MATHS

BOOKS - MTG GUIDE

PROBABILITY

Case Study Passage Based Questions

1. Three friends A, B and C are playing a dice game. The numbers rolled up by them in their first three chances were noted and given by

$A = \{1, 5\}, B = \{2, 4, 5\}$ and $C = \{1, 2, 5\}$

as A reaches the cell 'SKIP YOUR NEXT TURN' in second throw.

based on the above information, answer the following questions.

$P(A \mid B)$ =

A. $\frac{1}{6}$

B. $\frac{1}{3}$

C. $\frac{1}{2}$

D. $\frac{2}{3}$

Answer: B

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2. Three friends A, B and C are playing a dice game. The numbers rolled up by them in their first three chances were noted and given by $A = \{1, 5\}, B = \{2, 4, 5\}$ and $C = \{1, 2, 5\}$ as A reaches the cell 'SKIP YOUR NEXT TURN' in

second throw.

based on the above information, answer the following questions.

$P(B \mid C)$ =

A. $\frac{2}{3}$

B. $\frac{1}{12}$

C. $\frac{1}{9}$

D. 0

Answer: A

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3. Three friends A, B and C are playing a dice game. The numbers rolled up by them in their first three chances were noted and given by $A = \{1, 5\}, B = \{2, 4, 5\}$ and $C = \{1, 2, 5\}$ as A reaches the cell 'SKIP YOUR NEXT TURN' in second throw.

based on the above information, answer the following questions.

$P(A \cap B \mid C) =$

A. $\frac{1}{6}$

B. $\frac{1}{2}$

C. $\frac{1}{12}$

D. $\frac{1}{3}$

Answer: D

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4. Three friends A, B and C are playing a dice game. The numbers rolled up by them in their first three chances were noted and given by $A = \{1, 5\}, B = \{2, 4, 5\}$ and $C = \{1, 2, 5\}$ as A reaches the cell 'SKIP YOUR NEXT TURN' in second throw.

based on the above information, answer the following questions.

$P(A \mid C) =$

A. $\frac{1}{4}$

B. 1

C. $\frac{2}{3}$

D. None of these

Answer: C

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5. Three friends A, B and C are playing a dice game. The numbers rolled up by them in their first three chances were noted and given by $A = \{1, 5\}, B = \{2, 4, 5\}$ and $C = \{1, 2, 5\}$ as A reaches the cell 'SKIP YOUR NEXT TURN' in second throw.

based on the above information, answer the following questions.

$P(A \cup B \mid C) =$

A. 0

B. $\frac{1}{2}$

C. $\frac{2}{3}$

D. 1

Answer: D

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6. In a play zone, Astha, is playing crane game. It has 12 blue balls, 8 red balls, 10 yellow balls and 5 green balls. If Astha draws two balls one after the other without replacement, then answer the following questions.

What is the probability that the first is blue and the second ball green ?

A. $\frac{5}{119}$

B. $\frac{12}{119}$

C. $\frac{6}{119}$

D. $\frac{15}{119}$

Answer: C

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7. In a play zone, Astha, is playing crane game. It has 12 blue balls, 8 red balls, 10 yellow balls and 5 green balls. If Astha draws two balls one after the other without replacement, then

answer the following questions.

What is the probability that the first ball is yellow and the second ball is red ?

A. $\frac{16}{119}$

B. $\frac{8}{119}$

C. $\frac{24}{119}$

D. $\frac{64}{119}$

Answer: B

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8. In a play zone, Astha, is playing crane game. It has 12 blue balls, 8 red balls, 10 yellow balls and 5 green balls. If Astha draws two balls one

after the other without replacement, then answer the following questions.

What is the probability that both the balls are red ?

A. $\frac{4}{85}$

B. $\frac{24}{595}$

C. $\frac{12}{119}$

D. $\frac{64}{119}$

Answer: A

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9. In a play zone, Astha, is playing crane game. It has 12 blue balls, 8 red balls, 10 yellow balls and 5 green balls. If Astha draws two balls one

after the other without replacement, then answer the following questions.

What is the probability that the first ball is green and the second ball is not yellow ?

A. $\frac{10}{119}$

B. $\frac{6}{85}$

C. $\frac{12}{119}$

D. None of these

Answer: C

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10. In a play zone, Astha, is playing crane game. It has 12 blue balls, 8 red balls, 10 yellow balls and 5 green balls. If Astha draws two balls one after the other without replacement, then answer the following questions.

What is the probability that both the balls are not blue ?

A. $\frac{6}{595}$

B. $\frac{12}{85}$

C. $\frac{15}{17}$

D. $\frac{253}{595}$

Answer: D

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11. Ajay enrolled himself in an online practice test portal provided by his school for better practice. Out of 5 questions in a set-I, he was

able to solve 4 of them and got stuck in the one which is as shown below.

If A and B are independent events, $P(A) = 0.6$ and $P(B) = 0.8$, then answer the following questions.

$P(A \cap B) =$

A. 0.2

B. 0.9

C. 0.48

D. 0.6

Answer: C

View Text Solution

12. Ajay enrolled himself in an online practice test portal provided by his school for better practice. Out of 5 questions in a set-I, he was able to solve 4 of them and got stuck in the

one which is as shown below.

If A and B are independent events, $P(A) = 0.6$ and $P(B) = 0.8$, then answer the folloqing questions.

$P(A \cup B) =$

A. 0.92

B. 0.08

C. 0.48

D. 0.64

Answer: A

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13. Ajay enrolled himself in an online practice test portal provided by his school for better practice. Out of 5 questions in a set-I, he was able to solve 4 of them and got stuck in the one which is as shown below.

If A and B are independent events, $P(A) = 0.6$ and $P(B) = 0.8$, then answer the following questions.

$P(B \mid A) =$

A. 0.14

B. 0.2

C. 0.6

D. 0.8

Answer: D

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14. Ajay enrolled himself in an online practice test portal provided by his school for better practice. Out of 5 questions in a set-I, he was able to solve 4 of them and got stuck in the one which is as shown below.

If A and B are independent events, $P(A) = 0.6$ and $P(B) = 0.8$, then answer the following questions.

$P(A \mid B) =$

A. 0.6

B. 0.9

C. 0.19

D. 0.11

Answer: A

View Text Solution

15. Ajay enrolled himself in an online practice test portal provided by his school for better practice. Out of 5 questions in a set-I, he was able to solve 4 of them and got stuck in the one which is as shown below.

If A and B are independent events, $P(A) = 0.6$ and $P(B) = 0.8$, then answer the following questions.

P (not A and not B) =

A. 0.01

B. 0.48

C. 0.08

D. 0.91

Answer: C

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16. A doctor is to visit a patient. From the past experience, it is known that the probabilities that the he will come by cab, metro, bike or by other means of transport are respectively 0.3, 0.2, 0.1 and 0.4. The probabilities that the he will be late are 0.25, 0.3, 0.35 and 0.1 if he

vomes by cab, metro,bike and other means of transport respectively.

Based on the above information, answer the following questions.

When the doctor arrives late, what is the probability that he comes by metro ?

A. $\frac{5}{14}$

B. $\frac{2}{7}$

C. $\frac{5}{21}$

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

Answer: B

View Text Solution

17. A doctor is to visit a patient. From the past experience, it is known that the probabilities that the he will come by cab, metro, bike or by other means of transport are respectively 0.3,

0.2, 0.1 and 0.4. The probabilities that the he will be late are 0.25, 0.3, 0.35 and 0.1 if he vomes by cab, metro,bike and other means of transport respectively.

Based on the above information, answer the following questions.

When the doctor arrives late, what is the probability that he comes by cab ?

A. $\frac{4}{21}$

B. $\frac{1}{7}$

C. $\frac{5}{14}$

D. $\frac{2}{21}$

Answer: C

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18. A doctor is to visit a patient. From the past experience, it is known that the probabilities that the he will come by cab, metro, bike or by

other means of transport are respectively 0.3, 0.2, 0.1 and 0.4. The probabilities that the he will be late are 0.25, 0.3, 0.35 and 0.1 if he vomes by cab, metro,bike and other means of transport respectively.

Based on the above information, answer the following questions.

When the doctor arrives late, what is the probability that he comes by bike ?

A. $\frac{5}{21}$

B. $\frac{4}{7}$

C. $\frac{5}{6}$

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

Answer: D

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19. A doctor is to visit a patient. From the past experience, it is known that the probabilities that the he will come by cab, metro, bike or by other means of transport are respectively 0.3, 0.2, 0.1 and 0.4. The probabilities that the he will be late are 0.25, 0.3, 0.35 and 0.1 if he vomes by cab, metro,bike and other means of transport respectively.

Based on the above information, answer the following questions.

When the doctor arrives late, what is the probability that he comes by other means of transport ?

A. $\frac{6}{7}$

B. $\frac{5}{14}$

C. $\frac{4}{21}$

D. $\frac{2}{7}$

Answer: C

View Text Solution

View Text Solution

20. A doctor is to visit a patient. From the past experience, it is known that the probabilities that the he will come by cab, metro, bike or by other means of transport are respectively 0.3, 0.2, 0.1 and 0.4. The probabilities that the he will be late are 0.25, 0.3, 0.35 and 0.1 if he vomes by cab, metro,bike and other means of transport respectively.

Based on the above information, answer the following questions.

What is the probability that the doctor is late by any means ?

A. 1

B. 0

C. $\frac{1}{2}$

D. $\frac{1}{4}$

Answer: A

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21. Suman was doing a project on a school survey, on the average number of hours spent on study by students selected at random. At the end of survey, Suman prepared the following report related to the data.

Let X denotes the average number of hours

spent on study by students. The probability that X and can take the values x, has the following form, where k is some unknown constant.

$$P(X = x) = \begin{cases} 0.2, \text{if x} = 0 \\ \text{kx}, \text{if x} = 1 \text{ or } 2 \\ \text{k (6-x)}, \text{if x} = 3 \text{ or } 4 \\ 0, \text{otherwise} \end{cases}$$

Based on the above information, answer the following questions.

Find the value of k.

A. 0.1

B. 0.2

C. 0.3

D. 0.05

Answer: A

View Text Solution

22. Suman was doing a project on a school survey, on the average number of hours spent on study by students selected at random. At the end of survey, Suman prepared the following report related to the data.

Let X denotes the average number of hours spent on study by students. The probability that X and can take the values x, has the following form, where k is some unknown constant.

$$P(X = x) = \begin{cases} 0.2, \text{if x} = 0 \\ \text{kx, if x} = 1 \text{ or } 2 \\ \text{k (6-x), if x} = 3 \text{ or } 4 \\ 0, \text{otherwise} \end{cases}$$

Based on the above information, answer the following questions.

What is the probability that the average study time of students is at least 3 hours ?

A. 0.4

B. 0.3

C. 0.5

D. 0.1

Answer: B

View Text Solution

23. Suman was doing a project on a school survey, on the average number of hours spent on study by students selected at random. At the end of survey, Suman prepared the

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Let X denotes the average number of hours spent on study by students. The probability that X and can take the values x, has the following form, where k is some unknown constant.

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Based on the above information, answer the following questions.

What is the probability that the average study time of students is at least 3 hours ?

A. 0.5

B. 0.9

C. 0.8

D. 0.1

Answer: A

View Text Solution

24. Suman was doing a project on a school survey, on the average number of hours spent on study by students selected at random. At the end of survey, Suman prepared the

following report related to the data.

Let X denotes the average number of hours spent on study by students. The probability that X and can take the values x, has the following form, where k is some unknown constant.

$$P(X = x) = \begin{cases} 0.2, \text{if x} = 0 \\ \text{kx, if x} = 1 \text{ or } 2 \\ \text{k (6-x), if x} = 3 \text{ or } 4 \\ 0, \text{otherwise} \end{cases}$$

Based on the above information, answer the following questions.

What is the probability that the average study time of students is exactly 2 hours ?

A. 0.4

B. 0.5

C. 0.7

D. 0.2

Answer: D

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25. Suman was doing a project on a school survey, on the average number of hours spent on study by students selected at random. At

the end of survey, Suman prepared the following report related to the data.

Let X denotes the average number of hours spent on study by students. The probability that X and can take the values x, has the following form, where k is some unknown constant.

$$P(X = x) = \begin{cases} 0.2, \text{if x} = 0 \\ \text{kx, if x} = 1 \text{ or } 2 \\ \text{k (6-x), if x} = 3 \text{ or } 4 \\ 0, \text{otherwise} \end{cases}$$

Based on the above information, answer the following questions.

What is the probability that the average study time of students is at least 1 hour ?

A. 0.2

B. 0.4

C. 0.8

D. 0.6

Answer: C

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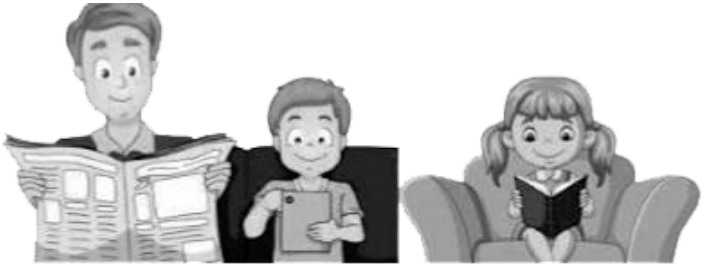
26. On a holiday, a father gave a puzzle from a newspaper to his son Ravi and his daughter Priya. The probabiliy of solving this specific puzzle independent by Ravi and Priya are $\frac{1}{4}$

and $\frac{1}{5}$ respectively.



Based on the above information, answer the following questions.

The chance that both Ravi and Priya solved the Puzzle, is

A. $10\ \%$

B. $5\ \%$

C. $25\ \%$

D. $20\ \%$

Answer: B

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