

Mutually Exclusive Events

Determine if the scenario involves mutually exclusive events.

- 1) A spinner has an equal chance of landing on each of its eight numbered regions. After spinning, it lands in region three or six.
- 2) A bag contains six yellow jerseys numbered one to six. The bag also contains four purple jerseys numbered one to four. You randomly pick a jersey. It is purple or has a number greater than five.
- 3) A magazine contains twelve pages. You open to a random page. The page number is eight or ten.
- 4) A box of chocolates contains six milk chocolates and four dark chocolates. Two of the milk chocolates and three of the dark chocolates have peanuts inside. You randomly select and eat a chocolate. It is a milk chocolate or has no peanuts inside.

Find the probability.

- 5) A magazine contains fourteen pages. You open to a random page. The page number is three or seven.
- 6) A basket contains three apples, three peaches, and four pears. You randomly select a piece of fruit. It is an apple or a peach.
- 7) You roll a fair six-sided die. The die shows an even number or a number greater than three.
- 8) A box contains three red playing cards numbered one to three. The box also contains five black playing cards numbered one to five. You randomly pick a playing card. It is black or has an odd number.

Determine if events A and B are mutually exclusive.

$$9) P(A) = \frac{3}{10} \quad P(B) = \frac{1}{2} \quad P(A \text{ or } B) = \frac{4}{5}$$

$$10) P(A) = \frac{7}{20} \quad P(B) = \frac{11}{20} \quad P(A \text{ or } B) = \frac{283}{400}$$

$$11) P(A) = \frac{7}{20} \quad P(B) = \frac{3}{10} \quad P(A \text{ and } B) = \frac{21}{400}$$

$$12) P(A) = 0.2 \quad P(B) = 0.35 \quad P(A \text{ and } B) = 0$$

$$13) P(A) = \frac{3}{5} \quad P(B) = \frac{1}{2} \quad P(A|B) = \frac{33}{50}$$

$$14) P(A) = \frac{7}{20} \quad P(B) = \frac{11}{20} \quad P(A|B) = 0$$

Events A and B are mutually exclusive. Find the missing probability.

$$15) P(A) = \frac{1}{4} \quad P(B) = \frac{13}{20} \quad P(A \text{ or } B) = ?$$

$$16) P(A) = \frac{2}{5} \quad P(B) = \frac{1}{4} \quad P(A \text{ and } B) = ?$$

Find the missing probability.

$$17) P(A) = \frac{7}{20} \quad P(B) = \frac{7}{20} \quad P(A \text{ or } B) = \frac{49}{80} \quad P(A \text{ and } B) = ?$$

$$18) P(A) = \frac{11}{20} \quad P(A \text{ or } B) = \frac{283}{400} \quad P(A \text{ and } B) = \frac{77}{400} \quad P(\text{not } B) = ?$$

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Not mutually exclusive

Find the probability.

- 5) A magazine contains fourteen pages. You open to a random page. The page number is three or seven.

$$\frac{1}{7} \approx 0.143$$

- 6) A basket contains three apples, three peaches, and four pears. You randomly select a piece of fruit. It is an apple or a peach.

$$\frac{3}{5} = 0.6$$

- 7) You roll a fair six-sided die. The die shows an even number or a number greater than three.

$$\frac{2}{3} \approx 0.667$$

- 8) A box contains three red playing cards numbered one to three. The box also contains five black playing cards numbered one to five. You randomly pick a playing card. It is black or has an odd number.

$$\frac{7}{8} = 0.875$$

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Mutually exclusive

Events A and B are mutually exclusive. Find the missing probability.

$$15) P(A) = \frac{1}{4} \quad P(B) = \frac{13}{20} \quad P(A \text{ or } B) = ?$$

$\frac{9}{10}$

$$16) P(A) = \frac{2}{5} \quad P(B) = \frac{1}{4} \quad P(A \text{ and } B) = ?$$

0

Find the missing probability.

$$17) P(A) = \frac{7}{20} \quad P(B) = \frac{7}{20} \quad P(A \text{ or } B) = \frac{49}{80} \quad P(A \text{ and } B) = ?$$

$\frac{7}{80}$

$$18) P(A) = \frac{11}{20} \quad P(A \text{ or } B) = \frac{283}{400} \quad P(A \text{ and } B) = \frac{77}{400} \quad P(\text{not } B) = ?$$

$\frac{13}{20}$