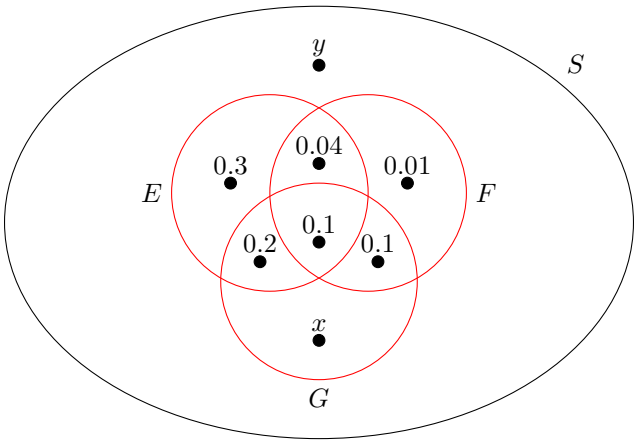
(i) 5/12

(j) 5/24

(k) 1/4

(l) None of these

Suppose the sample space S of an experiment is shown below, with each element labeled by its probability. Also shown as red circles are three events E, F, and G. If E and F are independent given G, then what is the value of x?



(a) 1/5

(b) 1/3

(c) 1/10

(d) 1/12

(e) 2/5

(f) 1/24

(g) 1/8

(h) 3/8

(i) 1/16

(j) 1/15

(k) 2/15

(l) None of these