

Tests for independence practice (M2 10.4)

Determine if events A and B are independent.

1) $P(A) = \frac{1}{4}$ $P(B) = \frac{1}{5}$ $P(A \text{ and } B) = \frac{1}{40}$

2) $P(A) = \frac{11}{20}$ $P(B) = \frac{1}{2}$ $P(A|B) = \frac{99}{200}$

3) $P(A) = \frac{1}{5}$ $P(B) = \frac{2}{5}$ $P(A \text{ and } B) = \frac{7}{100}$

4) $P(A) = \frac{1}{5}$ $P(B) = \frac{1}{4}$ $P(A|B) = \frac{1}{5}$

5) $P(A) = \frac{3}{10}$ $P(B) = \frac{3}{10}$ $P(A|B) = \frac{3}{10}$

6) $P(A) = \frac{3}{5}$ $P(B) = \frac{3}{5}$ $P(A \text{ and } B) = \frac{9}{25}$

7) $P(A) = \frac{3}{10}$ $P(B) = \frac{9}{20}$ $P(A|B) = \frac{3}{10}$

8) $P(A) = \frac{2}{5}$ $P(B) = \frac{3}{5}$ $P(A \text{ and } B) = \frac{6}{25}$

9) $P(A) = \frac{13}{20}$ $P(B) = \frac{1}{2}$ $P(A|B) = \frac{13}{20}$

10) $P(A) = \frac{2}{5}$ $P(B) = \frac{3}{4}$ $P(A|B) = \frac{2}{5}$

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

12) $P(A) = \frac{3}{5}$ $P(B) = \frac{3}{10}$ $P(A|B) = \frac{3}{5}$

$$13) P(A) = \frac{1}{5} \quad P(B) = \frac{9}{20} \quad P(A \text{ and } B) = \frac{9}{100}$$

$$14) P(A) = \frac{1}{5} \quad P(B) = \frac{1}{4} \quad P(A \text{ and } B) = \frac{1}{20}$$

$$15) P(A) = \frac{1}{5} \quad P(B) = \frac{1}{5} \quad P(A \text{ and } B) = \frac{1}{50}$$

$$16) P(A) = \frac{1}{2} \quad P(B) = \frac{11}{20} \quad P(A \text{ and } B) = \frac{11}{40}$$

$$17) P(A) = \frac{2}{5} \quad P(B) = \frac{7}{10} \quad P(A \text{ or } B) = \frac{41}{50}$$

$$18) P(A) = \frac{2}{5} \quad P(B) = \frac{3}{4} \quad P(A \text{ and } B) = \frac{3}{10}$$

$$19) P(A) = \frac{1}{5} \quad P(B) = \frac{1}{5} \quad P(A \text{ or } B) = \frac{9}{25}$$

$$20) P(A) = \frac{3}{5} \quad P(B) = \frac{2}{5} \quad P(A \text{ or } B) = \frac{41}{50}$$

Events A and B are independent. Find the missing probability.

$$21) P(A) = \frac{3}{5} \quad P(B) = \frac{13}{20} \quad P(A \text{ and } B) = ?$$

$$22) P(A) = \frac{11}{20} \quad P(B) = \frac{7}{10} \quad P(A \text{ and } B) = ?$$

$$23) P(A) = \frac{2}{5} \quad P(A \text{ or } B) = \frac{11}{20} \quad P(B) = ?$$

$$24) P(B) = \frac{13}{20} \quad P(A \text{ and } B) = \frac{169}{400} \quad P(A) = ?$$

Answers to Tests for independence practice (M2 10.4)

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|----------------------|----------------------|-------------------|---------------------|
| 1) Dependent | 2) Dependent | 3) Dependent | 4) Independent |
| 5) Independent | 6) Independent | 7) Independent | 8) Independent |
| 9) Independent | 10) Independent | 11) Independent | 12) Independent |
| 13) Independent | 14) Independent | 15) Dependent | 16) Independent |
| 17) Independent | 18) Independent | 19) Independent | 20) Dependent |
| 21) $\frac{39}{100}$ | 22) $\frac{77}{200}$ | 23) $\frac{1}{4}$ | 24) $\frac{13}{20}$ |