

Practice with and, or, not (M2 10.3)

Determine if events A and B are mutually exclusive (disjoint).

1) $P(A) = \frac{7}{20}$ $P(\text{not } B) = \frac{4}{5}$ $P(A \text{ and } B) = 0$

2) $P(\text{not } A) = \frac{7}{10}$ $P(B) = \frac{7}{20}$ $P(A \text{ and } B) = 0$

3) $P(A) = \frac{3}{10}$ $P(B) = \frac{1}{2}$ $P(A \text{ and } B) = 0$

4) $P(A) = \frac{3}{10}$ $P(B) = \frac{1}{5}$ $P(A \text{ and } B) = \frac{3}{50}$

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

6) $P(A) = \frac{1}{4}$ $P(B) = \frac{11}{20}$ $P(A \text{ or } B) = \frac{53}{80}$

7) $P(A) = \frac{3}{10}$ $P(B) = \frac{1}{4}$ $P(A \text{ and } B) = 0$

8) $P(A) = \frac{3}{10}$ $P(B) = \frac{2}{5}$ $P(A \text{ and } B) = \frac{9}{100}$

9) $P(\text{not } A) = \frac{9}{20}$ $P(B) = \frac{3}{5}$ $P(A \text{ and } B) = \frac{33}{100}$

10) $P(A) = \frac{3}{5}$ $P(\text{not } B) = \frac{3}{4}$ $P(A \text{ or } B) = \frac{7}{10}$

$$11) P(A) = \frac{1}{5} \quad P(B) = \frac{3}{10} \quad P(A \text{ or } B) = \frac{1}{2}$$

$$12) P(A) = \frac{1}{5} \quad P(B) = \frac{2}{5} \quad P(A \text{ and } B) = \frac{2}{25}$$

$$13) P(A) = \frac{7}{10} \quad P(B) = \frac{7}{10} \quad P(A \text{ or } B) = \frac{161}{200}$$

$$14) P(A) = \frac{9}{20} \quad P(B) = \frac{1}{4} \quad P(A \text{ or } B) = \frac{7}{10}$$

$$15) P(A) = \frac{1}{5} \quad P(\text{not } B) = \frac{2}{5} \quad P(A \text{ and } B) = 0$$

$$16) P(A) = \frac{7}{20} \quad P(B) = \frac{9}{20} \quad P(A \text{ or } B) = \frac{4}{5}$$

$$17) P(A) = \frac{3}{5} \quad P(\text{not } B) = \frac{3}{10} \quad P(A \text{ and } B) = \frac{21}{50}$$

$$18) P(A) = \frac{2}{5} \quad P(B) = \frac{7}{20} \quad P(A \text{ or } B) = \frac{3}{4}$$

$$19) P(A) = \frac{7}{20} \quad P(B) = \frac{3}{10} \quad P(A \text{ and } B) = 0$$

$$20) P(A) = \frac{13}{20} \quad P(B) = \frac{7}{20} \quad P(A \text{ and } B) = \frac{91}{400}$$

Answers to Practice with and, or, not (M2 10.3)

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|----------------------------|----------------------------|----------------------------|
| 1) Mutually exclusive | 2) Mutually exclusive | 3) Mutually exclusive |
| 4) Not mutually exclusive | 5) Mutually exclusive | 6) Not mutually exclusive |
| 7) Mutually exclusive | 8) Not mutually exclusive | 9) Not mutually exclusive |
| 10) Not mutually exclusive | 11) Mutually exclusive | 12) Not mutually exclusive |
| 13) Not mutually exclusive | 14) Mutually exclusive | 15) Mutually exclusive |
| 16) Mutually exclusive | 17) Not mutually exclusive | 18) Mutually exclusive |
| 19) Mutually exclusive | 20) Not mutually exclusive | |