Question Type : **SA**
Question ID : **3328181341**
Status : **Answered**

CAT 2025

Application No	[redacted]
Candidate Name	
Test Center Name	
Test Date	30/11/2025
Test Time	12:30 PM - 2:30 PM

:

Section : **DILR**

Question Type : **MCQ**
Question ID : **3328181433**
Option 1 ID : **3328184502**
Option 2 ID : **3328184504**
Option 3 ID : **3328184505**
Option 4 ID : **3328184503**
Status : **Not Answered**
Chosen Option : **--**

Comprehension:

Ananya Raga, Bhaskar Tala, Charu Veena, and Devendra Sur are four musicians. Each of them started and completed their training as students under each of three Gurus — Pandit Meghnath, Ustad Samiran, and Acharya Raghunath between 2013 and 2024, including both the years. Each Guru trains any student for consecutive years only, for a span of 2, 3, or 4 years, with each Guru having a different span. During some of these years, a student may not have trained under these Gurus; however, they never trained under multiple Gurus in the same year.

In none of these years, any of these Gurus trained more than two of these students at the same time. When two students train under the same Guru at the same time, they are referred to as Gurubhai, irrespective of their gender.

The following additional facts are known.

1. Ustad Samiran never trained more than one of these students in the same year.
2. Acharya Raghunath did not train any of these students during 2015-2018, as well as during 2021-24.
3. Ananya and Devendra were never Gurubhai; neither were Bhaskar and Charu. All other pairs of musicians were Gurubhai for exactly 2 years.
4. In 2013, Ananya and Bhaskar started their trainings under Pandit Meghnath and under Ustad Samiran, respectively.

SubQuestion No : 1

Q.1 **In which of the following years were Ananya and Bhaskar Gurubhai?**

Ans

✔ 1. 2020

✘ 2. 2018

✘ 3. 2021

✘ 4. 2014

Question Type : **MCQ**
Question ID : **3328181657**
Option 1 ID : **3328185183**
Option 2 ID : **3328185181**
Option 3 ID : **3328185184**
Option 4 ID : **3328185182**
Status : **Not Answered**
Chosen Option : **--**

Comprehension:

Ananya Raga, Bhaskar Tala, Charu Veena, and Devendra Sur are four musicians. Each of them started and completed their training as students under each of three Gurus — Pandit Meghnath, Ustad Samiran, and Acharya Raghunath between 2013 and 2024, including both the years. Each Guru trains any student for consecutive years only, for a span of 2, 3, or 4 years, with each Guru having a different span. During some of these years, a student may not have trained under these Gurus; however, they never trained under multiple Gurus in the same year.

In none of these years, any of these Gurus trained more than two of these students at the same time. When two students train under the same Guru at the same time, they are referred to as Gurubhai, irrespective of their gender.

The following additional facts are known.

1. Ustad Samiran never trained more than one of these students in the same year.
2. Acharya Raghunath did not train any of these students during 2015-2018, as well as during 2021-24.
3. Ananya and Devendra were never Gurubhai; neither were Bhaskar and Charu. All other pairs of musicians were Gurubhai for exactly 2 years.
4. In 2013, Ananya and Bhaskar started their trainings under Pandit Meghnath and under Ustad Samiran, respectively.

SubQuestion No : 2

Q.2 **In which year did Charu begin her training under Pandit Meghnath?**

Ans

✗ 1. 2017

✓ 2. 2015

✗ 3. 2021

✗ 4. 2016

Question Type : **MCQ**
Question ID : **3328181435**
Option 1 ID : **3328184510**
Option 2 ID : **3328184512**
Option 3 ID : **3328184513**
Option 4 ID : **3328184511**
Status : **Not Answered**
Chosen Option : **--**

Comprehension:

Ananya Raga, Bhaskar Tala, Charu Veena, and Devendra Sur are four musicians. Each of them started and completed their training as students under each of three Gurus — Pandit Meghnath, Ustad Samiran, and Acharya Raghunath between 2013 and 2024, including both the years. Each Guru trains any student for consecutive years only, for a span of 2, 3, or 4 years, with each Guru having a different span. During some of these years, a student may not have trained under these Gurus; however, they never trained under multiple Gurus in the same year.

In none of these years, any of these Gurus trained more than two of these students at the same time. When two students train under the same Guru at the same time, they are referred to as Gurubhai, irrespective of their gender.

The following additional facts are known.

1. Ustad Samiran never trained more than one of these students in the same year.
2. Acharya Raghunath did not train any of these students during 2015-2018, as well as during 2021-24.
3. Ananya and Devendra were never Gurubhai; neither were Bhaskar and Charu. All other pairs of musicians were Gurubhai for exactly 2 years.
4. In 2013, Ananya and Bhaskar started their trainings under Pandit Meghnath and under Ustad Samiran, respectively.

SubQuestion No : 3

Q.3 **In which of the following years were Bhaskar and Devendra Gurubhai?**

Ans

✔ 1. 2022

✘ 2. 2015

✘ 3. 2020

✘ 4. 2018

Comprehension:

Ananya Raga, Bhaskar Tala, Charu Veena, and Devendra Sur are four musicians. Each of them started and completed their training as students under each of three Gurus — Pandit Meghnath, Ustad Samiran, and Acharya Raghunath between 2013 and 2024, including both the years. Each Guru trains any student for consecutive years only, for a span of 2, 3, or 4 years, with each Guru having a different span. During some of these years, a student may not have trained under these Gurus; however, they never trained under multiple Gurus in the same year.

In none of these years, any of these Gurus trained more than two of these students at the same time. When two students train under the same Guru at the same time, they are referred to as Gurubhai, irrespective of their gender.

The following additional facts are known.

1. Ustad Samiran never trained more than one of these students in the same year.
2. Acharya Raghunath did not train any of these students during 2015-2018, as well as during 2021-24.
3. Ananya and Devendra were never Gurubhai; neither were Bhaskar and Charu. All other pairs of musicians were Gurubhai for exactly 2 years.
4. In 2013, Ananya and Bhaskar started their trainings under Pandit Meghnath and under Ustad Samiran, respectively.

Question Type : **MCQ**
Question ID : **3328181436**
Option 1 ID : **3328184516**
Option 2 ID : **3328184514**
Option 3 ID : **3328184515**
Option 4 ID : **3328184517**
Status : **Not Answered**
Chosen Option : **--**

SubQuestion No : 4

Q.4 **Which of the following statements is TRUE?**

Ans

✗ 1. Charu was training under Ustad Samiran in 2018.

✗ 2. Ananya was training under Ustad Samiran in 2015.

✗ 3. Ananya was training under Ustad Samiran in 2018.

✓ 4. Charu was training under Ustad Samiran in 2019.

Question Type : **SA**
Question ID : **3328181700**
Status : **Not Answered**

Comprehension:

Ananya Raga, Bhaskar Tala, Charu Veena, and Devendra Sur are four musicians. Each of them started and completed their training as students under each of three Gurus — Pandit Meghnath, Ustad Samiran, and Acharya Raghunath between 2013 and 2024, including both the years. Each Guru trains any student for consecutive years only, for a span of 2, 3, or 4 years, with each Guru having a different span. During some of these years, a student may not have trained under these Gurus; however, they never trained under multiple Gurus in the same year.
In none of these years, any of these Gurus trained more than two of these students at the same time. When two students train under the same Guru at the same time, they are referred to as Gurubhai, irrespective of their gender.
The following additional facts are known.
1. Ustad Samiran never trained more than one of these students in the same year.
2. Acharya Raghunath did not train any of these students during 2015-2018, as well as during 2021-24.
3. Ananya and Devendra were never Gurubhai; neither were Bhaskar and Charu. All other pairs of musicians were Gurubhai for exactly 2 years.
4. In 2013, Ananya and Bhaskar started their trainings under Pandit Meghnath and under Ustad Samiran, respectively.

SubQuestion No : 5

Q.5 In how many of the years between 2013-24, were only two of these four musicians training under these three Gurus?

Case Sensitivity: No

Answer Type: Equal

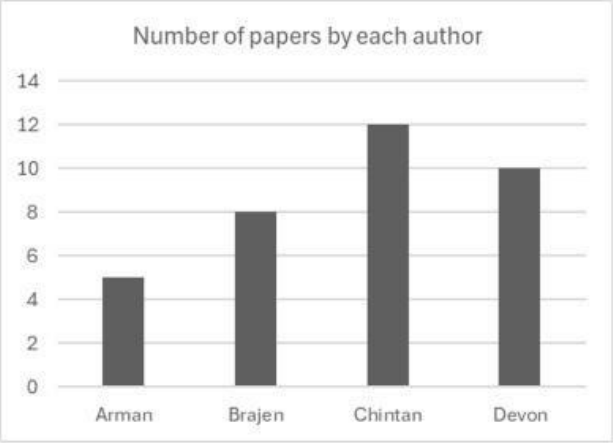
Possible Answer: 4

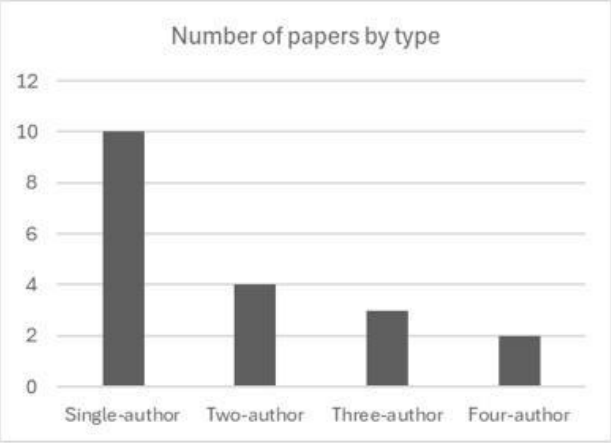
Given Answer : **--**

Question Type : **SA**
Question ID : **3328181653**
Status : **Answered**

Comprehension:

The following charts depict details of research papers written by four authors, Arman, Brajen, Chintan, and Devon. The papers were of four types, single-author, two-author, three-author, and four-author, that is, written by one, two, three, or all four of these authors, respectively. No other authors were involved in writing these papers.





The following additional facts are known.
1. Each of the authors wrote at least one of each of the four types of papers.
2. The four authors wrote different numbers of single-author papers.
3. Both Chintan and Devon wrote more three-author papers than Brajen.
4. The number of single-author and two-author papers written by Brajen were the same.

SubQuestion No : 6

Q.6 **What was the total number of two-author and three-author papers written by Brajen?**

Case Sensitivity: No

Answer Type: Equal

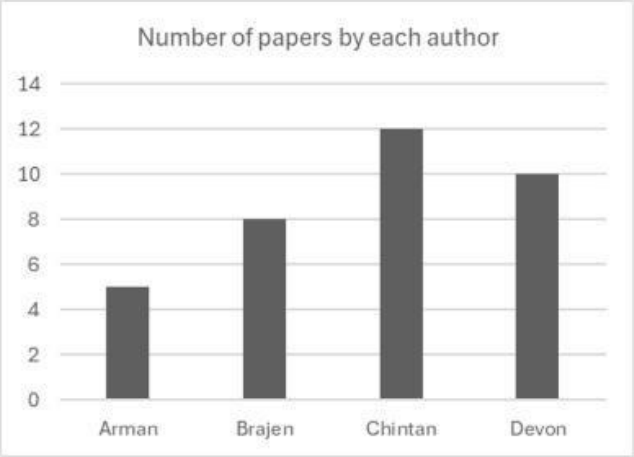
Possible Answer: 4

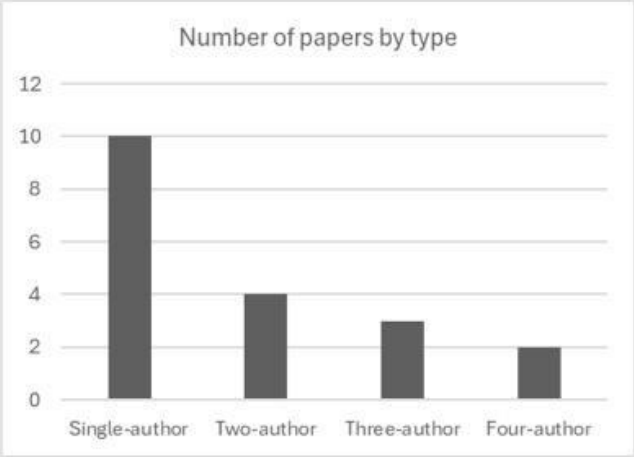
Given Answer : **4**

Question Type : **MCQ**
Question ID : **3328181531**
Option 1 ID : **3328184816**
Option 2 ID : **3328184813**
Option 3 ID : **3328184814**
Option 4 ID : **3328184815**
Status : **Answered**
Chosen Option : **4**

Comprehension:

The following charts depict details of research papers written by four authors, Arman, Brajen, Chintan, and Devon. The papers were of four types, single-author, two-author, three-author, and four-author, that is, written by one, two, three, or all four of these authors, respectively. No other authors were involved in writing these papers.





The following additional facts are known.
1. Each of the authors wrote at least one of each of the four types of papers.
2. The four authors wrote different numbers of single-author papers.
3. Both Chintan and Devon wrote more three-author papers than Brajen.
4. The number of single-author and two-author papers written by Brajen were the same.

SubQuestion No : 7

Q.7 **Which of the following statements is/are NECESSARILY true?**

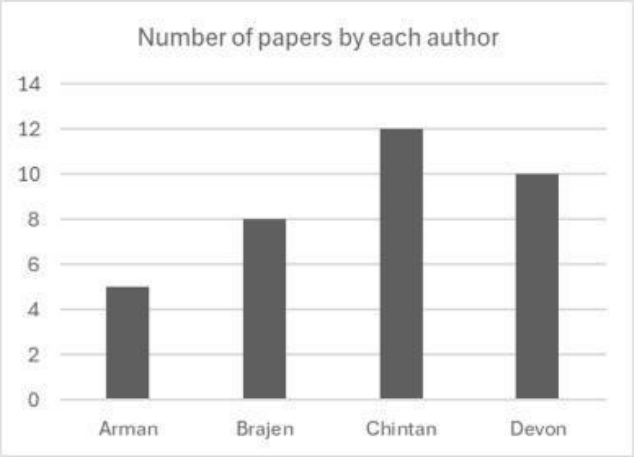
i. Chintan wrote exactly three two-author papers.
ii. Chintan wrote more single-author papers than Devon.

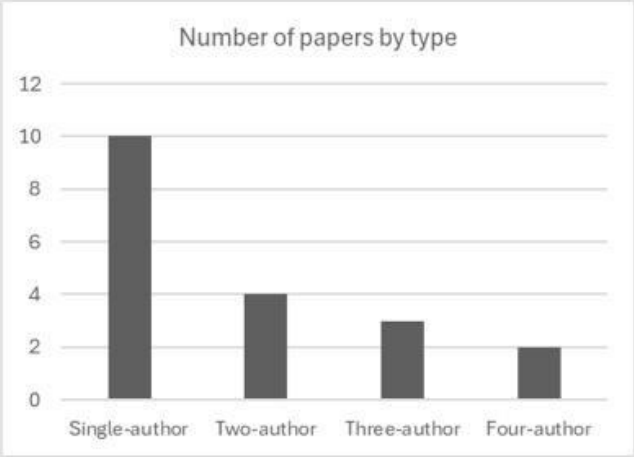
Ans
✔ 1. Neither i nor ii
✘ 2. Only i
✘ 3. Only ii
✘ 4. Both i and ii

Question Type : **MCQ**
Question ID : **3328181532**
Option 1 ID : **3328184818**
Option 2 ID : **3328184819**
Option 3 ID : **3328184817**
Option 4 ID : **3328184820**
Status : **Answered**
Chosen Option : **4**

Comprehension:

The following charts depict details of research papers written by four authors, Arman, Brajen, Chintan, and Devon. The papers were of four types, single-author, two-author, three-author, and four-author, that is, written by one, two, three, or all four of these authors, respectively. No other authors were involved in writing these papers.





The following additional facts are known.
1. Each of the authors wrote at least one of each of the four types of papers.
2. The four authors wrote different numbers of single-author papers.
3. Both Chintan and Devon wrote more three-author papers than Brajen.
4. The number of single-author and two-author papers written by Brajen were the same.

SubQuestion No : 8

Q.8 **Which of the following statements is/are NECESSARILY true?**

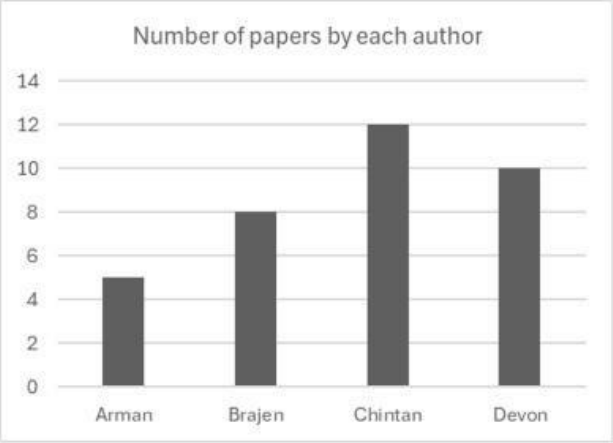
i. Arman wrote three-author papers only with Chintan and Devon.
ii. Brajen wrote three-author papers only with Chintan and Devon.

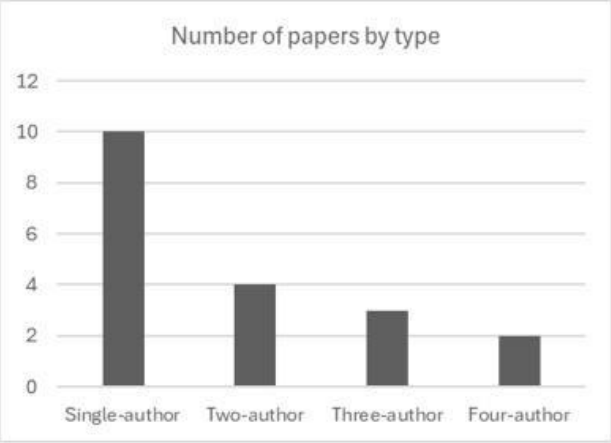
Ans
✗ 1. Only ii
✓ 2. Both i and ii
✗ 3. Only i
✗ 4. Neither i or ii

Question Type : **SA**
Question ID : **3328181654**
Status : **Answered**

Comprehension:

The following charts depict details of research papers written by four authors, Arman, Brajen, Chintan, and Devon. The papers were of four types, single-author, two-author, three-author, and four-author, that is, written by one, two, three, or all four of these authors, respectively. No other authors were involved in writing these papers.





The following additional facts are known.
1. Each of the authors wrote at least one of each of the four types of papers.
2. The four authors wrote different numbers of single-author papers.
3. Both Chintan and Devon wrote more three-author papers than Brajen.
4. The number of single-author and two-author papers written by Brajen were the same.

SubQuestion No : 9

Q.9 If Devon wrote more than one two-author papers, then how many two-author papers did Chintan write?

Case Sensitivity: No

Answer Type: Equal

Possible Answer: 3

Given Answer : **3**

Question Type : **SA**
Question ID : **3328181638**
Status : **Not Answered**

Comprehension:

There are six spherical balls, B1, B2, B3, B4, B5, and B6, and four circular hoops H1, H2, H3, and H4.

Each ball was tested on each hoop once, by attempting to pass the ball through the hoop. If the diameter of a ball is not larger than the diameter of the hoop, the ball passes through the hoop and makes a “ping”. Any ball having a diameter larger than that of the hoop gets stuck on that hoop and does not make a ping.

The following additional information is known:
1. B1 and B6 each made a ping on H4, but B5 did not.
2. B4 made a ping on H3, but B1 did not.
3. All balls, except B3, made pings on H1.
4. None of the balls, except B2, made a ping on H2.

SubQuestion No : 10

Q.10 **What was the total number of pings made by B1, B2, and B3?**

Case Sensitivity: No

Answer Type: Equal

Possible Answer: 6

Given Answer : **--**

Comprehension:

There are six spherical balls, B1, B2, B3, B4, B5, and B6, and four circular hoops H1, H2, H3, and H4.

Each ball was tested on each hoop once, by attempting to pass the ball through the hoop. If the diameter of a ball is not larger than the diameter of the hoop, the ball passes through the hoop and makes a “ping”. Any ball having a diameter larger than that of the hoop gets stuck on that hoop and does not make a ping.

The following additional information is known:
1. B1 and B6 each made a ping on H4, but B5 did not.
2. B4 made a ping on H3, but B1 did not.
3. All balls, except B3, made pings on H1.
4. None of the balls, except B2, made a ping on H2.

Question Type : **MCQ**
Question ID : **3328181082**
Option 1 ID : **3328183310**
Option 2 ID : **3328183309**
Option 3 ID : **3328183311**
Option 4 ID : **3328183308**
Status : **Answered**
Chosen Option : **3**

SubQuestion No : 11

Q.11 **Which of the following statements about the relative sizes of the balls is NOT NECESSARILY true?**

Ans

✗ 1. B4 < B5 < B3

✗ 2. B2 < B1 < B5

✓ 3. B1 < B6 < B3

✗ 4. B1 < B5 < B3

Comprehension:

There are six spherical balls, B1, B2, B3, B4, B5, and B6, and four circular hoops H1, H2, H3, and H4.

Each ball was tested on each hoop once, by attempting to pass the ball through the hoop. If the diameter of a ball is not larger than the diameter of the hoop, the ball passes through the hoop and makes a “ping”. Any ball having a diameter larger than that of the hoop gets stuck on that hoop and does not make a ping.

The following additional information is known:
1. B1 and B6 each made a ping on H4, but B5 did not.
2. B4 made a ping on H3, but B1 did not.
3. All balls, except B3, made pings on H1.
4. None of the balls, except B2, made a ping on H2.

Question Type : **MCQ**
Question ID : **3328181083**
Option 1 ID : **3328183312**
Option 2 ID : **3328183315**
Option 3 ID : **3328183313**
Option 4 ID : **3328183314**
Status : **Answered**
Chosen Option : **1**

SubQuestion No : 12

Q.12 **Which of the following statements about the relative sizes of the hoops is true?**

Ans

✔ 1. H2 < H3 < H4 < H1

✘ 2. H1 < H3 < H4 < H2

✘ 3. H1 < H4 < H3 < H2

✘ 4. H2 < H4 < H3 < H1

Comprehension:

There are six spherical balls, B1, B2, B3, B4, B5, and B6, and four circular hoops H1, H2, H3, and H4.

Each ball was tested on each hoop once, by attempting to pass the ball through the hoop. If the diameter of a ball is not larger than the diameter of the hoop, the ball passes through the hoop and makes a “ping”. Any ball having a diameter larger than that of the hoop gets stuck on that hoop and does not make a ping.

The following additional information is known:
1. B1 and B6 each made a ping on H4, but B5 did not.
2. B4 made a ping on H3, but B1 did not.
3. All balls, except B3, made pings on H1.
4. None of the balls, except B2, made a ping on H2.

Question Type : **MCQ**
Question ID : **3328181081**
Option 1 ID : **3328183305**
Option 2 ID : **3328183306**
Option 3 ID : **3328183307**
Option 4 ID : **3328183304**
Status : **Answered**
Chosen Option : **1**

SubQuestion No : 13

Q.13 **What BEST can be said about the total number of pings from all the tests undertaken?**

Ans

✔ 1. 12 or 13

✘ 2. 13 or 14

✘ 3. 12 or 13 or 14

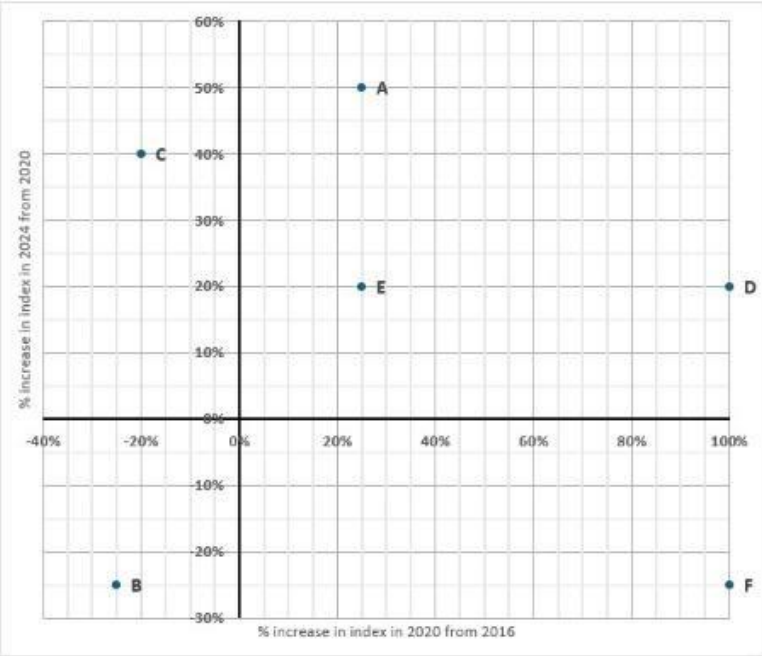
✘ 4. At least 9

Question Type : **SA**
Question ID : **3328181639**
Status : **Not Answered**

Comprehension:

The Sustainability Index (SI) of a country at a point in time is an *integer* between 1 and 100. This question is related to SI of six countries – A, B, C, D, E, and F – at three different points in time – 2016, 2020, and 2024. The plot represents the exact changes in their SI, with X-coordinate representing % increase in 2020 from 2016, i.e., (SI in 2020 minus SI in 2016) / (SI in 2016), and Y-coordinate representing % increase in 2024 from 2020. At any point in time, the country with highest SI is ranked 1, while the country with the lowest SI is ranked 6. The following additional facts are known.

1. In 2016, B, C, E, and A had ranks 1, 2, 3, and 4 respectively.
2. F had lower SI than any other country in 2016, 2020, and 2024.
3. In 2024, E was the only country with SI of 90.
4. The range of SI of the six countries was 60 in 2016 as well as in 2024.



SubQuestion No : 14

Q.14 **What was the SI of E in 2016?**

Case Sensitivity: No

Answer Type: Equal

Possible Answer: 60

Given Answer -- :

Question Type : **SA**
Question ID : **3328181640**
Status : **Not Answered**

Comprehension:

The Sustainability Index (SI) of a country at a point in time is an *integer* between 1 and 100. This question is related to SI of six countries – A, B, C, D, E, and F – at three different points in time – 2016, 2020, and 2024. The plot represents the exact changes in their SI, with X-coordinate representing % increase in 2020 from 2016, i.e., (SI in 2020 minus SI in 2016) / (SI in 2016), and Y-coordinate representing % increase in 2024 from 2020. At any point in time, the country with highest SI is ranked 1, while the country with the lowest SI is ranked 6. The following additional facts are known.

1. In 2016, B, C, E, and A had ranks 1, 2, 3, and 4 respectively.
2. F had lower SI than any other country in 2016, 2020, and 2024.
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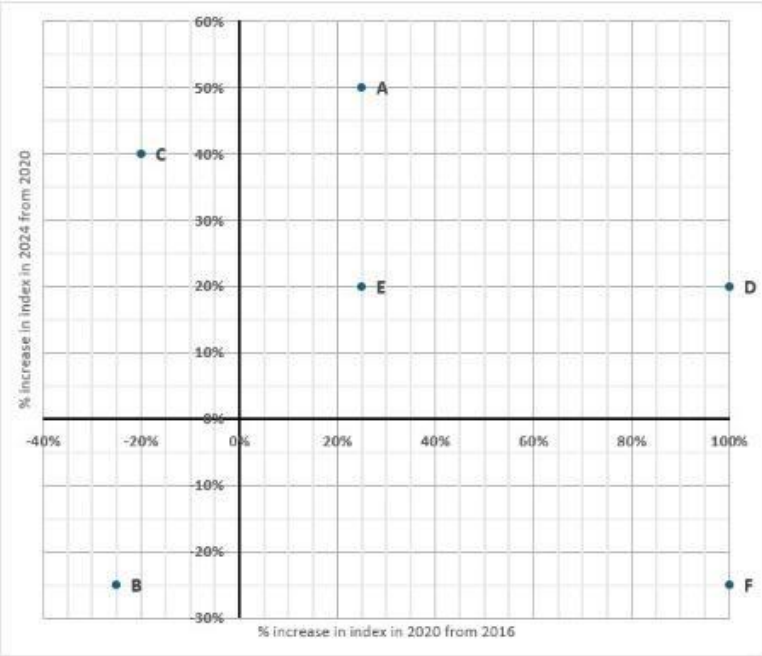
4. The range of SI of the six countries was 60 in 2016 as well as in 2024.



SubQuestion No : 15

Q.15 **What was the SI of F in 2020?**

Case Sensitivity: No

Answer Type: Equal

Possible Answer: 40

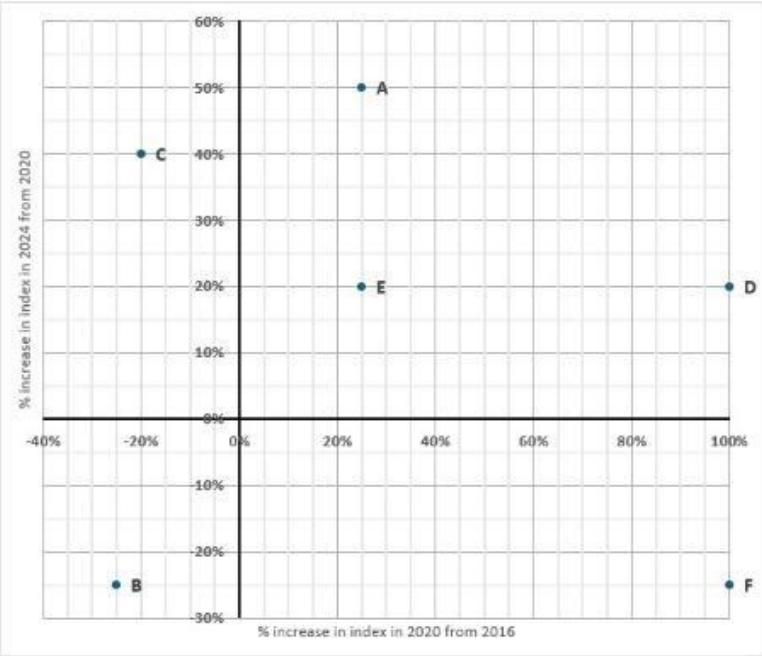
Given Answer -- :

Question Type : **SA**
Question ID : **3328181641**
Status : **Not Answered**

Comprehension:

The Sustainability Index (SI) of a country at a point in time is an *integer* between 1 and 100. This question is related to SI of six countries – A, B, C, D, E, and F – at three different points in time – 2016, 2020, and 2024. The plot represents the exact changes in their SI, with X-coordinate representing % increase in 2020 from 2016, i.e., (SI in 2020 minus SI in 2016) / (SI in 2016), and Y-coordinate representing % increase in 2024 from 2020. At any point in time, the country with highest SI is ranked 1, while the country with the lowest SI is ranked 6. The following additional facts are known.

1. In 2016, B, C, E, and A had ranks 1, 2, 3, and 4 respectively.
2. F had lower SI than any other country in 2016, 2020, and 2024.
3. In 2024, E was the only country with SI of 90.
4. The range of SI of the six countries was 60 in 2016 as well as in 2024.



SubQuestion No : 16

Q.16 **What was the SI of C in 2024?**

Case Sensitivity: No

Answer Type: Equal

Possible Answer: 84

Given Answer -- :

Comprehension:

Question Type : **MCQ**
Question ID : **3328181411**
Option 1 ID : **3328184427**
Option 2 ID : **3328184429**
Option 3 ID : **3328184428**
Option 4 ID : **3328184426**
Status : **Not Answered**
Chosen Option : **--**

The Sustainability Index (SI) of a country at a point in time is an *integer* between 1 and 100. This question is related to SI of six countries – A, B, C, D, E, and F – at three different points in time – 2016, 2020, and 2024. The plot represents the exact changes in their SI, with X-coordinate representing % increase in 2020 from 2016, i.e., (SI in 2020 minus SI in 2016) / (SI in 2016), and Y-coordinate representing % increase in 2024 from 2020. At any point in time, the country with highest SI is ranked 1, while the country with the lowest SI is ranked 6. The following additional facts are known.

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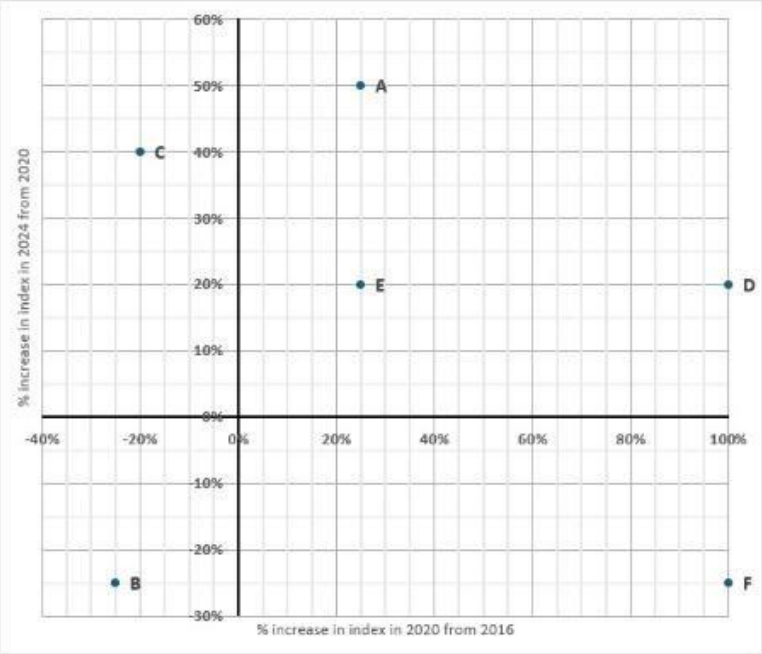

SubQuestion No : 17

Q.17 **What was the SI of B in 2024?**

Ans

✗ 1. 60

✗ 2. 54

✗ 3. 80

✔ 4. 45

Question Type : **SA**
Question ID : **3328181679**
Status : **Not Answered**

Comprehension:

The two most populous cities and the non-urban region (NUR) of each of three states, Whimshire, Fogglia, and Humbleset, are assigned Pollution Measures (PMs). These nine PMs are all distinct multiples of 10, ranging from 10 to 90. The six cities in increasing order of their PMs are: Blusterburg, Noodleton, Splutterville, Quackford, Mumpypore, Zingaloo.

The Pollution Index (PI) of a state is a weighted average of the PMs of its NUR and cities, with a weight of 50% for the NUR, and 25% each for its two cities.

There is only one pair of an NUR and a city (considering all cities and all NURs) where the PM of the NUR is greater than that of the city. That NUR and the city both belong to Humbleset.

The PIs of all three states are *distinct integers*, with Humbleset and Fogglia having the highest and the lowest PI respectively.

SubQuestion No : 18

Q.18 **What is the PI of Whimshire?**

Case Sensitivity: No

Answer Type: Equal

Possible Answer: 45

Given Answer : **--**

Question Type : **SA**
Question ID : **3328181680**
Status : **Not Answered**

Comprehension:

The two most populous cities and the non-urban region (NUR) of each of three states, Whimshire, Fogglia, and Humbleset, are assigned Pollution Measures (PMs). These nine PMs are all distinct multiples of 10, ranging from 10 to 90. The six cities in increasing order of their PMs are: Blusterburg, Noodleton, Splutterville, Quackford, Mumpypore, Zingaloo.

The Pollution Index (PI) of a state is a weighted average of the PMs of its NUR and cities, with a weight of 50% for the NUR, and 25% each for its two cities.

There is only one pair of an NUR and a city (considering all cities and all NURs) where the PM of the NUR is greater than that of the city. That NUR and the city both belong to Humbleset.

The PIs of all three states are *distinct integers*, with Humbleset and Fogglia having the highest and the lowest PI respectively.

SubQuestion No : 19

Q.19 **What is the PI of Fogglia?**

Case Sensitivity: No

Answer Type: Equal

Possible Answer: 35

Given Answer : **--**

Question Type : **SA**
Question ID : **3328181681**
Status : **Not Answered**

Comprehension:

The two most populous cities and the non-urban region (NUR) of each of three states, Whimshire, Fogglia, and Humbleset, are assigned Pollution Measures (PMs). These nine PMs are all distinct multiples of 10, ranging from 10 to 90. The six cities in increasing order of their PMs are: Blusterburg, Noodleton, Splutterville, Quackford, Mumpypore, Zingaloo.

The Pollution Index (PI) of a state is a weighted average of the PMs of its NUR and cities, with a weight of 50% for the NUR, and 25% each for its two cities.

There is only one pair of an NUR and a city (considering all cities and all NURs) where the PM of the NUR is greater than that of the city. That NUR and the city both belong to Humbleset.

The PIs of all three states are *distinct integers*, with Humbleset and Fogglia having the highest and the lowest PI respectively.

SubQuestion No : 20

Q.20 **What is the PI of Humbleset?**

Case Sensitivity: No

Answer Type: Equal

Possible Answer: 50

Given Answer : **--**

Question Type : **MCQ**
Question ID : **3328181456**
Option 1 ID : **3328184583**
Option 2 ID : **3328184582**
Option 3 ID : **3328184584**
Option 4 ID : **3328184585**
Status : **Not Answered**
Chosen Option : **--**

Comprehension:

The two most populous cities and the non-urban region (NUR) of each of three states, Whimshire, Fogglia, and Humbleset, are assigned Pollution Measures (PMs). These nine PMs are all distinct multiples of 10, ranging from 10 to 90. The six cities in increasing order of their PMs are: Blusterburg, Noodleton, Splutterville, Quackford, Mumpypore, Zingaloo.

The Pollution Index (PI) of a state is a weighted average of the PMs of its NUR and cities, with a weight of 50% for the NUR, and 25% each for its two cities.

There is only one pair of an NUR and a city (considering all cities and all NURs) where the PM of the NUR is greater than that of the city. That NUR and the city both belong to Humbleset.

The PIs of all three states are *distinct integers*, with Humbleset and Fogglia having the highest and the lowest PI respectively.

SubQuestion No : 21

Q.21 **Which pair of cities definitely belong to the same state?**

Ans

✗ 1. Mumpypore, Zingaloo

✗ 2. Splutterville, Quackford

✗ 3. Blusterburg, Mumpypore

✓ 4. Noodleton, Quackford

Comprehension:

The two most populous cities and the non-urban region (NUR) of each of three states, Whimshire, Fogglia, and Humbleset, are assigned Pollution Measures (PMs). These nine PMs are all distinct multiples of 10, ranging from 10 to 90. The six cities in increasing order of their PMs are: Blusterburg, Noodleton, Splutterville, Quackford, Mumpypore, Zingaloo.

The Pollution Index (PI) of a state is a weighted average of the PMs of its NUR and cities, with a weight of 50% for the NUR, and 25% each for its two cities.

There is only one pair of an NUR and a city (considering all cities and all NURs) where the PM of the NUR is greater than that of the city. That NUR and the city both belong to Humbleset.

The PIs of all three states are *distinct integers*, with Humbleset and Fogglia having the highest and the lowest PI respectively.

Question Type : **SA**
Question ID : **3328181682**
Status : **Not Answered**

SubQuestion No : 22

Q.22 **For how many of the cities and NURs is it possible to identify their PM and the state they belong to?**

Case Sensitivity: No

Answer Type: Equal

Possible Answer: 9

Given Answer : **--**

Section : **QA**

Q.1 If $9^{x^2+2x-3} - 4\left(3^{x^2+2x-2}\right) + 27 = 0$, then the product of all possible values of x is

Question Type : **MCQ**
Question ID : **3328181029**
Option 1 ID : **3328183102**
Option 2 ID : **3328183105**
Option 3 ID : **3328183104**
Option 4 ID : **3328183103**
Status : **Not Answered**
Chosen Option : **--**

Ans

✗ 1. 30

✓ 2. 20

✗ 3. 5

✗ 4. 15

Q.2 **The average number of copies of a book sold per day by a shopkeeper is 60 in the initial seven days and 63 in the initial eight days, after the book launch. On the ninth day, she sells 11 copies less than the eighth day, and the average number of copies sold per day from second day to ninth day becomes 66. The number of copies sold on the first day of the book launch is**

Case Sensitivity: No

Answer Type: Equal

Possible Answer: NA

Given Answer : **49**

Question Type : **SA**
Question ID : **3328181729**
Status : **Answered**

Q.3 The set of all real values of x for which $(x^2 - |x + 9| + x) > 0$, is

Ans

✔ 1. $(-\infty, -3) \cup (3, \infty)$

✘ 2. $(-\infty, -9) \cup (3, \infty)$

✘ 3. $(-9, -3) \cup (3, \infty)$

✘ 4. $(-\infty, -9) \cup (9, \infty)$

Question Type : **MCQ**
Question ID : **3328181208**
Option 1 ID : **3328183733**
Option 2 ID : **3328183734**
Option 3 ID : **3328183735**
Option 4 ID : **3328183732**
Status : **Answered**
Chosen Option : **4**

Q.4 **An item with a cost price of Rs. 1650 is sold at a certain discount on a fixed marked price to earn a profit of 20% on the cost price. If the discount was doubled, the profit would have been Rs. 110. The rate of discount, in percentage, at which the profit percentage would be equal to the rate of discount, is nearest to**

Ans

✘ 1. 16

✘ 2. 18

✔ 3. 14

✘ 4. 12

Question Type : **MCQ**
Question ID : **3328181257**
Option 1 ID : **3328183909**
Option 2 ID : **3328183906**
Option 3 ID : **3328183908**
Option 4 ID : **3328183907**
Status : **Not Attempted and Marked For Review**
Chosen Option : **--**

Q.5

If m and n are integers such that $(m+2n)(2m+n)=27$, then the maximum possible value of $2m-3n$ is

Question Type : **SA**
Question ID : **3328181731**
Status : **Answered**

Case Sensitivity: No
Answer Type: Equal
Possible Answer: NA

Given Answer : **13**

Q.6

The sum of digits of the number $(625)^{65} \times (128)^{36}$, is

Question Type : **SA**
Question ID : **3328181725**
Status : **Not Answered**

Case Sensitivity: No
Answer Type: Equal
Possible Answer: NA

Given Answer : **--**

Q.7

The equations $3x^2-5x+p=0$ and $2x^2-2x+q=0$ have one common root. The sum of the other roots of these two equations is

Question Type : **MCQ**
Question ID : **3328181223**
Option 1 ID : **3328183791**
Option 2 ID : **3328183788**
Option 3 ID : **3328183789**
Option 4 ID : **3328183790**
Status : **Not Attempted and Marked For Review**
Chosen Option : **--**

Ans

✔ 1. $\frac{8}{3}-p+\frac{3}{2}q$

✘ 2. $\frac{2}{3}-p+\frac{3}{2}q$

✘ 3. $\frac{8}{3}+p+\frac{1}{3}q$

✘ 4. $\frac{2}{3}-2p+\frac{2}{3}q$

Q.8 If $\log_{64} x^2 + \log_8 \sqrt{y} + 3\log_{512}(\sqrt{y}\, z) = 4$, where x, y and z are positive real numbers, then the minimum possible value of $(x + y + z)$ is

Question Type : **MCQ**
Question ID : **3328181027**
Option 1 ID : **3328183096**
Option 2 ID : **3328183095**
Option 3 ID : **3328183094**
Option 4 ID : **3328183097**
Status : **Not Answered**
Chosen Option : **--**

Ans
✔ 1. 48
✗ 2. 36
✗ 3. 24
✗ 4. 96

Q.9 **Rita and Sneha can row a boat at 5 km/h and 6 km/h in still water, respectively. In a river flowing with a constant velocity, Sneha takes 48 minutes more to row 14 km upstream than to row the same distance downstream. If Rita starts from a certain location in the river, and returns downstream to the same location, taking a total of 100 minutes, then the total distance, in km, Rita will cover is**

Question Type : **SA**
Question ID : **3328181734**
Status : **Not Answered**

Case Sensitivity: No
Answer Type: Equal
Possible Answer: NA

Given Answer : **--**

Q.10 Suppose a, b, c are three distinct natural numbers, such that $3ac = 8(a + b)$. Then, the smallest possible value of $3a + 2b + c$ is

Question Type : **SA**
Question ID : **3328181702**
Status : **Answered**

Case Sensitivity: No
Answer Type: Equal
Possible Answer: NA

Given Answer : **28**

Q.11 Let $f(x) = \frac{x}{(2x-1)}$ and $g(x) = \frac{x}{(x-1)}$. Then, the domain of the function $h(x) = f(g(x)) + g(f(x))$ is all real numbers except

Ans
1. $-1, \frac{1}{2}$, and 1
2. $\frac{1}{2}$, 1, and $\frac{3}{2}$
3. $-\frac{1}{2}, \frac{1}{2}$, and 1
4. $\frac{1}{2}$, and 1

Question Type : **MCQ**
Question ID : **3328181054**
Option 1 ID : **3328183208**
Option 2 ID : **3328183209**
Option 3 ID : **3328183207**
Option 4 ID : **3328183206**
Status : **Not Answered**
Chosen Option : **--**

Q.12 **A loan of Rs 1000 is fully repaid by two installments of Rs 530 and Rs 594, paid at the end of first and second year, respectively. If the interest is compounded annually, then the rate of interest, in percentage, is**

Ans
1. 10
2. 11
3. 9
4. 8

Question Type : **MCQ**
Question ID : **3328181280**
Option 1 ID : **3328183992**
Option 2 ID : **3328183993**
Option 3 ID : **3328183990**
Option 4 ID : **3328183991**
Status : **Not Answered**
Chosen Option : **--**

Q.13 Two tangents drawn from a point P touch a circle with center O at points Q and R. Points A and B lie on PQ and PR, respectively, such that AB is also a tangent to the same circle. If $\angle AOB = 50°$, then $\angle APB$, in degrees, equals

Case Sensitivity: No
Answer Type: Equal
Possible Answer: NA

Given Answer : **--**

Question Type : **SA**
Question ID : **3328181732**
Status : **Not Answered**

Q.14 The number of divisors of $(2^6 \times 3^5 \times 5^3 \times 7^2)$, which are of the form $(3r + 1)$, where r is a non-negative integer, is

Ans
✗ 1. 36
✗ 2. 56
✗ 3. 24
✓ 4. 42

Question Type : **MCQ**
Question ID : **3328181022**
Option 1 ID : **3328183077**
Option 2 ID : **3328183075**
Option 3 ID : **3328183076**
Option 4 ID : **3328183074**
Status : **Not Answered**
Chosen Option : **--**

Q.15 **Let ABCDEF be a regular hexagon and P and Q be the midpoints of AB and CD, respectively. Then, the ratio of the areas of trapezium PBCQ and hexagon ABCDEF is**

Ans
✗ 1. 6 : 19
✓ 2. 5 : 24
✗ 3. 6 : 25
✗ 4. 7 : 24

Question Type : **MCQ**
Question ID : **3328181059**
Option 1 ID : **3328183228**
Option 2 ID : **3328183226**
Option 3 ID : **3328183229**
Option 4 ID : **3328183227**
Status : **Not Answered**
Chosen Option : **--**

Q.16 If a, b, c and d are integers such that their sum is 46, then the minimum possible value of $(a-b)^2 + (a-c)^2 + (a-d)^2$ is

Case Sensitivity: No
Answer Type: Equal
Possible Answer: NA

Given Answer : **6**

Question Type : **SA**
Question ID : **3328181728**
Status : **Answered**

Q.17 **The ratio of expenditures of Lakshmi and Meenakshi is 2 : 3, and the ratio of income of Lakshmi to expenditure of Meenakshi is 6 : 7. If excess of income over expenditure is saved by Lakshmi and Meenakshi, and the ratio of their savings is 4 : 9, then the ratio of their incomes is**

Ans
✓ 1. 3 : 5
✗ 2. 5 : 6
✗ 3. 2 : 1
✗ 4. 7 : 8

Question Type : **MCQ**
Question ID : **3328181188**
Option 1 ID : **3328183657**
Option 2 ID : **3328183658**
Option 3 ID : **3328183656**
Option 4 ID : **3328183659**
Status : **Not Attempted and Marked For Review**
Chosen Option : **--**

Q.18 Let a_n be the n^{th} term of a decreasing infinite geometric progression. If $a_1 + a_2 + a_3 = 52$ and $a_1a_2 + a_2a_3 + a_3a_1 = 624$, then the sum of this geometric progression is

Ans
✗ 1. 57
✓ 2. 54
✗ 3. 60
✗ 4. 63

Question Type : **MCQ**
Question ID : **3328181002**
Option 1 ID : **3328183001**
Option 2 ID : **3328182998**
Option 3 ID : **3328182999**
Option 4 ID : **3328183000**
Status : **Not Answered**
Chosen Option : **--**

Q.19 **A mixture of coffee and cocoa, 16% of which is coffee, costs Rs 240 per kg. Another mixture of coffee and cocoa, of which 36% is coffee, costs Rs 320 per kg. If a new mixture of coffee and cocoa costs Rs 376 per kg, then the quantity, in kg, of coffee in 10 kg of this new mixture is**

Ans
✓ 1. 5
✗ 2. 4
✗ 3. 2.5
✗ 4. 6

Question Type : **MCQ**
Question ID : **3328181212**
Option 1 ID : **3328183749**
Option 2 ID : **3328183750**
Option 3 ID : **3328183751**
Option 4 ID : **3328183748**
Status : **Not Attempted and Marked For Review**
Chosen Option : **--**

Q.20 In a ΔABC, points D and E are on the sides BC and AC, respectively. BE and AD intersect at point T such that AD : AT = 4 : 3, and BE : BT = 5 : 4. Point F lies on AC such that DF is parallel to BE. Then, BD : CD is

Ans
✗ 1. 15 : 4
✓ 2. 11 : 4
✗ 3. 7 : 4
✗ 4. 9 : 4

Question Type : **MCQ**
Question ID : **3328181358**
Option 1 ID : **3328184244**
Option 2 ID : **3328184242**
Option 3 ID : **3328184243**
Option 4 ID : **3328184245**
Status : **Not Answered**
Chosen Option : **--**

Q.21 **Ankita is twice as efficient as Bipin, while Bipin is twice as efficient as Chandan. All three of them start together on a job, and Bipin leaves the job after 20 days. If the job got completed in 60 days, the number of days needed by Chandan to complete the job alone, is**

Case Sensitivity: No

Answer Type: Equal

Possible Answer: NA

Given Answer : **340**

Question Type : **SA**
Question ID : **3328181733**
Status : **Answered**

Q.22 **A certain amount of money was divided among Pinu, Meena, Rinu and Seema. Pinu received 20% of the total amount and Meena received 40% of the remaining amount. If Seema received 20% less than Pinu, the ratio of the amounts received by Pinu and Rinu is**

Ans

✗ 1. 2 : 1

✗ 2. 1 : 2

✓ 3. 5 : 8

✗ 4. 8 : 5

Question Type : **MCQ**
Question ID : **3328181050**
Option 1 ID : **3328183191**
Option 2 ID : **3328183190**
Option 3 ID : **3328183192**
Option 4 ID : **3328183193**
Status : **Answered**
Chosen Option : **3**

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