

Calculate probabilities of compound events

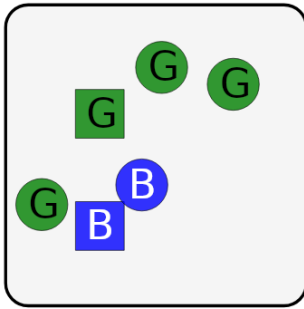
1

A spinner with three equal-sized sections coloured red, green, and blue is spun three times. Event A: There is exactly one green. Event B: There is no green.

- A $P(A \cap B) = 0$
- B $P(A \cap B) = P(A) \times P(B)$
- C Neither of these

3

What is the equation for the chance of drawing two green shapes in a row at random from this bag?



- | | |
|-----------------------------------|-----------------------------------|
| A $\frac{2}{2} \cdot \frac{2}{5}$ | B $\frac{2}{2} \cdot \frac{2}{2}$ |
| C $\frac{1}{2} \cdot \frac{1}{3}$ | D $\frac{4}{6} \cdot \frac{3}{5}$ |
| E $\frac{2}{6} \cdot \frac{3}{3}$ | F $\frac{1}{4} \cdot \frac{4}{8}$ |

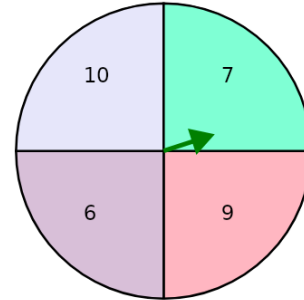
5

Events A and B can both occur, so they are not mutually exclusive.

- A $P(A \cup B) = P(A) + P(B)$
- B $P(A \cup B) = P(A) + P(B) - P(A \cap B)$ (where $P(A \cap B) > 0$)
- C Neither of these

2

Calculate the probability of spinning 7 twice in a row. Show as an equation

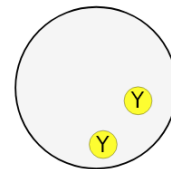
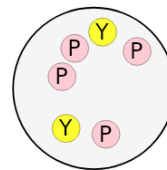


P(7 twice)

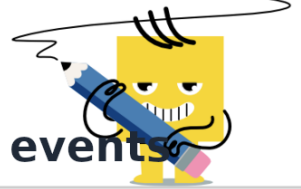
- | | |
|-------------------------------------|-------------------------------------|
| A $\frac{1}{4} \cdot \frac{1}{4}$ | B $\frac{1}{15} \cdot \frac{1}{15}$ |
| C $\frac{4}{16} \cdot \frac{4}{16}$ | D $\frac{1}{17} \cdot \frac{1}{17}$ |
| E $\frac{4}{15} \cdot \frac{4}{15}$ | |

4

What is the equation for the chance of drawing a yellow circle at random from both bags?



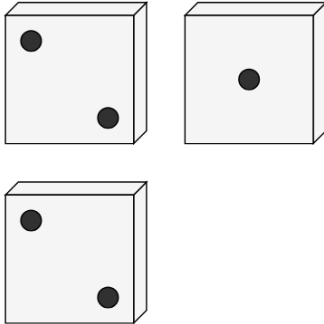
- | | |
|------------------------------------|-----------------------------------|
| A $\frac{1}{2} \cdot \frac{4}{5}$ | B $\frac{4}{8} \cdot \frac{3}{5}$ |
| C $\frac{1}{10} \cdot \frac{5}{6}$ | D $\frac{2}{5} \cdot \frac{2}{8}$ |
| E $\frac{2}{6} \cdot \frac{2}{2}$ | F $\frac{4}{6} \cdot \frac{2}{8}$ |



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6

What is the equation for the chance of NOT rolling all 2's on these dice?



A

$$\frac{1}{6} \cdot \frac{1}{6}$$

B

$$1 - \frac{1}{6} \cdot \frac{1}{6} \cdot \frac{1}{6}$$

C

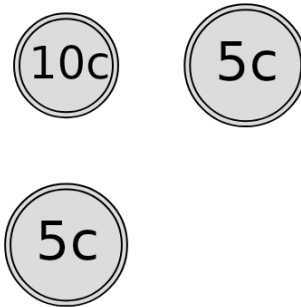
$$1 - \frac{1}{6} \cdot \frac{1}{6}$$

D

$$\frac{1}{6} \cdot \frac{1}{6} \cdot \frac{1}{6}$$

7

What is the equation for the chance of flipping a mixed set (not all heads or all tails) on these coins?



A

$$1 - \frac{1}{2} \cdot \frac{1}{2} \cdot \frac{1}{2}$$

B

$$\frac{1}{2} \cdot \frac{1}{2}$$

C

$$\frac{1}{2} \cdot \frac{1}{2} \cdot \frac{1}{2}$$

D

$$1 - \frac{1}{2} \cdot \frac{1}{2}$$

8

Events A and B are mutually exclusive, so they are not independent.

A

$$P(A \cup B) = P(A) + P(B) - P(A) \times P(B)$$

B

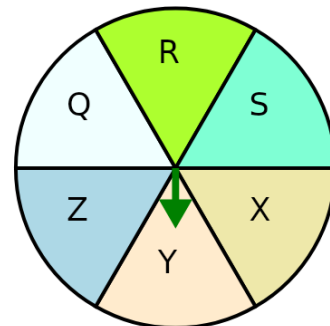
Neither of these

C

$$P(A \cup B) = P(A) + P(B)$$

9

What formula would give you the chance of spinning 'Y' twice in a row?



A

$$P(Y_1) \cdot P(Y_2)$$

B

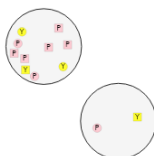
$$P(Y_1) + P(Y_2) - P(Y_1 \cap Y_2)$$

C

$$\frac{P(Y_1 \cap Y_2)}{P(Y_2)}$$

10

What is the chance of drawing a circle at random from both bags?



A 0.125

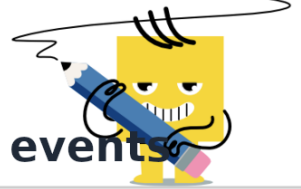
B 0.2

C 1

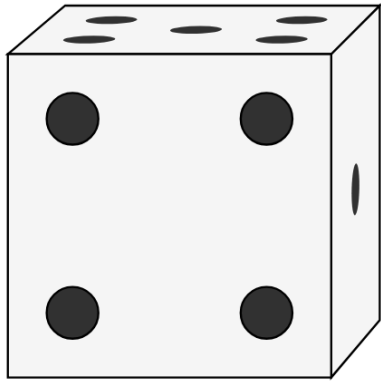
D 0.25

E 0.375

F 0.3

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What formula would give you the chance of not rolling a 4?



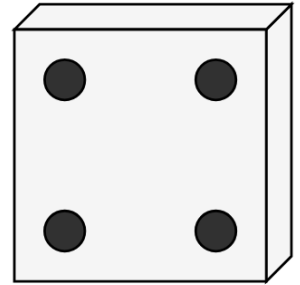
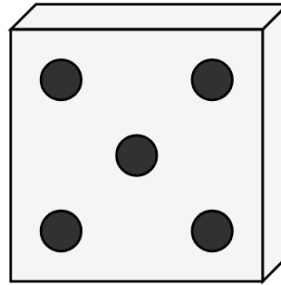
A $P(4) + P(4) - P(4 \cap 4)$

B $1 - P(4)$

C $P(4) \cdot P(4)$

12

What is the equation for the chance of rolling at least one 1 on these dice?



A $\frac{1}{6}$

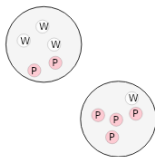
B $1 - \frac{1}{6} \cdot \frac{1}{6}$

C $\frac{1}{6} + \frac{1}{6} - \frac{1}{6} \cdot \frac{1}{6}$

D $\frac{1}{6} \cdot \frac{1}{6}$

13

What is the chance of drawing a white shape at random from both bags?



A 0.75

B 0.667

C 0.5

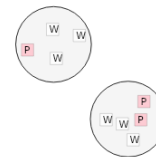
D 0.12

E 0.7

F 1

14

What is the chance of drawing a white shape at random from both bags?



A 0.45

B 0.667

C 0.9

D 1

E 0.4

F 0.6

15

In a survey of students, 62% run track, 30% swim, and 20% are in neither group.

A $\frac{1}{2}$

B $\frac{9}{50}$

C $\frac{3}{25}$

D $\frac{37}{50}$

16

In a group of customers, 2 did both, 5 are in the bought group but not the coupon group, 1 are in the coupon group but not the bought group, and 12 are in neither group.

A $\frac{9}{20}$

B $\frac{7}{20}$

C $\frac{1}{4}$