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Mock CAT – 09 2018

Scorecard (procreview.jsp?sid=aaa5BycB_LJvH-TdBuPHwSun Jan 20 07:20:31 UTC 2019&qsetId=Z2ncLrlPaPQ=&qsetName=Mock CAT – 09 2018)

Accuracy (AccSelectGraph.jsp?sid=aaa5BycB_LJvH-TdBuPHwSun Jan 20 07:20:31 UTC 2019&qsetId=Z2ncLrlPaPQ=&qsetName=Mock CAT – 09 2018)

Qs Analysis (QsAnalysis.jsp?sid=aaa5BycB_LJvH-TdBuPHwSun Jan 20 07:20:31 UTC 2019&qsetId=Z2ncLrlPaPQ=&qsetName=Mock CAT – 09 2018)

Video Attempt (VideoAnalysis.jsp?sid=aaa5BycB_LJvH-TdBuPHwSun Jan 20 07:20:31 UTC 2019&qsetId=Z2ncLrlPaPQ=&qsetName=Mock CAT – 09 2018)

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VARC

LRDI

QA

Sec 1

Directions for questions (1 to 6): The passage below is accompanied by a set of six questions. Choose the best answer to each question.

Artificial intelligence is becoming good at many "human" jobs—diagnosing disease, translating languages, providing customer service—and it's improving fast. This is raising reasonable fears that AI will ultimately replace human workers throughout the economy. But that's not the inevitable, or even most likely, outcome. Never before have digital tools been so responsive to us, nor we to our tools. While AI will radically alter how work gets done and who does it, the technology's larger impact will be in complementing and augmenting human capabilities, not replacing them.

Certainly, many companies have used AI to automate processes, but those that deploy it mainly to displace employees will see only short-term productivity gains. In our research involving 1,500 companies, we found that firms achieve the most significant performance improvements when humans and machines work together. Through such collaborative intelligence, humans and AI actively enhance each other's complementary strengths: the leadership, teamwork, creativity, and social skills of the former, and the speed, scalability, and quantitative capabilities of the latter. What comes naturally to people (making a joke, for example) can be tricky for machines, and what's straightforward for machines (analyzing gigabytes of data) remains virtually impossible for humans. Business requires both kinds of capabilities.

To take full advantage of this collaboration, companies must understand how humans can most effectively augment machines, how machines can enhance what humans do best, and how to redesign business processes to support the partnership.

Humans need to perform three crucial roles. They must *train* machines to perform certain tasks; *explain* the outcomes of those tasks, especially when the results are counterintuitive or controversial; and *sustain* the responsible use of machines (by, for example, preventing robots from harming humans).

Machine-learning algorithms must be taught how to perform the work they're designed to do. In that effort, huge training data sets are amassed to teach machine-translation apps to handle idiomatic expressions, medical apps to detect disease, and recommendation engines to support financial decision making. In addition, AI systems must be trained how best to interact with humans.

Organizations that use machines merely to displace workers through automation will miss the full potential of AI. Such a strategy is misguided from the get-go. Tomorrow's leaders will instead be those that embrace collaborative intelligence, transforming their operations, their markets, their industries, and—no less important—their workforces.

Q.1

Which of the following has been portrayed as a shortcoming of employing AI as a part of the automation process?

1 **It will ultimately replace human workers.**

2 **It will yield short term increase in productivity.**

3 **The training, explaining, and sustenance of AI or machines will not be possible.**

4 **Things like making jokes and using idiomatic expressions, which come naturally to humans, will not be possible for AI.**

Bookmark

Answer key/Solution

Solution:
Correct Answer : 2
Genre: Science and Technology
It is a tricky but 'doable' factual question.
Option 1 – It has been denied by the author himself. Refer to the lines – "This is raising ...But that's not the inevitable, or even most likely, outcome."
Option 2 – It is the correct answer. Refer to-"… but those that deploy it mainly to displace employees will see only short-term productivity gains."
Options 3 and 4 – These are just lines picked from the passage. These don't answer the question. These types of options which are quoted 'out of context' are normal traps set by question setters.

FeedBack

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Q.2

What should be the ideal relationship between an AI and human work force, according to the author?

1 **Both should supplant each other.**

2 **Both should compliment each other.**

3 **Both should supplement each other.**

4 **Both should comply with each other.**

Bookmark

Answer key/Solution

Solution:
Correct Answer : 3
Genre: Science and Technology
It's a very easy question and it actually resembles a vocabulary based question.
According to the given passage, the author stresses on the fact that the full potential of AI will be harnessed only if it works with the human force and not in isolation. Refer to- "…the technology's larger impact will be in complementing and augmenting human capabilities, not replacing them." This makes option 3 the correct answer.
Option 1 – Supplant means to replace. It is not factually supported by the passage.
Option 2 – Compliment is not the same as 'complement'. The latter has been mentioned in the passage.
Option 4 – It is out of context. There is no mention of 'comply' in the passage.

FeedBack

Directions for questions (1 to 6): The passage below is accompanied by a set of six questions. Choose the best answer to each question.

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Q.3

With which of the following would the author most likely agree?

1 **AI systems cannot be made to work with the human work force as they will always surpass human intelligence.**

2 **AI didn't create the humans but it is the other way round and the former can be trained to work with humans.**

3 **The use of AI will benefit a company in the long run.**

4 **The only duty of the humans is to learn how to use AI accurately and without any hindrance.**

Bookmark

Answer key/Solution

Solution:
Correct Answer : 2
Genre: Science and Technology
It is a moderate level inferential question.
Option 1 – It goes against the tone of the passage. The author emphasises the importance of mutual cooperation between AI and humans.
Option 2 – It is the correct answer. Refer to the 4th and 5th paragraph. Both the paragraphs state that machines should be trained to understand human work force.
Option 3 – It is a twisted inference. The author says that the use of AI will help the companies in the short term. It will be beneficial in the long run only if human workers and AI work together. Hence, this is not correct.
Option 4 - 'Without any hindrance' makes it incorrect as nothing has been mentioned about using AI accurately or without restriction.

FeedBack

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Q.4

Which of the following cannot be inferred from the given passage?

1 **Humans and the AI systems should learn to understand each other for better collaborative performance.**

2 **Companies where AI replaces human work force will not be able to harness the full potential of AI.**

3 **Business policies should be reinvented so that both AI and humans work together.**

4 **AI training should be given to all so that one may learn to use certain important applications.**

Bookmark

Answer key/Solution

Solution:
Correct Answer : 4
Genre: Science and Technology
It is an inference based question which is actually like a main idea question.
All other options except 4 can be derived from the passage.
Option 1 – It is the main idea or message of the passage.
Option 2 – It can be inferred from the first two paragraphs.
Option 3 – It again reiterates the main idea or message of the passage.
Option 4 - The passage does not talk about AI training which should be given to humans. Hence, it is the correct answer.

FeedBack

Directions for questions (1 to 6): The passage below is accompanied by a set of six questions. Choose the best answer to each question.

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Q.5

The central idea of the passage is to:

1 **understand and evaluate the full potential of AI so that the machines can augment the process of automation.**

2 **understand the relationship between human and AI.**

3 **understand how the full potential of AI can be harnessed.**

4 **understand the roles of humans in the age of AI and what they should do to remain relevant in the workforce.**

Bookmark

Answer key/Solution

Solution:
Correct Answer : 3
Genre: Science and Technology
It is a simple main idea question. The need is to eliminate the narrow or broad options.
The given passage states that the full potential of AI can be harnessed only if it complements the human work force. So, it answers the question how AI systems can be harnessed completely for betterment of technology and improvement of human life forms. This makes option3, the correct choice.
Option 1 – The author doesn't support complete automation. Hence, this can't be the main idea.
Option 2 – The author focuses on human workers and AI. He is restricted to the field of business and production.
Option 4 – It is out of context as the author doesn't suggest any alternative. He also says that humans will not be redundant as workers.

FeedBack

Directions for questions (1 to 6): The passage below is accompanied by a set of six questions. Choose the best answer to each question.

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Q.6

Which of the following does not depict the role of humans as far as their training of machines is concerned?

1 **Sustainable use of machines should be a priority.**

2 **When controversial results are arrived at with the help of AI, the outcomes should be monitored.**

3 **Train AI systems to understand and aid life saving apps.**

4 **Teaching AI systems to be able to understand idiomatic expressions.**

Bookmark

Answer key/Solution

Solution:
Correct Answer : 3
Genre: Science and Technology
It is, again, a factual question which requires a close reading of the text. Refer to the lines – "Machine-learning algorithms must be taught how to perform the work they're designed to do. ...AI systems must be trained how best to interact with humans."
Options 1, 2, and 4 – These are supported by the above mentioned lines.
Option 3 - The lines talk about "medical apps to detect disease" but it is not mentioned anywhere in the passage that AI systems should be made to understand the implications of any lifesaving app. Hence, it is the correct answer.

FeedBack

Directions for questions (7 to 12): The passage below is accompanied by a set of six questions. Choose the best answer to each question.

As soon as you step into a top position at a company that needs to significantly improve the way it operates, there's pressure to get off to a quick start.

Yet the best way to succeed, paradoxically, is to slow things down.

Forces pushing in the other direction — toward hyper speed — are powerful, of course. You must prove you are the right leader by getting the organization to deliver better results, and soon. That's why you were brought in.

So, you set out for early wins in what seem like obvious areas to fix — on the cost side, perhaps the speed of processes within production, and on the revenue side, the size of the sales force.

But rushing toward early wins, even in areas that seem uncontroversial, can be unexpectedly hazardous. That's because when a new leader takes hold, changes aren't just about efficiency or revenue; they are also about people's feelings of vulnerability and uncertainty about what the changes will mean for them.

No matter how sophisticated and mature the new leader may be, rushing too quickly toward early wins can deprive the new leader of the insight needed to understand the culture and build relationships. As a consequence, quick wins may soon be undone, or they may beget new leadership problems.

Deliberately slowing down allows you to clarify what the people around you want most, the effects of your behavior, sources of resistance, and the ramifications of your decisions. The result: You will have more control over the pace of your transition to new leadership responsibilities and the company's transition to its new era.

In Thinking, Fast and Slow, the psychologist Daniel Kahneman explores the intricacies of judgment and argues that different tempos of decision making are better for different challenges. Fight/flight/freeze decisions must be intuitive and quick. But actions that are complex and require careful judgment must be made more slowly and deliberately.

In order to build coalitions, a new leader must recognize that a handoff at the top is unsettling for everyone. Employees wonder how expectations of them will change, and executives worry about the effect on their power bases. It takes months for a new leader to allay concerns and win loyalty — a reality even for a leader who is promoted from within and is therefore a known quantity.

Subordinates will follow a leader they can count on. Decisiveness is an important factor, but more important is wise judgment in the face of complex, important challenges. Followers want the leader to listen to their ideas and merge them with her own, and they want to see her handle difficult problems carefully. This requires controlling the action and slowing down the pace.

Q.7

Which of the following qualities can make one a good leader?

1 ○ **Being focused on quick wins**

2 ○ **Being intuitive and quick in decision making**

3 ○ **Being a sophisticated and mature yet people's person**

4 **Being more in control of the pace of decision making**

Bookmark

Answer key/Solution

Solution:
Correct Answer : 4
Genre: Management
This is a very simple passage with some really easy questions.
This is a factual question. However, it requires a close understanding of the main idea of the passage.
Option 1 – It is the exact opposite of what the passage says.
Option 2 – It is partially correct as the author mentions this with respect to one type of situation. The complex situation requires a slower kind of decision making.
Option 3 – This is both vague and irrelevant.
Option 4 –It best captures the author's argument in the first five paragraphs. He talks about a successful leader being more control of the pace of the decision making.

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Q.8

Which of the following situations requires a slow and a deliberate judgement?

1 **Winning loyalty and respect of one's superiors and subordinates**

2 **Evaluation of multifarious problems**

3 **Assessment of simple yet dichotomous decisions**

4 Delivering productive results in a timely fashion

Solution:
Correct Answer : 2
Genre: Management
This is an easy factual question.
Refer to- “But actions that are complex and require careful judgment must be made more slowly and deliberately.” In option 2, multifarious means complex. Hence it is the correct answer.

FeedBack

Bookmark

Answer key/Solution

Directions for questions (7 to 12): The passage below is accompanied by a set of six questions. Choose the best answer to each question.

As soon as you step into a top position at a company that needs to significantly improve the way it operates, there's pressure to get off to a quick start.

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Q.9

As per the passage, a new leader should:

1 **focus on fulfilling the expectations of the disgruntled employees.**

2 **try to assuage the dissatisfaction that is an inevitable outcome of any change in power.**

3 **assuage the insecurities of senior employees who may suddenly feel irrelevant.**

4 **harness a patient attitude in order to earn loyalty and build coalition.**

Bookmark

Answer key/Solution

Solution:
Correct Answer : 4
Genre: Management
This is a fact based question which also requires some skills of inference.
Refer to- "It takes months for a new leader to allay concerns and win loyalty — a reality even for a leader who is promoted from within and is therefore a known quantity."
Option 1 – This is irrelevant. The author talks about a leader's ability to build relationship. But this option talks about an extreme situation where blind support by the leader will be counterproductive.
Option 2 – 'Inevitable...any' make this an extreme and logically fallacious conclusion.
Option 3- This is wrong too. Refer to the logic given for option 1.
Option 4 – This is the correct answer.

FeedBack

Directions for questions (7 to 12): The passage below is accompanied by a set of six questions. Choose the best answer to each question.

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In order to build coalitions, a new leader must recognize that a handoff at the top is unsettling for everyone. Employees wonder how expectations of them will change, and executives worry about the effect on their power bases. It takes months for a new leader to allay concerns and win loyalty — a reality even for a leader who is promoted from within and is therefore a known quantity.

Subordinates will follow a leader they can count on. Decisiveness is an important factor, but more important is wise judgment in the face of complex, important challenges. Followers want the leader to listen to their ideas and merge them with her own, and they want to see her handle difficult problems carefully. This requires controlling the action and slowing down the pace.

Q.10

What does the author mean by the sentence - "Yet the best way to succeed, paradoxically, is to slow things down"?

1 ○ **For a new leader, a slow and deliberate approach ensures more sustainable and long term gains.**

2 ○ **For a new leader, it is of paramount importance to slow down in order to fight powerful forces pushing in the other direction — toward hyper speed.**

3 **For a new leader, a slow and steady approach brings in more dividends than being sophisticated and mature.**

4 **For a new leader, being slow and calculating results in better coalition with employees who change their expectations.**

Bookmark

Answer key/Solution

Solution:
Correct Answer : 1
Genre: Management
It is a factual question. However, one needs to keep in mind the main idea of the passage too.
Refer to the last paragraph-". Followers want the leader to listen to their ideas and merge them with her own, and they want to see her handle difficult problems carefully." This makes 1, the standout option.
Option 2 - It is too literal and too extreme.
Option 3 – There is no comparison between one's decision making speed and personality traits.
Option 4 – 'Calculating' makes this incorrect.

FeedBack

Directions for questions (7 to 12): The passage below is accompanied by a set of six questions. Choose the best answer to each question.

As soon as you step into a top position at a company that needs to significantly improve the way it operates, there's pressure to get off to a quick start.

Yet the best way to succeed, paradoxically, is to slow things down.

Forces pushing in the other direction — toward hyper speed — are powerful, of course. You must prove you are the right leader by getting the organization to deliver better results, and soon. That's why you were brought in.

So, you set out for early wins in what seem like obvious areas to fix — on the cost side, perhaps the speed of processes within production, and on the revenue side, the size of the sales force.

But rushing toward early wins, even in areas that seem uncontroversial, can be unexpectedly hazardous. That's because when a new leader takes hold, changes aren't just about efficiency or revenue; they are also about people's feelings of vulnerability and uncertainty about what the changes will mean for them.

No matter how sophisticated and mature the new leader may be, rushing too quickly toward early wins can deprive the new leader of the insight needed to understand the culture and build relationships. As a consequence, quick wins may soon be undone, or they may beget new leadership problems.

Deliberately slowing down allows you to clarify what the people around you want most, the effects of your behavior, sources of resistance, and the ramifications of your decisions. The result: You will have more control over the pace of your transition to new leadership responsibilities and the company's transition to its new era.

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Q.11

The article primarily focuses on:

1 **evaluation of employee-leader relationship.**

2 **analysing the requirements of effective leadership.**

3 **highlighting the perils of being quick and fast as a leader.**

4 **exploring the potential of new and slow leadership.**

Bookmark

Answer key/Solution

Solution:
Correct Answer : 2
Genre: Management
It is a moderate level main idea question. One needs to eliminate options in order to arrive at the right answer. Also, one needs to understand the tone of the author.
Refer to the opening sentence of the paragraph. As soon as you step into a top position at a company that needs to significantly improve the way it operates, there's pressure to get off to a quick start. The passage entirely focuses on the skills required by a new leader to become successful. So, option 2 is the correct answer.
Option 1 – It is too narrow. 'Evaluation' is also not the right tone.
Option 3 – It is too narrow. It also suggests a negative tone for the passage. The author is very neutral in his stance.
Option 4 – It is too narrow.

FeedBack

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Q.12

Which of the following best defines the word ramification?

1 ○ **An expected consequence of an event**

2 ○ **Arriving at a disastrous consequence from an underestimated action**

3 ○ **A complex or unwelcome consequence of an action or event**

4 An easy solution to a complex problem

Solution:
Correct Answer : 3
Genre: Management
Option 3 defines the term 'ramification' correctly. It is a vocabulary based question. Hence, there is no need for elimination.

FeedBack

Bookmark

Answer key/Solution

Directions for questions (13 to18): The passage below is accompanied by a set of six questions. Choose the best answer to each question.

In asking about the origins of human language, we first have to make clear what the question is. The question is not how languages gradually developed over time into the languages of the world today. Rather, it is how the human species developed over time so that we — and not our closest relatives, the chimpanzees and bonobos — became capable of using language.

And what an amazing development this was! No other natural communication system is like human language. Human language can express thoughts on an unlimited number of topics (the weather, the war, the past, the future, mathematics, gossip, fairy tales, how to fix the sink...). It can be used not just to convey information, but to solicit information (questions) and to give orders. Unlike any other animal communication system, it contains an expression for negation — what is not the case. Every human language has a vocabulary of tens of thousands of words, built up from several dozen speech sounds. Speakers can build an unlimited number of phrases and sentences out of words plus a smallish collection of prefixes and suffixes, and the meanings of sentences are built from the meanings of the individual words. What is still more remarkable is that every normal child learns the whole system from hearing others use it.

Animal communication systems, in contrast, typically have at most a few dozen distinct calls, and they are used only to communicate immediate issues such as food, danger, threat, or reconciliation. Many of the sorts of meanings conveyed by chimpanzee communication have counterparts in human 'body language'. For animals that use combinations of calls (such as some songbirds and some whales), the meanings of the combinations are not made up of the meanings of the parts (though there are many species that have not been studied yet). And the attempts to teach apes some version of human language, while fascinating, have produced only rudimentary results. So the properties of human language are unique in the natural world.

How did we get from there to here? All present-day languages, including those of hunter-gatherer cultures, have lots of words, can be used to talk about anything under the sun, and can express negation. As far back as we have written records of human language — 5000 years or so — things look basically the same. Languages change gradually over time, sometimes due to changes in culture and fashion, sometimes in response to contact with other languages. But the basic architecture and expressive power of language stays the same.

The question, then, is how the properties of human language got their start. Obviously, it couldn't have been a bunch of cavemen sitting around and deciding to make up a language, since in order to do so, they would have had to have a language to start with! Intuitively, one might speculate that hominids (human ancestors) started by grunting or hooting or crying out, and 'gradually' this 'somehow' developed into the sort of language we have today. (Such speculations were so rampant 150 years ago that in 1866 the

French Academy banned papers on the origins of language!) The problem is in the 'gradually' and the 'somehow'. Chimps grunt and hoot and cry out, too. What happened to humans in the 6 million years or so since the hominid and chimpanzee lines diverged, and when and how did hominid communication begin to have the properties of modern language?

Of course, many other properties besides language differentiate humans from chimpanzees: lower extremities suitable for upright walking and running, opposable thumbs, lack of body hair, weaker muscles, smaller teeth — and larger brains. According to current thinking, the changes crucial for language were not just in the size of the brain, but in its character: the kinds of tasks it is suited to do — as it were, the 'software' it comes furnished with. So the question of the origin of language rests on the differences between human and chimpanzee brains, when these differences came into being, and under what evolutionary pressures.

Q.13

Which of the following is not a point of distinction between human language and other natural communication systems?

1 **The purpose of human language goes beyond just conveying of information.**

2 **An endless number of semantic units can be formed by properly combining basic meaning–conveying roots.**

3 **The range of vocabulary in human languages is indefinite.**

4 **Human language can be used to convey thoughts on a countless number of topics.**

Solution:
Correct Answer : 3
Genre: Linguistics
This is a tricky factual question. The passage, too, is slightly difficult to read. The options are very close.
Option 3 – It is factually inaccurate. There is a line in the passage which says that the vocabulary of every human language comprises tens of thousands of words. This does not mean that the range of vocabulary in human languages is indefinite.
Option 2 – It might look confusing but a closer look will tell us that this option is nothing but a paraphrase of this sentence – "Speakers can build an unlimited number of phrases and sentences out of words plus a smallish collection of prefixes and suffixes..." Hence, it is a point of distinction.
Options 1 and 4 – These are directly mentioned in the passage.

Bookmark

Answer key/Solution

FeedBack

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Q.14

Which of the following is the flaw in the speculation that human language eventually developed from the grunting and hooting of early hominids?

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1 ○ **It oversimplifies the process of human language development.**

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2 ○ **It posits that the key is the difference in the evolutionary process between humans and apes.**

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3 ○ **It assumes that early men were different from apes.**

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4 It does not acknowledge the role played by environmental factors.

Bookmark

Answer key/Solution

Solution:
Correct Answer : 1
Genre: Linguistics
It is a question which requires the application of inferential reasoning.
The answer to this question lies in the last part of the passage. The author tells us that the problem with the speculation is that it does not explain how 'somehow' and 'gradually' the hooting and grunting evolved into human language. He even says that hooting and grunting are displayed by apes. The difference is how the human brain is wired differently and evolved in a more comprehensive manner than did the brains of apes. It all this is not focused on, we are oversimplifying the process.
Option 2 – It is not a flaw of the speculation, but the alternative and the more feasible explanation of how human language would have developed uniquely in humans.
Option 3- The author argues against this speculation by citing the example of apes, who also hoot and grunt but language never developed in them. The statement that humans and apes are different is an argument used by the author to disprove this speculation. So, this statement is not an assumption in the speculation.
Option 4 – It is out of context.

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Q.15

According to the author, which of the following would best capture the real essence of the phrase 'the origins of language'?

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1 ○ **The study of how language has evolved from the rudiments into the complex system that we know it to be**

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2 ○ **The study of how language has evolved as an ability unique to humans beings**

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3 ○ **The study of how body language is common to both apes and humans , and language is unique to humans**

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4 ○ **The study of the difference in the cerebral software of humans and apes**

Bookmark

Answer key/Solution

Solution:
Correct Answer : 2
Genre: Linguistics
This is a tricky question. It requires both factual interpretation of the text and logical inference from the text.
The author mentions (right at the beginning of the passage) that the moot point in studying the origins of language is not how language has evolved over the years but how it is inextricably linked to the evolution of mankind itself. He goes on to explain how the key is that language developed uniquely in human beings and not in apes. This makes option 2 the answer.
The only other option that looks slightly close is 4. But this can also be eliminated as the difference in the two processes of evolution is not environmental, but rather that mankind seems to have been uniquely equipped to develop language.

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Q.16

Which of the following can be inferred from the fact that in 1886, the French Academy banned papers dealing with the origins of language?

1 **All the papers floating around that time were speculative in nature.**

2 **The Academy was not receptive to the idea of speculation.**

3 **The papers of that age were not as reasonable as the ones of the present time.**

4 **The Academy probably got fed up with the glut of speculative papers at that time.**

Bookmark

Answer key/Solution

Solution:
Correct Answer : 4
Genre: Linguistics
This is a difficult inference based question.
The passage says, "Such speculations were so rampant 150 years ago that in 1866 the French Academy banned papers on the origins of language!" This means that the most probable reason behind the ban is that the Academy did not want to deal with such speculations anymore. This makes 4 the most probable answer.
Option 1 is unlikely as the statement from the passage says that such speculation was rampant. What is true for a great number or majority may not be true for all.
Option 2 is slightly far-fetched. The Academy might have been put off by the rampant nature of speculations but the expression 'not receptive' makes this option too extreme.
Option 3 can be eliminated as there can be no comparisons between now and then as we do not have information about papers nowadays.

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Q.17

Which of the following comes closest to a topic that cannot be expressed in animal communication systems?

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1 An alert for an impending attack by a predator/ intruder

2 Indication of hunger

3 Expressing the degree of pain that one is undergoing

4 Expression of fear

Bookmark

Answer key/Solution

Solution:
Correct Answer : 3
Genre: Linguistics
This is a further application question. However, it is very easy.
Animal communication systems can convey only basic, immediate ideas.
Expression of pain may fall under this category but to indicate the degree of the pain would involve a more complex system of semantics. The other options are relevant to the context.

FeedBack

Directions for questions (13 to18): The passage below is accompanied by a set of six questions. Choose the best answer to each question.

In asking about the origins of human language, we first have to make clear what the question is. The question is not how languages gradually developed over time into the languages of the world today. Rather, it is how the human species developed over time so that we — and not our closest relatives, the chimpanzees and bonobos — became capable of using language.

And what an amazing development this was! No other natural communication system is like human language. Human language can express thoughts on an unlimited number of topics (the weather, the war, the past, the future, mathematics, gossip, fairy tales, how to fix the sink...). It can be used not just to convey information, but to solicit information (questions) and to give orders. Unlike any other animal communication system, it contains an expression for negation — what is not the case. Every human language has a vocabulary of tens of thousands of words, built up from several dozen speech sounds. Speakers can build an unlimited number of phrases and sentences out of words plus a smallish collection of prefixes and suffixes, and the meanings of sentences are built from the meanings of the individual words. What is still more remarkable is that every normal child learns the whole system from hearing others use it.

Animal communication systems, in contrast, typically have at most a few dozen distinct calls, and they are used only to communicate immediate issues such as food, danger, threat, or reconciliation. Many of the sorts of meanings conveyed by chimpanzee communication have counterparts in human 'body language'. For animals that use combinations of calls (such as some songbirds and some whales), the meanings of the combinations are not made up of the meanings of the parts (though there are many species that have not been studied yet). And the attempts to teach apes some version of human language, while fascinating, have produced only rudimentary results. So the properties of human language are unique in the natural world.

How did we get from there to here? All present-day languages, including those of hunter-gatherer cultures, have lots of words, can be used to talk about anything under the sun, and can express negation. As far back as we have written records of human language — 5000 years or so — things look basically the same. Languages change gradually over time, sometimes due to changes in culture and fashion, sometimes in

response to contact with other languages. But the basic architecture and expressive power of language stays the same.

The question, then, is how the properties of human language got their start. Obviously, it couldn't have been a bunch of cavemen sitting around and deciding to make up a language, since in order to do so, they would have had to have a language to start with! Intuitively, one might speculate that hominids (human ancestors) started by grunting or hooting or crying out, and 'gradually' this 'somehow' developed into the sort of language we have today. (Such speculations were so rampant 150 years ago that in 1866 the French Academy banned papers on the origins of language!) The problem is in the 'gradually' and the 'somehow'. Chimps grunt and hoot and cry out, too. What happened to humans in the 6 million years or so since the hominid and chimpanzee lines diverged, and when and how did hominid communication begin to have the properties of modern language?

Of course, many other properties besides language differentiate humans from chimpanzees: lower extremities suitable for upright walking and running, opposable thumbs, lack of body hair, weaker muscles, smaller teeth — and larger brains. According to current thinking, the changes crucial for language were not just in the size of the brain, but in its character: the kinds of tasks it is suited to do — as it were, the 'software' it comes furnished with. So the question of the origin of language rests on the differences between human and chimpanzee brains, when these differences came into being, and under what evolutionary pressures.

Q.18

In which of the following areas does the author admit that there is some uncharted territory left?

1 **The fact that the provision to express negation is there even in hunter-gatherer languages.**

2 **The fact that in all species that use combination calls, the meaning of the whole is not made up of the constituent parts.**

3 **The fact that apes cannot progress beyond hooting/grunting and approach human language.**

4 **The fact that written records of human language has existed for around 5000 years.**

Solution:
Correct Answer : 2
Genre: Linguistics
This is a slightly tricky question. However, it is primarily fact based. Hence, it can be attempted.
The author cites the examples of 'some song-birds' and 'whales' to buttress his point that in species that use combination calls, the meaning of the combination is made up of the meanings of the constituent parts. In the same breath, he also says that research is yet to be in the case of many species. This makes option 2 the answer.
All the other options are facts that the author is sure about.

Bookmark
Answer key/Solution
FeedBack

Directions for questions (19 to 21): The passage below is accompanied by a set of three questions. Choose the best answer to each question.

The French Nobel Prize winning writer Romain Rolland said, 'Where order is injustice, disorder is the beginning of justice.'

There is disorder and conflict all over the world movements for national self-determination, struggles against land acquisition by the State, against the dispossession of indigenous people. In such a scenario, where you find different kinds of resistance to the project of the nation state, to capitalism, to the project of unjust social order, what does it mean to talk of 'conflict resolution' and 'peace'? You cannot resolve a conflict unless you remove the inequality and the injustice that underlie it. It is not a matter of getting opposing sides to sit and talk to each other-if one party is very powerful and the other is completely powerless, the conflict can be resolved only in one way. So, sometimes conflicts should not be 'resolved', but should lead to the destabilization of the old order and the establishment of a new, more just social order.

Behind the notion of a special role for women in peace and conflict resolution lies the assumption that across all other identities, 'women' have a common bond-women are mothers; women are nurturing; women want peace. But women can be combatants, they can be violent; they can also want peace, they can want to resolve conflict; just like men, they too can have a range of motivations.

Of course, it is possible in certain kinds of contexts for women to use their conventional identity to be peace activists in quite creative ways. So, for example in Sri Lanka, the political formation called The Mothers' Front that emerged between 1990 and 1993, had a huge grass-roots membership. Basically, these activists were mothers protesting the disappearance of their sons and male relatives. The 'Women in Black' in Latin America and many others too, have politically used and creatively played with this identity of motherhood.

Q.19

The author of this passage would agree with which of the following?

1 **Women, usually, prefer peace to conflict.**

2 **Mothers of all communities have a special solidarity with each other.**

3 **There is a need to preserve peace and the established order, which is why conflict resolution is important.**

4 **Women of the Mother's Front of Sri Lanka used their maternal identity in a unique way.**

Bookmark

Answer key/Solution

Solution:
Correct Answer : 4
Genre: Politics / Political Theory / Women's Studies
This is an inference based questions. This is also quite tricky.
Option 1 - Incorrect. The author categorically states this as an incorrect assumption about women.
Option 2 – Incorrect. The author doesn't talk about 'mothers of all communities'. Such generalized conclusions can't be derived.
Option 3 - Incorrect. The last sentence of the first paragraph states that resolving conflict, at times, involves destabilising the old order.
Option 4 – Correct. This is correct as the passage mentions the "creative" way in which women of the Mothers' Front used their identity.

FeedBack

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There is disorder and conflict all over the world movements for national self-determination, struggles against land acquisition by the State, against the dispossession of indigenous people. In such a scenario, where you find different kinds of resistance to the project of the nation state, to capitalism, to the project of unjust social order, what does it mean to talk of 'conflict resolution' and 'peace'? You cannot resolve a conflict unless you remove the inequality and the injustice that underlie it. It is not a matter of getting opposing sides to sit and talk to each other-if one party is very powerful and the other is completely powerless, the conflict can be resolved only in one way. So, sometimes conflicts should not be 'resolved', but should lead to the destabilization of the old order and the establishment of a new, more just social order.

Behind the notion of a special role for women in peace and conflict resolution lies the assumption that across all other identities, 'women' have a common bond-women are mothers; women are nurturing; women want peace. But women can be combatants, they can be violent; they can also want peace, they can want to resolve conflict; just like men, they too can have a range of motivations.

Of course, it is possible in certain kinds of contexts for women to use their conventional identity to be peace activists in quite creative ways. So, for example in Sri Lanka, the political formation called The Mothers' Front that emerged between 1990 and 1993, had a huge grass-roots membership. Basically, these activists were mothers protesting the disappearance of their sons and male relatives. The 'Women in Black' in Latin America and many others too, have politically used and creatively played with this identity of motherhood.

Q.20
The author quotes Romain Rolland in the beginning of the passage, in order to:

1 **support the idea that conflict-ridden communities have a strong reason to fight for peace.**

2 **assert that order may not necessarily be just and resolving conflict, at times, require destabilisation and disorder.**

3 call out State-sponsored attacks on indigenous people and the need for negotiation with all parties.

4 emphasise the importance of women's groups in conflict resolution.

Bookmark

Answer key/Solution

Solution:
Correct Answer : 2
Genre: Politics / Political Theory / Women's Studies
The author gives examples or cites researches/quotations to put forth his/her main idea. Hence, an understanding of the main idea will help answer this question.
Option 1 – This is partially correct. However, it doesn't capture the main idea of the passage.
Option 2 - The statement attributed to Romain Rolland speaks of conflict and disorder as a way of establishing peace and justice in places where the existing order, which is the norm, is unjust. In other words, it questions the practice of equating the existing order with peace. Hence, it is the correct answer.
Options 3 and 4 – These are irrelevant.

FeedBack

Directions for questions (19 to 21): The passage below is accompanied by a set of three questions. Choose the best answer to each question.

The French Nobel Prize winning writer Romain Rolland said, 'Where order is injustice, disorder is the beginning of justice.'

There is disorder and conflict all over the world movements for national self-determination, struggles against land acquisition by the State, against the dispossession of indigenous people. In such a scenario, where you find different kinds of resistance to the project of the nation state, to capitalism, to the project of unjust social order, what does it mean to talk of 'conflict resolution' and 'peace'? You cannot resolve a conflict unless you remove the inequality and the injustice that underlie it. It is not a matter of getting opposing sides to sit and talk to each other-if one party is very powerful and the other is completely powerless, the conflict can be resolved only in one way. So, sometimes conflicts should not be 'resolved', but should lead to the destabilization of the old order and the establishment of a new, more just social order.

Behind the notion of a special role for women in peace and conflict resolution lies the assumption that across all other identities, 'women' have a common bond-women are mothers; women are nurturing; women want peace. But women can be combatants, they can be violent; they can also want peace, they can want to resolve conflict; just like men, they too can have a range of motivations.

Of course, it is possible in certain kinds of contexts for women to use their conventional identity to be peace activists in quite creative ways. So, for example in Sri Lanka, the political formation called The Mothers' Front that emerged between 1990 and 1993, had a huge grass-roots membership. Basically, these activists were mothers protesting the disappearance of their sons and male relatives. The 'Women in Black' in Latin America and many others too, have politically used and creatively played with this identity of motherhood.

Q.21
The main idea of the passage can be summed up as:

1 the idea that women's assumed identity based bonds help in resolving conflicts is not without merit.

2 the assumption that women share some kind of special bonds in general is problematic.

3 the idea that conflicts need resolution all the time is problematic.

4 the assumption that women are always more effective in resolving problems by virtue of their conventional identities is not without merit.

Bookmark

Answer key/Solution

Solution:
Correct Answer : 1
Genre: Politics / Political Theory / Women's Studies
This is a main idea question that focuses on the last paragraph.
The author starts the passage by attacking the stereotypical identities conferred upon women in terms of their affinity for peace. However, in the last paragraph, the author does talk about some usage of this traditional belief. So, option 1 is the correct answer.
Options 2 and 3 – Both are wrong as they don't match the tone of the author.
Option 4 – 'Always' makes it an extreme option. The author cites only a few examples.

FeedBack

Directions for questions (22 to 24): The passage below is accompanied by a set of three questions. Choose the best answer to each question.

The invading army reached the outskirts of Rome, which had been left totally undefended. In 410 C.E., the Visigoths, led by Alaric, breached the walls of Rome and sacked the capital of the Roman Empire.

The Visigoths looted, burned, and pillaged their way through the city, leaving a wake of destruction wherever they went. The plundering continued for three days. For the first time in nearly a millennium, the city of Rome was in the hands of someone other than the Romans. This was the first time that the city of Rome was sacked, but by no means the last.

One of the many factors that contributed to the fall of the Roman Empire was the rise of a new religion, Christianity. The Christian religion, which was monotheistic ran counter to the traditional Roman religion, which was polytheistic (many gods). At different times, the Romans persecuted the Christians because of their beliefs, which were popular among the poor.

In 313 C.E., Roman emperor Constantine the Great ended all persecution and declared toleration for Christianity. Later that century, Christianity became the official state religion of the Empire. This drastic change in policy spread this relatively new religion to every corner of the Empire.

By approving Christianity, the Roman state directly undermined its religious traditions. Finally, by this time, Romans considered their emperor a god. But the Christian belief in one god — who was not the emperor — weakened the authority and credibility of the emperor.

Constantine enacted another change that helped accelerate the fall of the Roman Empire. In 330 C.E., he split the empire into two parts: the western half centred in Rome and the eastern half centred in Constantinople, a city he named after himself.

Q.22
Which of the following contributed, though indirectly, to the fall of the Roman Empire?

1 The brutality of the invading Visigoths, who left a trail of destruction wherever they went.

2 The Emperor's inclination to self-aggrandizement in naming a part of the city after himself.

3 The Emperor's display of religious tolerance towards Christianity, which eventually backfired.

4 The unparalleled strength of the new religion, Christianity.

Bookmark

Answer key/Solution

Solution:
Correct Answer : 3
Genre: History
It is a fact based question but the answer is not too direct.
One of the factors mentioned in the passage is the rise and subsequent popularity of the new religion, Christianity. This eventually led to the undermining of the Emperor's authority and credibility. This whole chain of events was triggered by the Emperor's declaration of tolerance for Christianity. This makes 3 the best answer.
Option 4 is a bit extreme .The popularity of Christianity did contribute to the fall of the Empire but to say that Christianity had 'unparalleled strength' is far-fetched.
Option 2 is inappropriate. The division of the Empire into two parts had a role but the act of naming it could have done virtually nothing.

FeedBack

Directions for questions (22 to 24): The passage below is accompanied by a set of three questions. Choose the best answer to each question.

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By approving Christianity, the Roman state directly undermined its religious traditions. Finally, by this time, Romans considered their emperor a god. But the Christian belief in one god — who was not the emperor — weakened the authority and credibility of the emperor.

Constantine enacted another change that helped accelerate the fall of the Roman Empire. In 330 C.E., he split the empire into two parts: the western half centred in Rome and the eastern half centred in Constantinople, a city he named after himself.

Q.23

Which of the following is true about the invading Visigoths?

1 **They were favourably inclined towards the new religion Christianity.**

2 **They left a wake of destruction wherever they went.**

3 **Their might could not be matched by that of the defending Romans.**

4 **Their incursion into Rome was met with no challenge.**

Solution:
Correct Answer : 4
Genre: History
This is a fact-inference question as it requires a close reading of the text.
Option 4 - This option is evident in the first sentence of the passage, "The invading army reached the outskirts of Rome, which had been left totally undefended."
Option 2 – It looks close. The Visigoth's leaving a wake of destruction is with reference to the specific incident of their looting the city of Rome. In short, they left a wake of destruction wherever they went in Rome. It would be incorrect to generalize it.
Options 1 and 3 – These are factually incorrect.

Bookmark
Answer key/Solution
FeedBack

Directions for questions (22 to 24): The passage below is accompanied by a set of three questions. Choose the best answer to each question.

The invading army reached the outskirts of Rome, which had been left totally undefended. In 410 C.E., the Visigoths, led by Alaric, breached the walls of Rome and sacked the capital of the Roman Empire.

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By approving Christianity, the Roman state directly undermined its religious traditions. Finally, by this time, Romans considered their emperor a god. But the Christian belief in one god — who was not the emperor — weakened the authority and credibility of the emperor.

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Q.24

Which of the following best captures the essence of the passage?

1 **The role of the visigoths in the fall of the Roman Empire**

2 **The fall of the Roman Empire**

3 **The rise of Christianity and its contribution to the fall of the Roman Empire**

4 **What precipitated the fall of the Roman Empire?**

Solution:
Correct Answer : 4
Genre: History
This is a main idea question. It is easy.
Option 1 is a part of the passage. The Visigoths ransacked Rome, but this is just a part and not the whole of the passage. This is too narrow as an option.
Option 2 is too narrow. It focuses only on the fall of the Roman Empire, not the factors that contributed to it.
As far as option 3 is concerned, the popularity of Christianity is only one of the factors that led to the falloff the Roman Empire.
The whole passage is an answer to the question posed in option 4. This makes it the answer.

Bookmark

Answer key/Solution

FeedBack

Directions for question 25: The passage given below is followed by four summaries. Choose the option that best captures the author's position.

Q.25

Feelings are not much cop, either. Emotions are probably generated when we notice changes in our bodily state (this was William James's insight in the 19th century), rather than bubbling up from some subconscious to teach us a lesson. Memory is a highly fallible re-creation rather than a retrieval of information, and political affiliations can be influenced by cognitive biases. People commonly report, meanwhile, that a solution to some puzzle pops into their head after they have stopped working on it and taken a walk or a shower. But Chater insists that there is never any "unconscious processing" working on some problem while we do something else. In his view, the brain can attend to only one thing at a time.

1. According to Chater, our understanding of the merits of feelings, emotions, brain functions are not entirely correct.
2. According to Chater, we have unwittingly attached far more importance to the human mind than it actually merits.
3. According to Chater, most tasks that have been attributed to the mind are nothing but bodily functions.
4. According to Chater, people tend to over complicate the workings of the human mind and emotions by calling these unconscious processes.

Solution:
Correct Answer : 1
All the options are very close. Hence, one needs to apply the method of elimination to answer this question.
The passage one step at a time removes certain functions which have been traditionally associated with the mind. It states that emotions are bodily responses, memories are not concrete remembrances, and that the brain cannot multitask. Thus, as it stands according to the passage we have attached too much importance to the mind.
Option 1 – It correctly summarises the given paragraph.
Option 2 – It is too negative. The author doesn't take such an unfavourable view towards the human mind.
Option 3 – It is factually incorrect.
Option 4 – It goes beyond the scope of the paragraph.

Bookmark

Answer key/Solution

FeedBack

Directions for question 26: The passage given below is followed by four summaries. Choose the option that best captures the author's position.

Q.26

In every relationship, there are bound to be challenges with child upbringing, mostly due to the uniqueness of each partner of the relationship. Each partner in a relationship comes mostly from a different family background, values, character, different strengths and weaknesses, and many other things that may make someone different from the other. If there can be challenges with child upbringing in relationships where the partners are from the same culture, multicultural relationships are bound to have even more challenges.

1. Intercultural relationship is complicated because each partner comes equipped with a different set of rules and makes child upbringing challenging.
2. Child upbringing is a challenge in every relationship as parents belonging to even the same culture come from different family backgrounds.
3. Culture delineates background and values and makes upbringing of children difficult in every marriage.
4. Be it a multicultural marriage or a marriage within a same culture, upbringing of children is a complicated task as both partners have different family backgrounds.

Solution:
Correct Answer : 2
The options are not very close. Hence, we need to watch out for traps.
The paragraph talks about 'partnership' and not 'marriage'. A relationship may or may not turn into a marriage. Hence, options 3 and 4 are eliminated.
Option 1- It is incorrect as it specifically talks about intercultural relationship.
Option 2 – It is the correct answer.

FeedBack

Bookmark

Answer key/Solution

Directions for question 27: The passage given below is followed by four summaries. Choose the option that best captures the author's position.

Q.27

Nicholas Cook puts it well: "Of all the works in the mainstream repertory of Western music, the Ninth Symphony seems the most like a construction of mirrors, reflecting and refracting the values, hopes, and fears of those who seek to understand and explain it … From its first performance [in Vienna in 1824] up to the present day, the Ninth Symphony has inspired diametrically opposed interpretations". Those interpretations include those earlier listeners and commentators who heard and saw in it evidence that Beethoven had lost it compositionally speaking; that the piece, with its incomprehensible scale, nearly impossible technical demands, and above all its crazily utopian humanist idealism in the choral setting of Friedrich Schiller's Ode to Joy in its last movement, amounted to madness.

1. The act of interpreting the Ninth Symphony is futile according to the critics since it involves the societal position of the interpreter and thus is unstable.
2. The Ninth Symphony has polarised Western music critics ever since its conception.
3. Interpreting the Ninth Symphony according to critics is an exercise defined by the interpreter's subjective experiences.
4. Utopian ideals, according to critics' contemporary to Beethoven, are more often than not interpreted as ideals harboured by mad people.

Solution:
Correct Answer : 3
In the given passage it is mentioned that, 'the Ninth Symphony seems the most like a construction of mirrors, reflecting and refracting the values, hopes, and fears of those who seek to understand and explain it' Later it also mentions that the resultant interpretations and reactions to the symphony always varies. Some critics even dismissed it as sheer madness. The symphony since it acts as a mirror produces the most subjective of interpretations. Option 3 is, thus, the correct summary.
Option 1 – It has a negative tone. It reads as an extreme conclusion.
Option 2 – It is out of context as it also about 'polarisation' which is not mentioned in the paragraph.
Option 4 – This is a totally twisted option. It distorts a specific idea of the paragraph. It also doesn't mention the main idea of the paragraph.

Bookmark

Answer key/Solution

FeedBack

Directions for question 28: The five sentences (labelled 1, 2, 3, 4, 5) given in this question, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a number. Decide on the proper order for the sentences and key in this sequence of five numbers as your answer.

Q.28

1. Legacies contribute a huge sum, around £1.5bn a year, to charities but only 13% of wills contain charitable bequests compared with 60% of the UK population who say they donate to charity.
2. Many charities would grind to a halt, or be severely affected, without legacy income.
3. "But those legacies come from just 2,500 people a year, which is a tiny proportion of our total support," said RNLI fundraising and marketing director, David Brann.
4. Legacy fundraising is an increasingly important area for many charities but how should organisations raise awareness about this sensitive issue among their supporters?
5. Lifeboat charity RNLI, for example, depends on bequests for two-thirds of its voluntary income.

Solution:
Correct Answer : 41253
4 is the best opening line. It mentions 'legacy fundraising' which is the main point of the paragraph.
A very obvious mandatory pair is 5 and 3. 'Those legacies' and 'RNLI' in 3 refer to the data given in 5.
1 is an explanation of the issue raised in 4. Hence, 4 and 1 become a pair.
2 has to come before 5 and 3. It introduces the consequence of slashing these funds for charities. It can't come before 4. So, 41253 is the correct sequence.

Bookmark

Answer key/Solution

FeedBack

Directions for question 29: The five sentences (labelled 1, 2, 3, 4, 5) given in this question, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a number. Decide on the proper order for the sentences and key in this sequence of five numbers as your answer.

Q.29

1. From just a handful of marathons a few years ago, the country hosted more than 500 last year.
2. As elsewhere in the world, the normalising of 26.2 miles seems to have driven a desire for some runners to push their limits further.
3. The explosion in road running in China has been well documented.
4. In 2015, Japan and the US recorded the highest number of marathon finishers at just over half a million each; if China hasn't already overtaken this number, then it seems certain to do so soon.
5. Such is the level of demand that counterfeit race numbers are a real problem for many Chinese marathons.

Bookmark

Answer key/Solution

Solution:
Correct Answer : 31452
The paragraph even in a jumbled form talks about China and its fascination with running marathons. 3 is the opening sentence as it talks about how the phenomenon is well documented.
1 provides data to support the 'explosion' mentioned in 3. Hence, 31 is a mandatory pair.
4 shows a future scenario or a hypothetical scenario. It adds to the data given in 1. Hence, 314 becomes a sequence.
5 introduces a slightly negative tone. It talks about a negative consequence of the 'explosion'. 2 gives data to support the claim made in 5. Hence, 31452 is the correct sequence.

FeedBack

Directions for question 30: The five sentences (labelled 1, 2, 3, 4, 5) given in this question, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a number. Decide on the proper order for the sentences and key in this sequence of five numbers as your answer.

Q.30

1. It, moreover, looks at the world through a core and periphery prism; it doesn't believe in nation states, but only in a perpetually expanding Caliphate.
2. This unique positioning is the key reason it managed to attract more foreign fighters than any other jihadist group.
3. The rest is periphery from where it will attract fighters and resources to enrich the core and expand it beyond the boundaries "created by men".
4. The territories which the Caliph has direct control over make up the core of the world system, according to ISIS.
5. ISIS used both asymmetric and conventional warfare tactics in the battlefield.

Bookmark

Answer key/Solution

Solution:
Correct Answer : 52143
Clue words for the paragraph – 'Moreover' in 1. 'This unique positioning' in 2. 'The rest in 3'.
5 is the opening sentence. 2 makes a mandatory pair with 5. 1 adds to 2.
4 and 3 are mandatory pairs.

FeedBack

Directions for question 31: The five sentences (labelled 1, 2, 3, 4, 5) given in this question, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a number. Decide on the proper order for the sentences and key in this sequence of five numbers as your answer.

Q.31

1. The Partition was an unwanted addition to an already full plate of immense problems.
2. One of the biggest problems was that of food, or the lack thereof.
3. In his maiden budget speech, Chetty noted that India's "food position has continued to cause grave anxiety both to the Provincial Governments and the Central Government".
4. The Bengal famine of 1943, which claimed three million lives, was still fresh in memory.
5. Most of India's 350 million people then lived in staggering poverty.

Solution:
Correct Answer : 15243
1 has to be the opening sentence. It is the broadest sentence in the entire paragraph.
'Then' in 5 refers to 1. 2 adds to the theme of poverty being the main problem. Poverty is explained by lack of food. 4 is the example of 2. 3 adds to the government's stance on the issue. It will come at the end.

Bookmark

Answer key/Solution

FeedBack

Directions for question 32: Five sentences related to a topic are given below. Four of them can be put together to form a meaningful and coherent short paragraph. Identify the odd one out.

Q.32

1. Still, some local number-crunching: 15 Indian troupes came to Calcutta, which sounds good, except that on seven evenings different productions occupied two venues, so that no theatre lover could actually see more than half the shows.
2. The logistics and finances involved boggle the mind, begging investigation at a later date.
3. Their psycho-physical intensity convinced me they were dancers, when in fact Maisnam had galvanized them perfectly, supported by Debarati Majumdar's soundtrack.
4. Over two months, around 400 Indian groups selected for the Eighth International Theatre Olympics are crisscrossing the country, performing in 17 cities.
5. For now, let us applaud the National School of Drama for planning this stupendous cornucopia - on paper.

Solution:
Correct Answer : 3
The given paragraph if arranged logically talks about 400 Indian groups taking part in International Theatre Olympics. Other than sentence all the other sentences talk about the event which was held across 17 cities. Sentence 3 is a 1st person narrative while the other sentences are in 3rd person.

Bookmark

Answer key/Solution

FeedBack

Directions for question 33: Five sentences related to a topic are given below. Four of them can be put together to form a meaningful and coherent short paragraph. Identify the odd one out.

Q.33

1. That date is commemorated as World Tuberculosis Day, and the programmes arranged by the World Health Organization around the day even in 2018 indicate that the biggest killer among infectious diseases, especially in its recent multi-drug resistant form, is yet to be controlled.
2. Perhaps it is handy among diseases, for where would plots or feelings be without sickness?
3. The death of John Keats in 1821 when he was a little over 25 years of age left the world wondering how far he would have taken English poetry had he not been struck by consumption.
4. Yet consumption has been traditionally associated with the romantic and the creative.
5. In 1882, Robert Koch announced on March 24 that he had discovered the bacterium that causes tuberculosis - or consumption

Solution:
Correct Answer : 2
Other than sentence 2 all other sentences if arranged sequentially talks about Tuberculosis and how it is still affecting lives of many. People like John Keats lost his life to this disease creating a void in the world of poetry. Sentence 2 may seem to talk about the same issue but it cannot be related to the context of other four sentences.

FeedBack

Bookmark

Answer key/Solution

Directions for question 34: Five sentences related to a topic are given below. Four of them can be put together to form a meaningful and coherent short paragraph. Identify the odd one out.

Q.34

1. Despite an overall increase in provision of tap water, the study - the State of the World's Water 2018 - charts the gaps within and between nations.
2. While recent headlines have focused on the drought in Cape Town, the NGO WaterAid, which published the report on Wednesday, noted that communities in many other regions have long been used to queues and limited supplies.
3. The stress on the South Pole and erratic climate changes has exacerbated the process terribly and the NGO fears that the worse is yet to come.
4. Water inequality is increasing in the world's most environmentally stressed nations, warn a report that shows more than 800 million people need to travel for 30 minutes to access safe supplies.
5. Poor communities face competition over aquifers and rivers with agriculture and factories producing goods for wealthier consumers.

Solution:
Correct Answer : 3
4152 can be arranged into a meaningful passage. 3 is the odd one out here because, it talks about the South Pole. The mention of an NGO may seem confusing, but it does not expand on the name or function of the NGO. In sentence 2 the NGO is named and it published the report.

FeedBack

Bookmark

Answer key/Solution

Sec 2

Directions for questions 35 to 38: Answer the questions on the basis of the information given below.

Six TV shows, TR, CPS, SD, PPK, DC and KSS are to be aired in some order on the same channel from 8 p.m. to 11:20 p.m. with the first show starting at exactly 8 p.m. and the last show ending at exactly 11:20 p.m. The total length (in minutes) of any of these shows is an integral multiple of 5 and no two shows are of same length. There must be a commercial break of either exactly 5 minutes or exactly 10 minutes between the airings of any two consecutive shows. Any commercial break before 8 p.m. and after 11:20 p.m. has not been considered in any of the following clues:
(i) Starting time of SD cannot be before 9 p.m. and there has to be a gap of at least 100 minutes between the starting times of SD and KSS.
(ii) PPK whose length is 20 minutes will start at exactly 9:40 p.m. and will be followed by a commercial break of 10 minutes.
(iii) The airing of the shortest show, whose length is 15 minutes, is immediately precedes the airing of the longest show, whose length is 40 minutes, with a commercial break of 10 minutes between their airings.
(iv) KSS is the last show which starts at exactly 10:50 p.m. and immediately preceded by a commercial break of 5 minutes.

Q.35
Which of the following can be the second longest show?

1 **DC**

2 **SD**

3 **CPS**

4 **Either (1) or (3)**

Solution:
Correct Answer : 4

Bookmark

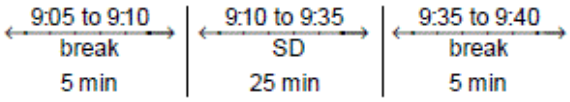
Answer key/Solution

By statement (ii), PPK starts exactly at 9:40 p.m and runs for 20 minutes.
Timeline for PPK : 9:40 p.m to 10:00 p.m which is followed by a commercial break of 10 minutes.
By statement (iii), length of shortest show is 15 minutes and length of longest show is 40 minutes. Also, show length for all the shows is an integral multiple of 5.
Therefore, the show lengths (in minutes) of the six shows are:
15, 20, 25, 30, 35, 40, in no specific order.
By Statement (iv), KSS starts at 10:50 p.m and is the last show so ends at 11:20 p.m. preceded by a commercial break of 5 minutes.
Timeline of KSS : (KSS runs for 30 minutes).

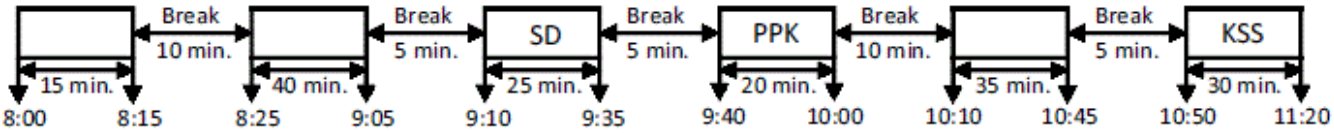
10 : 45 to 10 : 50	10 : 50 to 11 : 20
(break)	(KSS)

Therefore, the only show possible between PPK and KSS, including the breaks, is the one whose running time is 35 minutes i.e., 10:10 pm to 10:45 pm.
By statement (iii), since the shortest show precedes the airing of the longest show with a commercial break of 10 minutes. Therefore, the timeline would like:

Now, slot of only one show whose length is 25 minutes is left, and will be aired at 9:05, and has to be SD, by statement I(i), and therefore there has to be a gap of at least 100 minutes between the starting times of SD and KSS.
The only timeline possible for SD is:



The final timeline would look like:



Note: Boxes represent shows and any of the empty boxes can have the name of any of the three shows TR, CPS and DC.

Second longest show is the one having show length of 35 minutes. TR, CPS and DC, any of these three shows, is possible.

FeedBack

Directions for questions 35 to 38: Answer the questions on the basis of the information given below.

Six TV shows, TR, CPS, SD, PPK, DC and KSS are to be aired in some order on the same channel from 8 p.m. to 11:20 p.m. with the first show starting at exactly 8 p.m. and the last show ending at exactly 11:20 p.m. The total length (in minutes) of any of these shows is an integral multiple of 5 and no two shows are of same length. There must be a commercial break of either exactly 5 minutes or exactly 10 minutes between the airings of any two consecutive shows. Any commercial break before 8 p.m. and after 11:20 p.m. has not been considered in any of the following clues:
(i) Starting time of SD cannot be before 9 p.m. and there has to be a gap of at least 100 minutes between the starting times of SD and KSS.
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(iii) The airing of the shortest show, whose length is 15 minutes, is immediately precedes the airing of the longest show, whose length is 40 minutes, with a commercial break of 10 minutes between their airings.
(iv) KSS is the last show which starts at exactly 10:50 p.m. and immediately preceded by a commercial break of 5 minutes.

Q.36
What is the sum of the lengths (in minutes) of all the commercial breaks in the given duration?

Solution:
Correct Answer : 35

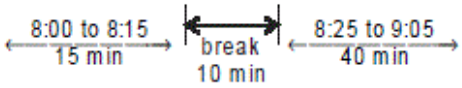
Bookmark

Answer key/Solution

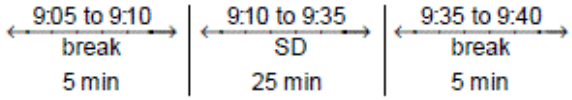
By statement (ii), PPK starts exactly at 9:40 p.m and runs for 20 minutes.
Timeline for PPK : 9:40 p.m to 10:00 p.m which is followed by a commercial break of 10 minutes.
By statement (iii), length of shortest show is 15 minutes and length of longest show is 40 minutes. Also, show length for all the shows is an integral multiple of 5.
Therefore, the show lengths (in minutes) of the six shows are:
15, 20, 25, 30, 35, 40, in no specific order.
By Statement (iv), KSS starts at 10:50 p.m and is the last show so ends at 11:20 p.m. preceded by a commercial break of 5 minutes.
Timeline of KSS : (KSS runs for 30 minutes).

10 : 45 to 10 : 50	10 : 50 to 11 : 20
(break)	(KSS)

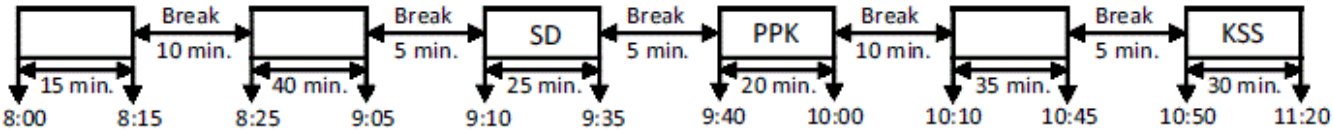
Therefore, the only show possible between PPK and KSS, including the breaks, is the one whose running time is 35 minutes i.e., 10:10 pm to 10:45 pm.
By statement (iii), since the shortest show precedes the airing of the longest show with a commercial break of 10 minutes. Therefore, the timeline would like:



Now, slot of only one show whose length is 25 minutes is left, and will be aired at 9:05, and has to be SD, by statement I(i), and therefore there has to be a gap of at least 100 minutes between the starting times of SD and KSS.
The only timeline possible for SD is:



The final timeline would look like:



Note: Boxes represent shows and any of the empty boxes can have the name of any of the three shows TR, CPS and DC.

Sum of all breaks = 10 + 5 + 5 + 10 + 5 = 35 minutes

FeedBack

Directions for questions 35 to 38: Answer the questions on the basis of the information given below.

Six TV shows, TR, CPS, SD, PPK, DC and KSS are to be aired in some order on the same channel from 8 p.m. to 11:20 p.m. with the first show starting at exactly 8 p.m. and the last show ending at exactly 11:20 p.m. The total length (in minutes) of any of these shows is an integral multiple of 5 and no two shows are of same length. There must be a commercial break of either exactly 5 minutes or exactly 10 minutes between the airings of any two consecutive shows. Any commercial break before 8 p.m. and after 11:20 p.m. has not been considered in any of the following clues:
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(ii) PPK whose length is 20 minutes will start at exactly 9:40 p.m. and will be followed by a commercial break of 10 minutes.
(iii) The airing of the shortest show, whose length is 15 minutes, is immediately precedes the airing of the longest show, whose length is 40 minutes, with a commercial break of 10 minutes between their airings.
(iv) KSS is the last show which starts at exactly 10:50 p.m. and immediately preceded by a commercial break of 5 minutes.

Q.37
If DC is the longest show, then what is the ending time of DC?

1 **8:15 p.m.**

2 **9:35 p.m.**

3 **9:05 p.m.**

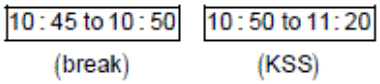
4 **10:45 p.m.**

Solution:
Correct Answer : 3

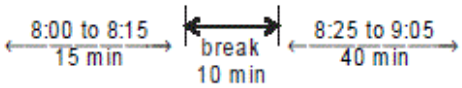
Bookmark

Answer key/Solution

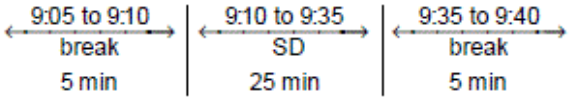
By statement (ii), PPK starts exactly at 9:40 p.m and runs for 20 minutes.
Timeline for PPK : 9:40 p.m to 10:00 p.m which is followed by a commercial break of 10 minutes.
By statement (iii), length of shortest show is 15 minutes and length of longest show is 40 minutes. Also, show length for all the shows is an integral multiple of 5.
Therefore, the show lengths (in minutes) of the six shows are:
15, 20, 25, 30, 35, 40, in no specific order.
By Statement (iv), KSS starts at 10:50 p.m and is the last show so ends at 11:20 p.m. preceded by a commercial break of 5 minutes.
Timeline of KSS : (KSS runs for 30 minutes).



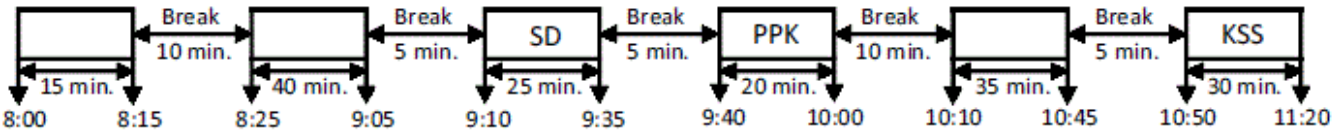
Therefore, the only show possible between PPK and KSS, including the breaks, is the one whose running time is 35 minutes i.e., 10:10 pm to 10:45 pm.
By statement (iii), since the shortest show precedes the airing of the longest show with a commercial break of 10 minutes. Therefore, the timeline would like:



Now, slot of only one show whose length is 25 minutes is left, and will be aired at 9:05, and has to be SD, by statement I(i), and therefore there has to be a gap of at least 100 minutes between the starting times of SD and KSS.
The only timeline possible for SD is:



The final timeline would look like:



Note: Boxes represent shows and any of the empty boxes can have the name of any of the three shows TR, CPS and DC.

If DC is the longest show it must be aired at the time when show with show length 40 minutes is aired. So, DC will end at 9:05 p.m.

FeedBack

Directions for questions 35 to 38: Answer the questions on the basis of the information given below.

Six TV shows, TR, CPS, SD, PPK, DC and KSS are to be aired in some order on the same channel from 8 p.m. to 11:20 p.m. with the first show starting at exactly 8 p.m. and the last show ending at exactly 11:20 p.m. The total length (in minutes) of any of these shows is an integral multiple of 5 and no two shows are of same length. There must be a commercial break of either exactly 5 minutes or exactly 10 minutes between the airings of any two consecutive shows. Any commercial break before 8 p.m. and after 11:20 p.m. has not been considered in any of the following clues:
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(iii) The airing of the shortest show, whose length is 15 minutes, is immediately precedes the airing of the longest show, whose length is 40 minutes, with a commercial break of 10 minutes between their airings.
(iv) KSS is the last show which starts at exactly 10:50 p.m. and immediately preceded by a commercial break of 5 minutes.

Q.38
If the sequence of airings remains same as obtained with the help of the given clues but the commercial breaks are ignored, then which of the following is correct?

1 **The airing of DC will immediately follow the airing of TR.**

2 **The airing of DC can immediately precede the airing of PPK.**

3 **The airing of TR will immediately precede the airing of KSS.**

4 **The airing of CPS can immediately precede the airing of SD.**

Solution:
Correct Answer : 4

Bookmark

Answer key/Solution

By statement (ii), PPK starts exactly at 9:40 p.m and runs for 20 minutes.
Timeline for PPK : 9:40 p.m to 10:00 p.m which is followed by a commercial break of 10 minutes.
By statement (iii), length of shortest show is 15 minutes and length of longest show is 40 minutes. Also, show length for all the shows is an integral multiple of 5.
Therefore, the show lengths (in minutes) of the six shows are:
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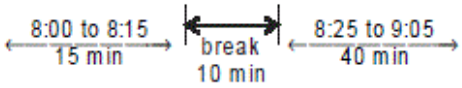
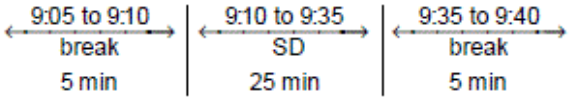
By Statement (iv), KSS starts at 10:50 p.m and is the last show so ends at 11:20 p.m. preceded by a commercial break of 5 minutes.
Timeline of KSS : (KSS runs for 30 minutes).

10 : 45 to 10 : 50	10 : 50 to 11 : 20
(break)	(KSS)

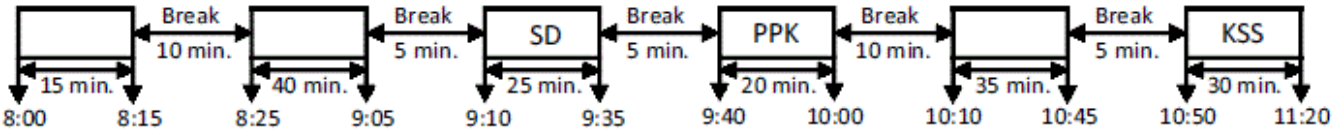
Therefore, the only show possible between PPK and KSS, including the breaks, is the one whose running time is 35 minutes i.e., 10:10 pm to 10:45 pm.
By statement (iii), since the shortest show precedes the airing of the longest show with a commercial break of 10 minutes. Therefore, the timeline would like:



Now, slot of only one show whose length is 25 minutes is left, and will be aired at 9:05, and has to be SD, by statement I(i), and therefore there has to be a gap of at least 100 minutes between the starting times of SD and KSS.
The only timeline possible for SD is:



The final timeline would look like:



Note: Boxes represent shows and any of the empty boxes can have the name of any of the three shows TR, CPS and DC.

Only the statement, CPS "CAN" immediately precede the airing of SD, is true.

FeedBack

Directions for questions 39 to 42: Answer the questions on the basis of the information given below.

Lilliput University organised a dance competition in which four students - Irfan, Sachin, Sehwag and Yuvraj - took part. This dance competition had a total of 3 rounds. The final ranks, got by the four students, were determined on the basis of the total scores of all 3 rounds scored by each of them. The student with the highest total score won the competition and was therefore, given rank 1. Similarly, the one scoring the second total was given rank 2 and so on. The partial information about their scores in 3 rounds is provided in the table shown below.

	Scores				
ROUND-	I	II	III	total	rank
Sehwag		6	8	17	
Sachin	7	5			1
Irfan	6	6			2
Yuvraj					

(i) Yuvraj scored equal in round I and round II, and the sum of his scores in these two rounds was equal to his score in round III.
(ii) The score of any student in any individual round was not more than 8 and the total score of any student in all the three rounds taken together was not less than 13.
(iii) No student scored same in all the 3 rounds.
(iv) The total score was not same for any 2 students.
(v) Score of each student in any round is an integral value.

Q.39
How much did Yuvraj score in round III?

1 **8**

2 **4**

3 **7**

4 **None of these**

Solution:
Correct Answer : 1

Bookmark

Answer key/Solution

Statement (i) says Yuvraj scored equal in round I and round II. Let that score be 'a' and hence a + a = 2a is his score in round III.

Round	I	II	III	Total	Rank
Sehwag		6	8	17	
Sachin	7	5			1
Irfan	6	6			2
Yuvraj	a	a	2a		

Sehwag's score in round I is 17 – 6 – 8 = 3 and since Sachin's rank is 1, therefore he must have scored greater than 17. As statement (ii) says score of any individual is not greater than 8,
Possible scores of Sachin can be
7 + 5 + 8 = 20 and,
7 + 5 + 7 = 19
7 + 5 + 6 = 18 is not possible because Irfan scored rank 2, and therefore his total score will be between Sachin's and Sehwag's score.
By statement (iii), since no student scored same in all three rounds, Irfan cannot score 18 (6 + 6 + 6). So he must have scored 19 and hence Sachin must have scored 20.
No ones score is less than 13,
and Yuvraj's total score is a + a + 2a = 4a and the only possibility to get integral value in required range is a = 4.
Therefore, Yuvraj's score is 16.
Final table will look as shown below:

Round	I	II	III	Total	Rank
Sehwag	3	6	8	17	3
Sachin	7	5	8	20	1
Irfan	6	6	7	19	2
Yuvraj	4	4	8	16	4

Yuvraj scored 8 in round III.

FeedBack

Directions for questions 39 to 42: Answer the questions on the basis of the information given below.

Lilliput University organised a dance competition in which four students - Irfan, Sachin, Sehwag and Yuvraj - took part. This dance competition had a total of 3 rounds. The final ranks, got by the four students, were determined on the basis of the total scores of all 3 rounds scored by each of them. The student with the highest total score won the competition and was therefore, given rank 1. Similarly, the one scoring the second total was given rank 2 and so on. The partial information about their scores in 3 rounds is provided in the table shown below.

	Scores				
ROUND-	I	II	III	total	rank
Sehwag		6	8	17	
Sachin	7	5			1
Irfan	6	6			2
Yuvraj					

(i) Yuvraj scored equal in round I and round II, and the sum of his scores in these two rounds was equal to his score in round III.
(ii) The score of any student in any individual round was not more than 8 and the total score of any student in all the three rounds taken together was not less than 13.
(iii) No student scored same in all the 3 rounds.
(iv) The total score was not same for any 2 students.
(v) Score of each student in any round is an integral value.

Q.40
What was Irfan's total score?

1 **20**

2 **19**

3 **18**

4 **None of these**

Solution:
Correct Answer : 2

Bookmark

Answer key/Solution

Statement (i) says Yuvraj scored equal in round I and round II. Let that score be 'a' and hence a + a = 2a is his score in round III.

Round	I	II	III	Total	Rank
Sehwag		6	8	17	
Sachin	7	5			1
Irfan	6	6			2
Yuvraj	a	a	2a		

Sehwag's score in round I is 17 – 6 – 8 = 3 and since Sachin's rank is 1, therefore he must have scored greater than 17. As statement (ii) says score of any individual is not greater than 8,
Possible scores of Sachin can be
7 + 5 + 8 = 20 and,
7 + 5 + 7 = 19
7 + 5 + 6 = 18 is not possible because Irfan scored rank 2, and therefore his total score will be between Sachin's and Sehwag's score.
By statement (iii), since no student scored same in all three rounds, Irfan cannot score 18 (6 + 6 + 6). So he must have scored 19 and hence Sachin must have scored 20.
No ones score is less than 13,
and Yuvraj's total score is a + a + 2a = 4a and the only possibility to get integral value in required range is a = 4.
Therefore, Yuvraj's score is 16.
Final table will look as shown below:

Round	I	II	III	Total	Rank
Sehwag	3	6	8	17	3
Sachin	7	5	8	20	1
Irfan	6	6	7	19	2
Yuvraj	4	4	8	16	4

Irfan's total score is 19.

FeedBack

Directions for questions 39 to 42: Answer the questions on the basis of the information given below.

Lilliput University organised a dance competition in which four students - Irfan, Sachin, Sehwag and Yuvraj - took part. This dance competition had a total of 3 rounds. The final ranks, got by the four students, were determined on the basis of the total scores of all 3 rounds scored by each of them. The student with the highest total score won the competition and was therefore, given rank 1. Similarly, the one scoring the second total was given rank 2 and so on. The partial information about their scores in 3 rounds is provided in the table shown below.

	Scores				
ROUND-	I	II	III	total	rank
Sehwag		6	8	17	
Sachin	7	5			1
Irfan	6	6			2
Yuvraj					

(i) Yuvraj scored equal in round I and round II, and the sum of his scores in these two rounds was equal to his score in round III.
(ii) The score of any student in any individual round was not more than 8 and the total score of any student in all the three rounds taken together was not less than 13.
(iii) No student scored same in all the 3 rounds.
(iv) The total score was not same for any 2 students.
(v) Score of each student in any round is an integral value.

Q.41
What was the sum of the scores of all the four students in round II?

1 **21**

2 **20**

3 **24**

4 **None of these**

Solution:
Correct Answer : 1

Bookmark

Answer key/Solution

Statement (i) says Yuvraj scored equal in round I and round II. Let that score be 'a' and hence a + a = 2a is his score in round III.

Round	I	II	III	Total	Rank
Sehwag		6	8	17	
Sachin	7	5			1
Irfan	6	6			2
Yuvraj	a	a	2a		

Sehwag's score in round I is 17 – 6 – 8 = 3 and since Sachin's rank is 1, therefore he must have scored greater than 17. As statement (ii) says score of any individual is not greater than 8,
Possible scores of Sachin can be
7 + 5 + 8 = 20 and,
7 + 5 + 7 = 19
7 + 5 + 6 = 18 is not possible because Irfan scored rank 2, and therefore his total score will be between Sachin's and Sehwag's score.
By statement (iii), since no student scored same in all three rounds, Irfan cannot score 18 (6 + 6 + 6). So he must have scored 19 and hence Sachin must have scored 20.
No ones score is less than 13,
and Yuvraj's total score is a + a + 2a = 4a and the only possibility to get integral value in required range is a = 4.
Therefore, Yuvraj's score is 16.
Final table will look as shown below:

Round	I	II	III	Total	Rank
Sehwag	3	6	8	17	3
Sachin	7	5	8	20	1
Irfan	6	6	7	19	2
Yuvraj	4	4	8	16	4

Required sum = 6 + 5 + 6 + 4 = 21

FeedBack

Directions for questions 39 to 42: Answer the questions on the basis of the information given below.

Lilliput University organised a dance competition in which four students - Irfan, Sachin, Sehwag and Yuvraj - took part. This dance competition had a total of 3 rounds. The final ranks, got by the four students, were determined on the basis of the total scores of all 3 rounds scored by each of them. The student with the highest total score won the competition and was therefore, given rank 1. Similarly, the one scoring the second total was given rank 2 and so on. The partial information about their scores in 3 rounds is provided in the table shown below.

	Scores				
ROUND-	I	II	III	total	rank
Sehwag		6	8	17	
Sachin	7	5			1
Irfan	6	6			2
Yuvraj					

(i) Yuvraj scored equal in round I and round II, and the sum of his scores in these two rounds was equal to his score in round III.
(ii) The score of any student in any individual round was not more than 8 and the total score of any student in all the three rounds taken together was not less than 13.
(iii) No student scored same in all the 3 rounds.
(iv) The total score was not same for any 2 students.
(v) Score of each student in any round is an integral value.

Q.42
What was the sum of the final scores of all the four students?

1 **70**

2 **71**

3 **68**

4 **None of these**

Solution:
Correct Answer : 4

Bookmark

Answer key/Solution

Statement (i) says Yuvraj scored equal in round I and round II. Let that score be 'a' and hence a + a = 2a is his score in round III.

Round	I	II	III	Total	Rank
Sehwag		6	8	17	
Sachin	7	5			1
Irfan	6	6			2
Yuvraj	a	a	2a		

Sehwag's score in round I is 17 – 6 – 8 = 3 and since Sachin's rank is 1, therefore he must have scored greater than 17. As statement (ii) says score of any individual is not greater than 8,
Possible scores of Sachin can be
7 + 5 + 8 = 20 and,
7 + 5 + 7 = 19
7 + 5 + 6 = 18 is not possible because Irfan scored rank 2, and therefore his total score will be between Sachin's and Sehwag's score.
By statement (iii), since no student scored same in all three rounds, Irfan cannot score 18 (6 + 6 + 6). So he must have scored 19 and hence Sachin must have scored 20.
No ones score is less than 13,
and Yuvraj's total score is a + a + 2a = 4a and the only possibility to get integral value in required range is a = 4.
Therefore, Yuvraj's score is 16.
Final table will look as shown below:

Round	I	II	III	Total	Rank
Sehwag	3	6	8	17	3
Sachin	7	5	8	20	1
Irfan	6	6	7	19	2
Yuvraj	4	4	8	16	4

Total score = 17 + 20 + 19 + 16 = 72

FeedBack

Directions for questions 43 to 46: Answer the questions on the basis of the information given below.

A cricket club hired six coaches – P, Q, R, S, T and U – for giving coaching in at least one of the three areas – batting, bowling and fielding. Further, it is known that,
A. P can give coaching only in batting, while R and Q both can give coaching in batting and fielding but not in bowling.
B. T can give coaching in batting and bowling but not in fielding, while S can give coaching in both bowling and fielding but not in batting.
C. U can give coaching in bowling only.

The manager of the club create the schedule of the coaching for the entire week i.e., for 7 days. If he schedule coaching for any day of a week, then he has to schedule exactly one session of each of the three given areas.
While scheduling, he has to satisfy the following conditions-
(i) In the entire week, any coach gives coaching in not more than two sessions of the same area and not more than three sessions in total.
(ii) Any coach takes a maximum of one session in a day and a minimum of one session in the entire week.

Q.43
What is the minimum number of days on which there will be no coaching scheduled in the week?

1 **0**

2 **1**

3 **2**

4 **3**

Solution:
Correct Answer : 3

Bookmark

Answer key/Solution

By statement A, P gives coaching in batting only. R and Q gives coaching in batting and fielding only.
By statement B, T gives coaching in batting and bowling only, and S gives coaching in bowling and fielding only.
By statement C, U gives coaching in bowling only.

	Maximum no. of sessions
P	2(batting)
Q	3(2 batting + 1 fielding) (1 batting + 2 fielding)
R	3(2 batting + 1 fielding) (1 batting + 2 fielding)
S	3(2 bowling + 1 fielding) (1 bowling + 2 fielding)
T	3(2 batting + 1 bowling) (1 batting + 2 bowling)
U	2(bowling)

To get the minimum number of days where there will no coaching given, we have to find the maximum number of days where the club can provide coaching.

(a) As P and U can give coaching for at most two days each, and the remaining can give coaching for three days each, so the maximum number of coachings that can be given will be (2*2) + (4*3) = 16. As, there are three areas and exactly one session of each of the three given areas had to be there in a day therefore number of days the coaching will last = $\frac{16}{3} \approx 5$. So, there can be a maximum of five days of coaching. Hence, a minimum of two days will be there in a week where there will be no coaching.

(b) The following table shows us an instance where there can be a maximum of five days of coaching that can be provided by the club:

Day	Batting	Bowling	Fielding
1	P	S	Q
2	P	T	R
3	Q	U	S
4	T	U	S
5	T	S	Q
6	-	-	-
7	-	-	-

FeedBack

Directions for questions 43 to 46: Answer the questions on the basis of the information given below.

A cricket club hired six coaches – P, Q, R, S, T and U – for giving coaching in at least one of the three areas – batting, bowling and fielding. Further, it is known that,
A. P can give coaching only in batting, while R and Q both can give coaching in batting and fielding but not in bowling.
B. T can give coaching in batting and bowling but not in fielding, while S can give coaching in both bowling and fielding but not in batting.
C. U can give coaching in bowling only.

The manager of the club create the schedule of the coaching for the entire week i.e., for 7 days. If he schedule coaching for any day of a week, then he has to schedule exactly one session of each of the three given areas.
While scheduling, he has to satisfy the following conditions-
(i) In the entire week, any coach gives coaching in not more than two sessions of the same area and not more than three sessions in total.
(ii) Any coach takes a maximum of one session in a day and a minimum of one session in the entire week.

Q.44
Which of the following cannot be the list of the persons who all can give coaching on a same day?

1 **P, R and S**

2 **R, T and U**

3 **P, Q and R**

4 **Q, S and T**

Solution:
Correct Answer : 3

Bookmark

Answer key/Solution

By statement A, P gives coaching in batting only. R and Q gives coaching in batting and fielding only.
By statement B, T gives coaching in batting and bowling only, and S gives coaching in bowling and fielding only.
By statement C, U gives coaching in bowling only.

	Maximum no. of sessions
P	2(batting)
Q	3(2 batting + 1 fielding) (1 batting + 2 fielding)
R	3(2 batting + 1 fielding) (1 batting + 2 fielding)
S	3(2 bowling + 1 fielding) (1 bowling + 2 fielding)
T	3(2 batting + 1 bowling) (1 batting + 2 bowling)
U	2(bowling)

As none of P, Q and R can give coaching in bowling, so they can't form a combination of the persons who give coaching on a particular day.

FeedBack

Directions for questions 43 to 46: Answer the questions on the basis of the information given below.

A cricket club hired six coaches – P, Q, R, S, T and U – for giving coaching in at least one of the three areas – batting, bowling and fielding. Further, it is known that,
A. P can give coaching only in batting, while R and Q both can give coaching in batting and fielding but not in bowling.
B. T can give coaching in batting and bowling but not in fielding, while S can give coaching in both bowling and fielding but not in batting.
C. U can give coaching in bowling only.

The manager of the club create the schedule of the coaching for the entire week i.e., for 7 days. If he schedule coaching for any day of a week, then he has to schedule exactly one session of each of the three given areas.
While scheduling, he has to satisfy the following conditions-
(i) In the entire week, any coach gives coaching in not more than two sessions of the same area and not more than three sessions in total.
(ii) Any coach takes a maximum of one session in a day and a minimum of one session in the entire week.

Q.45
Due to some personal issues, both T and U are available only for the first day of the week.

What is the maximum possible number of days on which the club can provide coaching?

1 **5**

2 **4**

3 **3**

4 **2**

Solution:
Correct Answer : 3

Bookmark

Answer key/Solution

By statement A, P gives coaching in batting only. R and Q gives coaching in batting and fielding only.
By statement B, T gives coaching in batting and bowling only, and S gives coaching in bowling and fielding only.
By statement C, U gives coaching in bowling only.

	Maximum no. of sessions
P	2(batting)
Q	3(2 batting + 1 fielding) (1 batting + 2 fielding)
R	3(2 batting + 1 fielding) (1 batting + 2 fielding)
S	3(2 bowling + 1 fielding) (1 bowling + 2 fielding)
T	3(2 batting + 1 bowling) (1 batting + 2 bowling)
U	2(bowling)

As T and U are only available for the first day, and after that only U can give coaching in bowling and that too for maximum two days. So, a maximum of three days, the club can provide coaching.

FeedBack

Directions for questions 43 to 46: Answer the questions on the basis of the information given below.

A cricket club hired six coaches – P, Q, R, S, T and U – for giving coaching in at least one of the three areas – batting, bowling and fielding. Further, it is known that,
A. P can give coaching only in batting, while R and Q both can give coaching in batting and fielding but not in bowling.
B. T can give coaching in batting and bowling but not in fielding, while S can give coaching in both bowling and fielding but not in batting.
C. U can give coaching in bowling only.

The manager of the club create the schedule of the coaching for the entire week i.e., for 7 days. If he schedule coaching for any day of a week, then he has to schedule exactly one session of each of the three given areas.
While scheduling, he has to satisfy the following conditions-
(i) In the entire week, any coach gives coaching in not more than two sessions of the same area and not more than three sessions in total.
(ii) Any coach takes a maximum of one session in a day and a minimum of one session in the entire week.

Q.46

Due to some personal issues, both T and U are available only for the first day of the week.

Which of the following can be the correct combination of the persons and the number of coaching sessions they will provide in the entire week?

1 **P-2, Q-3 and S-2**

2 **P-1, Q-2 and R-3**

3 **Q-2, R-3 and S-3**

4 **P-1, Q-3 and S-2**

Solution:
Correct Answer : 4

Bookmark

Answer key/Solution

By statement A, P gives coaching in batting only. R and Q gives coaching in batting and fielding only.
By statement B, T gives coaching in batting and bowling only, and S gives coaching in bowling and fielding only.
By statement C, U gives coaching in bowling only.

	Maximum no. of sessions
P	2(batting)
Q	3(2 batting + 1 fielding) (1 batting + 2 fielding)
R	3(2 batting + 1 fielding) (1 batting + 2 fielding)
S	3(2 bowling + 1 fielding) (1 bowling + 2 fielding)
T	3(2 batting + 1 bowling) (1 batting + 2 bowling)
U	2(bowling)

According to the given information, we get three possible cases, of the persons who gave coaching in batting, bowling and fielding in that order:
Case (a): On Day 1- T, U and S
Case (b): On day 1- T, U and R
Case (c): On day 1- T, U and Q
Option (A), (B) and (C) does not fit into any of the given cases. But option (D) is possible in Case (C). On day 1-T, U and Q. On day 2- P, S and Q. On day 3- Q, S and R.

FeedBack

Directions for questions 47 to 50: Answer the questions on the basis of the information given below.

During the period of demonetization any branch of any bank accepted deposits in currency notes of only two denominations – Rs. 500 and Rs. 1000; and issued the currency notes of only two denominations – Rs. 200 and Rs. 2000. In that period the accountant of one particular branch of a particular bank recorded the number of currency notes deposited in the branch and issued by the branch for each day during a period of six consecutive working days i.e., from Monday to Saturday. Suppose, on any day,
X = Number of Rs. 500 currency notes deposited in the branch.
Y = Number of Rs. 1000 currency notes deposited in the branch.
A = Number of Rs. 200 currency notes issued by the branch.
B = Number of Rs. 2000 currency notes issued by the branch.

The accountant of that branch designed two index values. He called one of them as 'C-index' which was equal to the lower value between X and Y, and the other one as 'D-index' which was equal to the higher value between A and B. The table below shows the values of 'C-index' and 'D-index', as calculated by the accountant, for each of the six days i.e. from Monday to Saturday:

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
C-index	250	120	50	200	150	300
D-index	300	150	200	100	110	180

It is also known that on any of these six days X was not equal to Y and A was not equal to B.

Q.47
On Monday, if the total amount (in Rs.) deposited in the branch was equal to the total amount (in Rs.) issued by the branch, then at most how many currency notes got deposited in the branch on Monday?

1 **534**

2 **1068**

3 **501**

4 **599**

Solution:
Correct Answer : 2

Bookmark

Answer key/Solution

Given that: 500X + 1000Y = 200A + 2000B or 5X + 10Y = 2A + 20B.
It is known that one of X and Y is equal to 250 and the other is more than 250 while one of A and B is equal to 300 and the other is less than 300. We have to maximize the sum of X and Y, and for that Y = 250, A = 299 and B = 300. In that case X = 819.6 but X is an integer so maximum value of X is 819, but at 819 we will not get integer value for either A or B.
Now next possible maximum value is 818. and we get integral values for A and B also.

So, the maximum value of (X + Y) = 250 + 818 = 1068, because
250(1000) + 818(500) = 300(2000) + 295(200)

FeedBack

Directions for questions 47 to 50: Answer the questions on the basis of the information given below.

During the period of demonetization any branch of any bank accepted deposits in currency notes of only two denominations – Rs. 500 and Rs. 1000; and issued the currency notes of only two denominations – Rs. 200 and Rs. 2000. In that period the accountant of one particular branch of a particular bank recorded the number of currency notes deposited in the branch and issued by the branch for each day during a period of six consecutive working days i.e., from Monday to Saturday. Suppose, on any day,
X = Number of Rs. 500 currency notes deposited in the branch.
Y = Number of Rs. 1000 currency notes deposited in the branch.
A = Number of Rs. 200 currency notes issued by the branch.
B = Number of Rs. 2000 currency notes issued by the branch.

The accountant of that branch designed two index values. He called one of them as 'C-index' which was equal to the lower value between X and Y, and the other one as 'D-index' which was equal to the higher value between A and B. The table below shows the values of 'C-index' and 'D-index', as calculated by the accountant, for each of the six days i.e. from Monday to Saturday:

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
C-index	250	120	50	200	150	300
D-index	300	150	200	100	110	180

It is also known that on any of these six days X was not equal to Y and A was not equal to B.

Q.48
On Wednesday, if the total number of currency notes deposited in the branch and that of issued by the branch were equal, then at most how much amount (in Rs.) got deposited in the branch on that day?

Solution:
Correct Answer : 374000

Bookmark

Answer key/Solution

Given that: X + Y = A + B where one of A and B is equal to 200 and the other one is less than 200.
It is also known that one of X and Y is equal to 50 and the other one is more than 50. We have to maximize (500X + 1000Y) and for that first we will have to maximize (X + Y) so we take A = 200 and B = 199 such that X + Y = 200 + 199 = 399. Now in order to maximize (500X + 1000Y) take X = 50 and Y = 349.
So the maximum amount that could have been deposited on Wednesday = 500(50) + 1000(349) = 374000.
Hence, the correct answer is 374000.

FeedBack

Directions for questions 47 to 50: Answer the questions on the basis of the information given below.

During the period of demonetization any branch of any bank accepted deposits in currency notes of only two denominations – Rs. 500 and Rs. 1000; and issued the currency notes of only two denominations – Rs. 200 and Rs. 2000. In that period the accountant of one particular branch of a particular bank recorded the number of currency notes deposited in the branch and issued by the branch for each day during a period of six consecutive working days i.e., from Monday to Saturday. Suppose, on any day,
X = Number of Rs. 500 currency notes deposited in the branch.
Y = Number of Rs. 1000 currency notes deposited in the branch.
A = Number of Rs. 200 currency notes issued by the branch.
B = Number of Rs. 2000 currency notes issued by the branch.

The accountant of that branch designed two index values. He called one of them as 'C-index' which was equal to the lower value between X and Y, and the other one as 'D-index' which was equal to the higher value between A and B. The table below shows the values of 'C-index' and 'D-index', as calculated by the accountant, for each of the six days i.e. from Monday to Saturday:

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
C-index	250	120	50	200	150	300
D-index	300	150	200	100	110	180

It is also known that on any of these six days X was not equal to Y and A was not equal to B.

Q.49
On how many of the given six days the total amount (in Rs.) deposited in the branch was definitely more than the total amount (in Rs.) issued by the branch?

Solution:
Correct Answer : 2

Bookmark

Answer key/Solution

To determine on how many days the total amount deposited in the branch was definitely more than the amount issued by the branch, we will take the minimum possible deposit of any day.
Now, if minimum deposit is greater than maximum issue, then it must be for whatever value of X, Y, A and B.
Like on Monday, C-index is 250, so to minimise possible deposit, let me of 500X + 1000Y has to be minimised.
$\therefore$ 250 = Y and 251 = X
Similarly, to maximise issue 200A + 2000B has to be maximised
$\therefore$ A = 299, B = 300.
Look at the following table

Day	Minimum Possible Deposit	Maximum Possible Issue
Monday	250(1000)+251(500)=375500	300(2000)+299(200)=659800
Tuesday	120(1000)+121(500)=180500	150(2000)+149(200)=329800
Wednesday	50(1000)+51(500)=75500	200(2000)+199(200)=439800
Thursday	200(1000)+201(500)=300500	100(2000)+99(200)=219800
Friday	150(1000)+151(500)=225500	110(2000)+109(200)=241800
Saturday	300(1000)+301(500)=450500	180(2000)+179(200)=395800

The table clearly shows that in any case total amount deposited was less than the total amount issued by the bank except on Thursday and Saturday.

FeedBack

Directions for questions 47 to 50: Answer the questions on the basis of the information given below.

During the period of demonetization any branch of any bank accepted deposits in currency notes of only two denominations – Rs. 500 and Rs. 1000; and issued the currency notes of only two denominations – Rs. 200 and Rs. 2000. In that period the accountant of one particular branch of a particular bank recorded the number of currency notes deposited in the branch and issued by the branch for each day during a period of six consecutive working days i.e., from Monday to Saturday. Suppose, on any day,
X = Number of Rs. 500 currency notes deposited in the branch.
Y = Number of Rs. 1000 currency notes deposited in the branch.
A = Number of Rs. 200 currency notes issued by the branch.
B = Number of Rs. 2000 currency notes issued by the branch.

The accountant of that branch designed two index values. He called one of them as 'C-index' which was equal to the lower value between X and Y, and the other one as 'D-index' which was equal to the higher value between A and B. The table below shows the values of 'C-index' and 'D-index', as calculated by the accountant, for each of the six days i.e. from Monday to Saturday:

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
C-index	250	120	50	200	150	300
D-index	300	150	200	100	110	180

It is also known that on any of these six days X was not equal to Y and A was not equal to B.

Q.50

If the maximum number of currency notes issued by that branch during the given period is 'k', then the value of 'k - 6' is

Solution:
Correct Answer : 2068

Bookmark

Answer key/Solution

Maximum currency notes issued during the given period.
$\Rightarrow$ K = Monday (300 + (300 – 1)) + Tuesday(150 + (150 – 1)) + Wednesday (200 + 200 – 1)) + Thursday (100 + (100 – 1)) + Friday (110 + (110 – 1)) + Saturday (180 + (180 – 1))
= 599 + 299 + 399 + 199 + 219 + 359 = 2074
$\therefore$ K – 6 = 2074 – 6 = 2068.

FeedBack

Directions for questions 51 to 54: Answer the questions on the basis of the information given below.

Table 1 below shows the number of toys bought by each of the 10 friends and the total amount (in Rs.) spent by them in buying the toys. Table 2 shows the number of toys sold by each of the five shops to the friends and the price (in Rs.) of each toy at which the respective shop sold all of its toys.

Table 1

Friends	Amount	Number of toys bought
Sachin	75	11
Sehwag	53	7
Steve	72	8
Shane	68	10
Sanath	51	7
Saeed	87	17
Saurav	34	4
Smith	88	12
Shahid	77	13
Saqlain	67	9

Table 2

Shops	Number of toys sold	Price per toy
Shop 1	(1, 4, 6, 9)	7
Shop 2	(5, 6, 7, 7)	5
Shop 3	(2, 3, 4, 8)	3
Shop 4	(3, 4, 4, 5)	11
Shop 5	(3, 5, 5, 7)	9

Further, it was also known that:
(i) No friend bought any toy from any shop other than the five shops mentioned in Table 2 and no shop sold any toys to any person other than the 10 persons mentioned in Table 1.
(ii) Each shop sold the toys to exactly four of the 10 friends (number of toys sold to each of those four friends is shown separately in the parenthesis in Table 2) and each friend bought toys from exactly two of the given 5 shops.

Q.51

Who among the following bought the least number of toys from Shop 2?

1 **Sachin**

2 **Shahid**

3 **Shane**

4 **Smith**

Solution:
Correct Answer : 4

Bookmark

Answer key/Solution

Lets first start with Sachin:-
Sachin bought 11 toys, for which possible combinations are (2 + 9), (3 + 8), (4 + 7) and (5 + 6).
Now, let's calculate the prices,
2(shop3) + 9(shop1) = 2 × 3 + 9 × 7 ≠ 75.
Similarly,
3(shop4) + 8(shop3) = 3 × 11 + 8 × 3 = 33 + 24 ≠ 75.
Further, you will find, 4(shop3) + 7(shop5) = 4 × 3 + 7 × 9 = 12 + 63 = 75.
and, 6(shop2) + 5(shop5) = 6 × 5 + 5 × 9 = 75.
This gives us two cases.

Case I:

Name	First transaction	Second transaction
Sachin	4 toys from shop3	7 toys from shop5

Case II:

Name	First transaction	Second transaction
Sachin	6 toys from shop2	5 toys from shop5

Now, similarly, interpret the data for others, you will observe in case I, that,
when you reach Shahid you will observe that Shahid bought 13 toys but in table 2, only 4 values will be left unassigned.

By interpreting all the data correctly we can arrive at the following table:

Shop 1	6	7
Shop 2	5, 6	5
Shop 5	5	9

In these unassigned values, no combination is equal to 13.
So case I is not possible.
Now for case 2:
So, final table on which we can arrive is:

Name	First Transaction	Second Transaction
Sachin	6 toys, Shop 2(Rs.30)	5 toys, Shop 5 (Rs.45)
Sehw ag	3 toys, Shop 3 (Rs.9)	4 toys, Shop 4 (Rs.44)
Steve	4 toys, Shop 1 (Rs.28)	4 toys, Shop 4 (Rs.44)
Shane	7 toys, Shop 2 (Rs.35)	3 toys, Shop 4 (Rs.33)
Sanath	2 toys, Shop 3 (Rs.6)	5 toys, Shop 5 (Rs.45)
Saeed	9 toys, Shop 1 (Rs.63)	8 toys, Shop 3 (Rs.24)
Saurav	1 toy, Shop 1 (Rs.7)	3 toys, Shop 5 (Rs.27)
Smith	5 toys, Shop 2 (Rs.25)	7 toys, Shop 5 (Rs.63)
Shahid	6 toys, Shop 1 (Rs.42)	7 toys, Shop 2 (Rs.35)
Saqlain	4 toys, Shop 3 (Rs.12)	5 toys, Shop 4 (Rs.55)

Smith bought 5 toys from shop 2.

FeedBack

Directions for questions 51 to 54: Answer the questions on the basis of the information given below.

Table 1 below shows the number of toys bought by each of the 10 friends and the total amount (in Rs.) spent by them in buying the toys. Table 2 shows the number of toys sold by each of the five shops to the friends and the price (in Rs.) of each toy at which the respective shop sold all of its toys.

Table 1

Friends	Amount	Number of toys bought
Sachin	75	11
Sehwag	53	7
Steve	72	8
Shane	68	10
Sanath	51	7
Saeed	87	17
Saurav	34	4
Smith	88	12
Shahid	77	13
Saqlain	67	9

Table 2

Shops	Number of toys sold	Price per toy
Shop 1	(1, 4, 6, 9)	7
Shop 2	(5, 6, 7, 7)	5
Shop 3	(2, 3, 4, 8)	3
Shop 4	(3, 4, 4, 5)	11
Shop 5	(3, 5, 5, 7)	9

Further, it was also known that:
(i) No friend bought any toy from any shop other than the five shops mentioned in Table 2 and no shop sold any toys to any person other than the 10 persons mentioned in Table 1.
(ii) Each shop sold the toys to exactly four of the 10 friends (number of toys sold to each of those four friends is shown separately in the parenthesis in Table 2) and each friend bought toys from exactly two of the given 5 shops.

Q.52

Which of the following pairs has the name of the two friends, who bought the same number of toys from two different shops?

1 **Smith and Sachin**

2 **Sanath and Sachin**

3 **Sehwag and Sachin**

4 **Shahid and Shane**

Solution:
Correct Answer : 1

Bookmark

Answer key/Solution

Lets first start with Sachin:-
Sachin bought 11 toys, for which possible combinations are (2 + 9), (3 + 8), (4 + 7) and (5 + 6).
Now, let's calculate the prices,
2(shop3) + 9(shop1) = 2 × 3 + 9 × 7 ≠ 75.
Similarly,
3(shop4) + 8(shop3) = 3 × 11 + 8 × 3 = 33 + 24 ≠ 75.
Further, you will find, 4(shop3) + 7(shop5) = 4 × 3 + 7 × 9 = 12 + 63 = 75.
and, 6(shop2) + 5(shop5) = 6 × 5 + 5 × 9 = 75.
This gives us two cases.
Case I:

Name	First transaction	Second transaction
Sachin	4 toys from shop3	7 toys from shop5

Case II:

Name	First transaction	Second transaction
Sachin	6 toys from shop2	5 toys from shop5

Now, similarly, interpret the data for others, you will observe in case I, that,
when you reach Shahid you will observe that Shahid bought 13 toys but in table 2, only 4 values will be left unassigned.

By interpreting all the data correctly we can arrive at the following table:

Shop 1	6	7
Shop 2	5, 6	5
Shop 5	5	9

In these unassigned values, no combination is equal to 13.
So case I is not possible.
Now for case 2:
So, final table on which we can arrive is:

Name	First Transaction	Second Transaction
Sachin	6 toys, Shop 2(Rs.30)	5 toys, Shop 5 (Rs.45)
Sehw ag	3 toys, Shop 3 (Rs.9)	4 toys, Shop 4 (Rs.44)
Steve	4 toys, Shop 1 (Rs.28)	4 toys, Shop 4 (Rs.44)
Shane	7 toys, Shop 2 (Rs.35)	3 toys, Shop 4 (Rs.33)
Sanath	2 toys, Shop 3 (Rs.6)	5 toys, Shop 5 (Rs.45)
Saeed	9 toys, Shop 1 (Rs.63)	8 toys, Shop 3 (Rs.24)
Saurav	1 toy, Shop 1 (Rs.7)	3 toys, Shop 5 (Rs.27)
Smith	5 toys, Shop 2 (Rs.25)	7 toys, Shop 5 (Rs.63)
Shahid	6 toys, Shop 1 (Rs.42)	7 toys, Shop 2 (Rs.35)
Saqlain	4 toys, Shop 3 (Rs.12)	5 toys, Shop 4 (Rs.55)

Smith and Sachin both bought 5 toys each but from shop 2 and shop 5 respectively.

FeedBack

Directions for questions 51 to 54: Answer the questions on the basis of the information given below.

Table 1 below shows the number of toys bought by each of the 10 friends and the total amount (in Rs.) spent by them in buying the toys. Table 2 shows the number of toys sold by each of the five shops to the friends and the price (in Rs.) of each toy at which the respective shop sold all of its toys.

Table 1

Friends	Amount	Number of toys bought
Sachin	75	11
Sehwag	53	7
Steve	72	8
Shane	68	10
Sanath	51	7
Saeed	87	17
Saurav	34	4
Smith	88	12
Shahid	77	13
Saqlain	67	9

Table 2

Shops	Number of toys sold	Price per toy
Shop 1	(1, 4, 6, 9)	7
Shop 2	(5, 6, 7, 7)	5
Shop 3	(2, 3, 4, 8)	3
Shop 4	(3, 4, 4, 5)	11
Shop 5	(3, 5, 5, 7)	9

Further, it was also known that:
(i) No friend bought any toy from any shop other than the five shops mentioned in Table 2 and no shop sold any toys to any person other than the 10 persons mentioned in Table 1.
(ii) Each shop sold the toys to exactly four of the 10 friends (number of toys sold to each of those four friends is shown separately in the parenthesis in Table 2) and each friend bought toys from exactly two of the given 5 shops.

Q.53
How many of the given 10 friends spent at least Rs. 30 (on buying toys) in each of the two shops from where they bought the toys?

Solution:
Correct Answer : 3

Bookmark

Answer key/Solution

Lets first start with Sachin:-
Sachin bought 11 toys, for which possible combinations are (2 + 9), (3 + 8), (4 + 7) and (5 + 6).
Now, let's calculate the prices,
2(shop3) + 9(shop1) = 2 × 3 + 9 × 7 ≠ 75.
Similarly,
3(shop4) + 8(shop3) = 3 × 11 + 8 × 3 = 33 + 24 ≠ 75.
Further, you will find, 4(shop3) + 7(shop5) = 4 × 3 + 7 × 9 = 12 + 63 = 75.
and, 6(shop2) + 5(shop5) = 6 × 5 + 5 × 9 = 75.
This gives us two cases.
Case I:

Name	First transaction	Second transaction
Sachin	4 toys from shop3	7 toys from shop5

Case II:

Name	First transaction	Second transaction
Sachin	6 toys from shop2	5 toys from shop5

Now, similarly, interpret the data for others, you will observe in case I, that,
when you reach Shahid you will observe that Shahid bought 13 toys but in table 2, only 4 values will be left unassigned.

By interpreting all the data correctly we can arrive at the following table:

Shop 1	6	7
Shop 2	5, 6	5
Shop 5	5	9

In these unassigned values, no combination is equal to 13.
So case I is not possible.
Now for case 2:
So, final table on which we can arrive is:

Name	First Transaction	Second Transaction
Sachin	6 toys, Shop 2(Rs.30)	5 toys, Shop 5 (Rs.45)
Sehw ag	3 toys, Shop 3 (Rs.9)	4 toys, Shop 4 (Rs.44)
Steve	4 toys, Shop 1 (Rs.28)	4 toys, Shop 4 (Rs.44)
Shane	7 toys, Shop 2 (Rs.35)	3 toys, Shop 4 (Rs.33)
Sanath	2 toys, Shop 3 (Rs.6)	5 toys, Shop 5 (Rs.45)
Saeed	9 toys, Shop 1 (Rs.63)	8 toys, Shop 3 (Rs.24)
Saurav	1 toy, Shop 1 (Rs.7)	3 toys, Shop 5 (Rs.27)
Smith	5 toys, Shop 2 (Rs.25)	7 toys, Shop 5 (Rs.63)
Shahid	6 toys, Shop 1 (Rs.42)	7 toys, Shop 2 (Rs.35)
Saqlain	4 toys, Shop 3 (Rs.12)	5 toys, Shop 4 (Rs.55)

Sachin, Shane and Shahid spent at least Rs. 30 on both the shops from where they purchased toys.

FeedBack

Directions for questions 51 to 54: Answer the questions on the basis of the information given below.

Table 1 below shows the number of toys bought by each of the 10 friends and the total amount (in Rs.) spent by them in buying the toys. Table 2 shows the number of toys sold by each of the five shops to the friends and the price (in Rs.) of each toy at which the respective shop sold all of its toys.

Table 1

Friends	Amount	Number of toys bought
Sachin	75	11
Sehwag	53	7
Steve	72	8
Shane	68	10
Sanath	51	7
Saeed	87	17
Saurav	34	4
Smith	88	12
Shahid	77	13
Saqlain	67	9

Table 2

Shops	Number of toys sold	Price per toy
Shop 1	(1, 4, 6, 9)	7
Shop 2	(5, 6, 7, 7)	5
Shop 3	(2, 3, 4, 8)	3
Shop 4	(3, 4, 4, 5)	11
Shop 5	(3, 5, 5, 7)	9

Further, it was also known that:
(i) No friend bought any toy from any shop other than the five shops mentioned in Table 2 and no shop sold any toys to any person other than the 10 persons mentioned in Table 1.
(ii) Each shop sold the toys to exactly four of the 10 friends (number of toys sold to each of those four friends is shown separately in the parenthesis in Table 2) and each friend bought toys from exactly two of the given 5 shops.

Q.54

How many pairs of friends are possible in which both the friends had bought the toys from the same two shops?

1 **0**

2 **1**

3 **2**

4 **3**

Solution:
Correct Answer : 3

Bookmark

Answer key/Solution

Lets first start with Sachin:-
Sachin bought 11 toys, for which possible combinations are (2 + 9), (3 + 8), (4 + 7) and (5 + 6).
Now, let's calculate the prices,
2(shop3) + 9(shop1) = 2 × 3 + 9 × 7 ≠ 75.
Similarly,
3(shop4) + 8(shop3) = 3 × 11 + 8 × 3 = 33 + 24 ≠ 75.
Further, you will find, 4(shop3) + 7(shop5) = 4 × 3 + 7 × 9 = 12 + 63 = 75.
and, 6(shop2) + 5(shop5) = 6 × 5 + 5 × 9 = 75.
This gives us two cases.
Case I:

Name	First transaction	Second transaction
Sachin	4 toys from shop3	7 toys from shop5

Case II:

Name	First transaction	Second transaction
Sachin	6 toys from shop2	5 toys from shop5

Now, similarly, interpret the data for others, you will observe in case I, that,
when you reach Shahid you will observe that Shahid bought 13 toys but in table 2, only 4 values will be left unassigned.

By interpreting all the data correctly we can arrive at the following table:

Shop 1	6	7
Shop 2	5, 6	5
Shop 5	5	9

In these unassigned values, no combination is equal to 13.
So case I is not possible.
Now for case 2:
So, final table on which we can arrive is:

Name	First Transaction	Second Transaction
Sachin	6 toys, Shop 2(Rs.30)	5 toys, Shop 5 (Rs.45)
Sehw ag	3 toys, Shop 3 (Rs.9)	4 toys, Shop 4 (Rs.44)
Steve	4 toys, Shop 1 (Rs.28)	4 toys, Shop 4 (Rs.44)
Shane	7 toys, Shop 2 (Rs.35)	3 toys, Shop 4 (Rs.33)
Sanath	2 toys, Shop 3 (Rs.6)	5 toys, Shop 5 (Rs.45)
Saeed	9 toys, Shop 1 (Rs.63)	8 toys, Shop 3 (Rs.24)
Saurav	1 toy, Shop 1 (Rs.7)	3 toys, Shop 5 (Rs.27)
Smith	5 toys, Shop 2 (Rs.25)	7 toys, Shop 5 (Rs.63)
Shahid	6 toys, Shop 1 (Rs.42)	7 toys, Shop 2 (Rs.35)
Saqlain	4 toys, Shop 3 (Rs.12)	5 toys, Shop 4 (Rs.55)

Correct answer is 2 (One pair – Sachin and Smith, Second pair – Sehwag and Saqlain).

FeedBack

Directions for questions 55 to 58: Answer the questions on the basis of the information given below.

A faculty of "CL Educate" was asked to rate seven students coming from different places to check if they are eligible to join their special batch. For this the faculty, decided to take viva of these 7 students who all were from 7 different states- A, B, C, D, E, F and G. Also to avoid any kind of favoritism , each student was assigned a different roll number from 1 to 7, in any order. Then the faculty rated these students, on a scale of 1-10, according to their performances in the viva, where '10' considered as the highest rating and '1' being the lowest one. He gave a unique rating number to each student.

Further, the following information is also known.
(i) Student with roll number 4 belongs to state F.
(ii) Student from state C got the highest rating and it is an even number.
(iii) The rating got by the student with roll number 1 is double that of the student with roll number 6.
(iv) Only two students got even numbered rating and the rating of the student from state A is 5 more than the rating of the student whose roll number is 3.
(v) Student with roll number 2 got the lowest rating but is not from state A.
(vi) Student with roll number 7 got a higher rating than the student with roll number 5 but a lower rating than the student with roll number 1.
(vii) The rating of the student from state F is more than that of the student from state G and less than that of the student from state E and none of these three got an even numbered rating.
(viii) Student with roll number 6 belongs to state B.

Q.55
If the ratings got by all the seven students are arranged in ascending order, then what is the minimum possible second number in that list?

1 **2**

2 **4**

3 **3**

4 **None of these**

Solution:
Correct Answer : 1

Bookmark

Answer key/Solution

By statement (i), student with the roll number 4 belongs to F.
By statement (iv), only two students got even ratings and since there are 7 students, therefore, 5 of them got odd ratings i.e., 1, 3, 5, 7, 9.
By statement (ii), student from state C got the highest rating that has to be 10, since it is even.
By statement (v), student with roll number 2, got the lowest rating, i.e., 1.

Roll no.	State	Rating
1		
2		1
3		
4	F	
5		
6	B	
7		

By statement (iii) rating of the student (with roll number 1) = 2 × rating of the student (with roll number 5)
∴ Possible combinations are (6, 3), (10, 5).
(both cannot be even, like (4, 2), (8, 4) because a student must had rating of 10 and only two students in total have even

(both cannot be even, like (4, 2), (6, 4) because a student must had rating of 10 and only two students in total have even ratings).
Case I : (roll number 1 rating, roll number 5 rating) = (6, 3), then it will contradict statement (iv),
as rating (roll number 1) > rating (roll number 7) > rating (roll number 5)
therefore, rating of roll number 7 has to be 5.
and then roll number 3 will have rating of 10.
but it will contradict statement (iv) as rating of student (from state A) = 5 + rating of student (roll number 3).
Therefore, (roll number 1 rating, roll number 5 rating) = (10, 5) and so student with roll number 1 belongs to state C.

Roll no.	State	Rating
1	C	10
2		1
3		
4	F	
5		
6	B	5
7		

Now, by statement (iv), rating of student (state A) = 5 + rating of student (roll no. 3)
therefore possible combinations are (7, 2), (8, 3), (9, 4)
Subcase I : (7, 2)
Let rating of the students from state E, F and G be e, f and g respectively, then by statement (vii), e > f > g, and all of them are odd.
f can be only 3, then g will be 1 and then e will be 9, and rating of student from state A is 7 (Given) and since rating of student with roll number 7 is greater than that of student with roll number 5, therefore
Table :

1	C	10
2	G	1
3	D	2
4	F	3
5	A	7
6	B	5
7	E	9

Subcase II : (8, 3)
Again e > f > g, therefore f will be 7, e will be 9 and g could be 1 or 3.

Roll no.	State	Rating
1	C	10
2	D/G	1
3	G/D	3
4	F	7
5	A	8
6	B	5
7	E	9

Case III : (9, 4)

Roll no.	State	Rating
1	C	10
2	G	1
3	D	4
4	F	3
5	E	7
6	B	5
7	A	9

Minimum possible second number is 2 i.e, in subcase 1.

FeedBack

Directions for questions 55 to 58: Answer the questions on the basis of the information given below.

A faculty of "CL Educate" was asked to rate seven students coming from different places to check if they are eligible to join their special batch. For this the faculty, decided to take viva of these 7 students who all were from 7 different states- A, B, C, D, E, F and G. Also to avoid any kind of favoritism , each student was assigned a different roll number from 1 to 7, in any order. Then the faculty rated these students, on a scale of 1-10, according to their performances in the viva, where '10' considered as the highest rating and '1' being the lowest one. He gave a unique rating number to each student.

Further, the following information is also known.
(i) Student with roll number 4 belongs to state F.
(ii) Student from state C got the highest rating and it is an even number.
(iii) The rating got by the student with roll number 1 is double that of the student with roll number 6.
(iv) Only two students got even numbered rating and the rating of the student from state A is 5 more than the rating of the student whose roll number is 3.
(v) Student with roll number 2 got the lowest rating but is not from state A.
(vi) Student with roll number 7 got a higher rating than the student with roll number 5 but a lower rating than the student with roll number 1.
(vii) The rating of the student from state F is more than that of the student from state G and less than that of the student from state E and none of these three got an even numbered rating.
(viii) Student with roll number 6 belongs to state B.

Q.56
What is the maximum possible sum of the ratings got by all the students?

Solution:
Correct Answer : 43

Bookmark

Answer key/Solution

By statement (i), student with the roll number 4 belongs to F.
By statement (iv), only two students got even ratings and since there are 7 students, therefore, 5 of them got odd ratings i.e., 1, 3, 5, 7, 9.
By statement (ii), student from state C got the highest rating that has to be 10, since it is even.
By statement (v), student with roll number 2, got the lowest rating, i.e., 1.

Roll no.	State	Rating
1		
2		1
3		
4	F	
5		
6	B	
7		

By statement (iii) rating of the student (with roll number 1) = 2 × rating of the student (with roll number 5)
∴ Possible combinations are (6, 3), (10, 5).
(both cannot be even, like (4, 2), (8, 4) because a student must had rating of 10 and only two students in total have even ratings).
Case I : (roll number 1 rating, roll number 5 rating) = (6, 3), then it will contradict statement (iv),
as rating (roll number 1) > rating (roll number 7) > rating (roll number 5)
therefore, rating of roll number 7 has to be 5.
and then roll number 3 will have rating of 10.
but it will contradict statement (iv) as rating of student (from state A) = 5 + rating of student (roll number 3).
Therefore, (roll number 1 rating, roll number 5 rating) = (10, 5) and so student with roll number 1 belongs to state C.

Roll no.	State	Rating
1	C	10
2		1

3		
4	F	
5		
6	B	5
7		

Now, by statement (iv), rating of student (state A) = 5 + rating of student (roll no. 3)
therefore possible combinations are (7, 2), (8, 3), (9, 4)
Subcase I : (7, 2)
Let rating of the students from state E, F and G be e, f and g respectively, then by statement (vii), e > f > g, and all of them are odd.
f can be only 3, then g will be 1 and then e will be 9, and rating of student from state A is 7 (Given) and since rating of student with roll number 7 is greater than that of student with roll number 5, therefore
Table :

1	C	10
2	G	1
3	D	2
4	F	3
5	A	7
6	B	5
7	E	9

Subcase II : (8, 3)
Again e > f > g, therefore f will be 7, e will be 9 and g could be 1 or 3.

Roll no.	State	Rating
1	C	10
2	D/G	1
3	G/D	3
4	F	7
5	A	8
6	B	5
7	E	9

Case III : (9, 4)

Roll no.	State	Rating
1	C	10
2	G	1
3	D	4
4	F	3
5	E	7
6	B	5
7	A	9

Maximum possible sum can be found from case 2 i.e, 43.

FeedBack

Directions for questions 55 to 58: Answer the questions on the basis of the information given below.

A faculty of "CL Educate" was asked to rate seven students coming from different places to check if they are eligible to join their special batch. For this the faculty, decided to take viva of these 7 students who all were from 7 different states- A, B, C, D, E, F and G. Also to avoid any kind of favoritism , each student was assigned a different roll number from 1 to 7, in any order. Then the faculty rated these students, on a scale of 1-10, according to their performances in the viva, where '10' considered as the highest rating and '1' being the lowest one. He gave a unique rating number to each student.

Further, the following information is also known.
(i) Student with roll number 4 belongs to state F.
(ii) Student from state C got the highest rating and it is an even number.
(iii) The rating got by the student with roll number 1 is double that of the student with roll number 6.
(iv) Only two students got even numbered rating and the rating of the student from state A is 5 more than the rating of the student whose roll number is 3.
(v) Student with roll number 2 got the lowest rating but is not from state A.
(vi) Student with roll number 7 got a higher rating than the student with roll number 5 but a lower rating than the student with roll number 1.
(vii) The rating of the student from state F is more than that of the student from state G and less than that of the student from state E and none of these three got an even numbered rating.
(viii) Student with roll number 6 belongs to state B.

Q.57

If the rating of the student from state D is 2, then what is the absolute difference between the ratings of the students who belong to state G and state A?

Solution:
Correct Answer : 6

Bookmark

Answer key/Solution

By statement (i), student with the roll number 4 belongs to F.
By statement (iv), only two students got even ratings and since there are 7 students, therefore, 5 of them got odd ratings i.e., 1, 3, 5, 7, 9.
By statement (ii), student from state C got the highest rating that has to be 10, since it is even.
By statement (v), student with roll number 2, got the lowest rating, i.e., 1.

Roll no.	State	Rating
1		
2		1
3		
4	F	
5		
6	B	
7		

By statement (iii) rating of the student (with roll number 1) = 2 × rating of the student (with roll number 5)
∴ Possible combinations are (6, 3), (10, 5).
(both cannot be even, like (4, 2), (8, 4) because a student must had rating of 10 and only two students in total have even ratings).
Case I : (roll number 1 rating, roll number 5 rating) = (6, 3), then it will contradict statement (iv),
as rating (roll number 1) > rating (roll number 7) > rating (roll number 5)
therefore, rating of roll number 7 has to be 5.
and then roll number 3 will have rating of 10.
but it will contradict statement (iv) as rating of student (from state A) = 5 + rating of student (roll number 3).
Therefore, (roll number 1 rating, roll number 5 rating) = (10, 5) and so student with roll number 1 belongs to state C.

Roll no.	State	Rating
1	C	10

2		1
3		
4	F	
5		
6	B	5
7		

Now, by statement (iv), rating of student (state A) = 5 + rating of student (roll no. 3)
therefore possible combinations are (7, 2), (8, 3), (9, 4)
Subcase I : (7, 2)
Let rating of the students from state E, F and G be e, f and g respectively, then by statement (vii), e > f > g, and all of them are odd.
f can be only 3, then g will be 1 and then e will be 9, and rating of student from state A is 7 (Given) and since rating of student with roll number 7 is greater than that of student with roll number 5, therefore
Table :

1	C	10
2	G	1
3	D	2
4	F	3
5	A	7
6	B	5
7	E	9

Subcase II : (8, 3)
Again e > f > g, therefore f will be 7, e will be 9 and g could be 1 or 3.

Roll no.	State	Rating
1	C	10
2	D/G	1
3	G/D	3
4	F	7
5	A	8
6	B	5
7	E	9

Case III : (9, 4)

Roll no.	State	Rating
1	C	10
2	G	1
3	D	4
4	F	3
5	E	7
6	B	5
7	A	9

Question is asking about case 1, required difference = 7 - 1 = 6

FeedBack

Directions for questions 55 to 58: Answer the questions on the basis of the information given below.

A faculty of "CL Educate" was asked to rate seven students coming from different places to check if they are eligible to join their special batch. For this the faculty, decided to take viva of these 7 students who all were from 7 different states- A, B, C, D, E, F and G. Also to avoid any kind of favoritism , each student was assigned a different roll number from 1 to 7, in any order. Then the faculty rated these students, on a scale of 1-10, according to their performances in the viva, where '10' considered as the highest rating and '1' being the lowest one. He gave a unique rating number to each student.

Further, the following information is also known.
(i) Student with roll number 4 belongs to state F.
(ii) Student from state C got the highest rating and it is an even number.
(iii) The rating got by the student with roll number 1 is double that of the student with roll number 6.
(iv) Only two students got even numbered rating and the rating of the student from state A is 5 more than the rating of the student whose roll number is 3.
(v) Student with roll number 2 got the lowest rating but is not from state A.
(vi) Student with roll number 7 got a higher rating than the student with roll number 5 but a lower rating than the student with roll number 1.
(vii) The rating of the student from state F is more than that of the student from state G and less than that of the student from state E and none of these three got an even numbered rating.
(viii) Student with roll number 6 belongs to state B.

Q.58
If the rating of the student from state G is 3, then the sum of the ratings of the those who got even numbered ratings is,

Solution:
Correct Answer : 18

Bookmark

Answer key/Solution

By statement (i), student with the roll number 4 belongs to F.
By statement (iv), only two students got even ratings and since there are 7 students, therefore, 5 of them got odd ratings i.e., 1, 3, 5, 7, 9.
By statement (ii), student from state C got the highest rating that has to be 10, since it is even.
By statement (v), student with roll number 2, got the lowest rating, i.e., 1.

Roll no.	State	Rating
1		
2		1
3		
4	F	
5		
6	B	
7		

By statement (iii) rating of the student (with roll number 1) = 2 × rating of the student (with roll number 5)
∴ Possible combinations are (6, 3), (10, 5).
(both cannot be even, like (4, 2), (8, 4) because a student must had rating of 10 and only two students in total have even ratings).
Case I : (roll number 1 rating, roll number 5 rating) = (6, 3), then it will contradict statement (iv),
as rating (roll number 1) > rating (roll number 7) > rating (roll number 5)
therefore, rating of roll number 7 has to be 5.
and then roll number 3 will have rating of 10.
but it will contradict statement (iv) as rating of student (from state A) = 5 + rating of student (roll number 3).
Therefore, (roll number 1 rating, roll number 5 rating) = (10, 5) and so student with roll number 1 belongs to state C.

Roll no.	State	Rating
1	C	10

2		1
3		
4	F	
5		
6	B	5
7		

Now, by statement (iv), rating of student (state A) = 5 + rating of student (roll no. 3)
therefore possible combinations are (7, 2), (8, 3), (9, 4)
Subcase I : (7, 2)
Let rating of the students from state E, F and G be e, f and g respectively, then by statement (vii), e > f > g, and all of them are odd.
f can be only 3, then g will be 1 and then e will be 9, and rating of student from state A is 7 (Given) and since rating of student with roll number 7 is greater than that of student with roll number 5, therefore
Table :

1	C	10
2	G	1
3	D	2
4	F	3
5	A	7
6	B	5
7	E	9

Subcase II : (8, 3)
Again e > f > g, therefore f will be 7, e will be 9 and g could be 1 or 3.

Roll no.	State	Rating
1	C	10
2	D/G	1
3	G/D	3
4	F	7
5	A	8
6	B	5
7	E	9

Case III : (9, 4)

Roll no.	State	Rating
1	C	10
2	G	1
3	D	4
4	F	3
5	E	7
6	B	5
7	A	9

Rating of student from state G is 3 in case 2.
The required sum = 10 + 8 = 18.

FeedBack

Directions for questions 59 to 62: Answer the questions on the basis of the information given below.

A survey was conducted among 100 persons of a village in Haryana, about the cell phone(s) they have ordered from an online website. Each person has ordered at least one of the three phones among iPhone X, MI note 5 and One Plus 6. When they were asked about the phone they had ordered, the following results were observed by the survey conducting body:
• The number of persons who ordered iPhone X is more than the number of those who ordered Mi note 5, which in turn is more than the number of those who ordered OnePlus 6.
• Number of those who ordered OnePlus 6 is more than the number of those who ordered exactly two of these phones, which in turn is more than the number of those who ordered all the three.

Q.59
If the number of persons who ordered iPhone X is minimum possible, then find number of persons who ordered Mi note 5 phones.

1 **34**

2 **36**

3 **35**

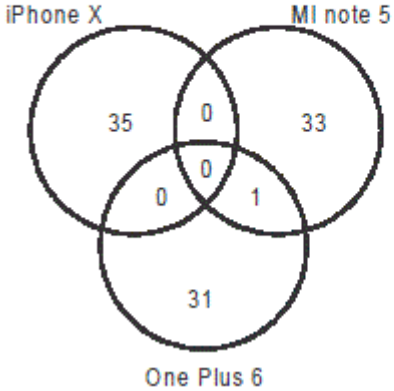
4 **33**

Solution:
Correct Answer : 1

Bookmark

Answer key/Solution

To minimize the number of those who ordered iPhone X, which is maximum out of all three phones, we have to minimize all the three regions i.e.(two of the exactly two liked regions and the region representing all three liked phones) distributing the remaining in 3 parts as equal as possible.
And it can be done in a way, that is shown in below venn diagram. So, number of persons who ordered for MI-5 in this scenario = 33 + 0 + 1 + 0 = 34.



FeedBack

Directions for questions 59 to 62: Answer the questions on the basis of the information given below.

A survey was conducted among 100 persons of a village in Haryana, about the cell phone(s) they have ordered from an online website. Each person has ordered at least one of the three phones among iPhone X, MI note 5 and One Plus 6. When they were asked about the phone they had ordered, the following results were observed by the survey conducting body:
• The number of persons who ordered iPhone X is more than the number of those who ordered Mi note 5, which in turn is more than the number of those who ordered OnePlus 6.
• Number of those who ordered OnePlus 6 is more than the number of those who ordered exactly two of these phones, which in turn is more than the number of those who ordered all the three.

Q.60
Find the maximum number of persons who ordered One Plus 6.

1 **79**

2 **80**

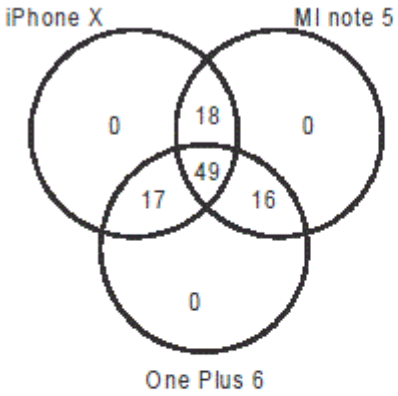
3 **82**

4 **81**

Solution:
Correct Answer : 3

Bookmark

Answer key/Solution



Here, we need to maximize number of persons who ordered One Plus 6 with the constraints given in the question.
Since, number of persons who ordered iPhone X is more than MI-5 which is more than those who ordered One Plus 6, it can be done by only comparing exactly two and all the three, as both come under individual categories.
Now we can't take more or equal to 50 in all three region, as it will contradict the given constraints.
So, first we'll assign 49 persons for all the three and then remaining 51 can be distributed in exactly 2 regions in a way shown in venn diagram.
So, required persons = 17 + 49 + 16 = 82.

FeedBack

Directions for questions 59 to 62: Answer the questions on the basis of the information given below.

A survey was conducted among 100 persons of a village in Haryana, about the cell phone(s) they have ordered from an online website. Each person has ordered at least one of the three phones among iPhone X, MI note 5 and One Plus 6. When they were asked about the phone they had ordered, the following results were observed by the survey conducting body:
• The number of persons who ordered iPhone X is more than the number of those who ordered Mi note 5, which in turn is more than the number of those who ordered OnePlus 6.
• Number of those who ordered OnePlus 6 is more than the number of those who ordered exactly two of these phones, which in turn is more than the number of those who ordered all the three.

Q.61
What can be the maximum number of person who ordered only MI note 5?

1 **48**

2 **49**

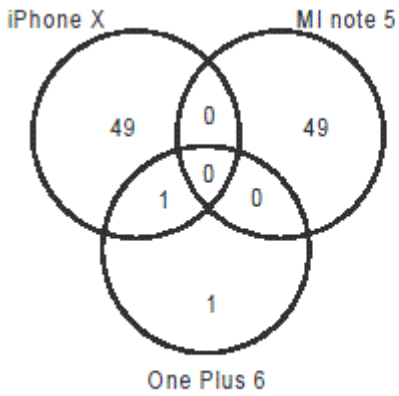
3 **50**

4 **33**

Solution:
Correct Answer : 2

Bookmark

Answer key/Solution



To find the maximum number of persons who ordered only MI note 5, we have to maximize iPhone X (as well, along with MI-5, as per the constraints. This is possible in way, shown in venn diagram.

FeedBack

Directions for questions 59 to 62: Answer the questions on the basis of the information given below.

A survey was conducted among 100 persons of a village in Haryana, about the cell phone(s) they have ordered from an online website. Each person has ordered at least one of the three phones among iPhone X, MI note 5 and One Plus 6. When they were asked about the phone they had ordered, the following results were observed by the survey conducting body:
• The number of persons who ordered iPhone X is more than the number of those who ordered Mi note 5, which in turn is more than the number of those who ordered OnePlus 6.
• Number of those who ordered OnePlus 6 is more than the number of those who ordered exactly two of these phones, which in turn is more than the number of those who ordered all the three.

Q.62
Find the maximum number of persons who ordered for MI note 5 and One Plus 6 but not iPhone X.

1 **47**

2 **48**

3 **49**

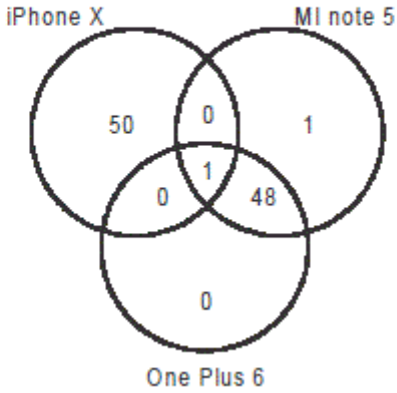
4 **50**

Solution:
Correct Answer : 2

Bookmark

Answer key/Solution

From the discussion of above 3 questions, the following venn diagram can be understood. As we have to maximize MI note 5 and One plus 6, so we'll give 48 in MI note 5 and One plus 6, and 1 to all 3. This way 52 to iPhone X and 50 to MI & 49 to One plus will be assigned, which is according to the constraints.



FeedBack

Directions for questions 63 to 66: Answer the questions on the basis of the information given below.

Five friends – A,B, C, D and E – went to a musical event on 15th August. In the event, there was a game namely ANTAKSHRI, in which all the five friends participated. This game had exactly two rounds and in each round the participants were awarded some points following the rules of the game. At the end of this game it was observed that each of the five friends scored different number of points – 10,15,17,19 and 27 – not necessarily in this order.

The rules of the game were as follows:
1. First, a song would be played for a contestant and then that contestant had to guess the name of the movie for which the played song belong to. If the contestant answered correctly, then he was awarded 10 points.
2. If a contestant was not able to tell the name of the movie, then the same song would passed on to the next contestant. Now if that contestant answered it correctly, he was awarded with the points 1 less than the points his previous contestant would have been awarded.
For example, if B answered the name of the movie, asked to A, correctly then B would get 9 points. But if he also failed to name the movie then the same movie passed on further to the next contestant for 8 points and so on till all the contestants fails to guess the right answer.

Further information known to us:
• A, B, C, D and E played in that order only.
• E guessed movie names for three consecutive songs correctly.
• C was able to guess the correct movie name only once.
• B's final score is more than that of D's final score.

Q.63
If in round 1, A did not answer the correct movie name even for once, then which of the following can be the final score of B?

1 **27**

2 **19**

3 **15**

4 **10**

Solution:
Correct Answer : 2

Bookmark

Answer key/Solution

We understand from the information that E would have the highest score as he answered three movie names correctly in a consecutive order.
As the minimum score from answering three consecutive correct movie name is (6 + 7 + 8) = 21.
So E would have scored 27 points by scoring points (8 + 9 + 10).
From the 3rd bullet point, we can relate that C would have answered only one question correctly and scored 10 points.
Further B's score > D's score.

In round 1, A did not answer the correct movie name even for once, and since E's and C's score are definitely 27 and 10 respectively, therefore, score of B has to be either 17 or 19.

FeedBack

Directions for questions 63 to 66: Answer the questions on the basis of the information given below.

Five friends – A,B, C, D and E – went to a musical event on 15th August. In the event, there was a game namely ANTAKSHRI, in which all the five friends participated. This game had exactly two rounds and in each round the participants were awarded some points following the rules of the game. At the end of this game it was observed that each of the five friends scored different number of points – 10,15,17,19 and 27 – not necessarily in this order.

The rules of the game were as follows:
1. First, a song would be played for a contestant and then that contestant had to guess the name of the movie for which the played song belong to. If the contestant answered correctly, then he was awarded 10 points.
2. If a contestant was not able to tell the name of the movie, then the same song would passed on to the next contestant. Now if that contestant answered it correctly, he was awarded with the points 1 less than the points his previous contestant would have been awarded.
For example, if B answered the name of the movie, asked to A, correctly then B would get 9 points. But if he also failed to name the movie then the same movie passed on further to the next contestant for 8 points and so on till all the contestants fails to guess the right answer.

Further information known to us:
• A, B, C, D and E played in that order only.
• E guessed movie names for three consecutive songs correctly.
• C was able to guess the correct movie name only once.
• B's final score is more than that of D's final score.

Q.64
If the movie of 4th song played for D to guess was correctly identified by him, then how many different scores for E was possible?

1 **0**

2 **1**

3 **2**

4 **Cannot be determined.**

Solution:
Correct Answer : 2

Bookmark

Answer key/Solution

We understand from the information that E would have the highest score as he answered three movie names correctly in a consecutive order.
As the minimum score from answering three consecutive correct movie name is (6 + 7 + 8) = 21.
So E would have scored 27 points by scoring points (8 + 9 + 10).
From the 3rd bullet point, we can relate that C would have answered only one question correctly and scored 10 points.
Further B's score > D's score.
If D was able to answer the 4^{th} song of his turn correctly then E must have answered the name of movies for 8^{th}, 9^{th} and 10^{th} song correctly, which can be done only in one way.

FeedBack

Directions for questions 63 to 66: Answer the questions on the basis of the information given below.

Five friends – A,B, C, D and E – went to a musical event on 15th August. In the event, there was a game namely ANTAKSHRI, in which all the five friends participated. This game had exactly two rounds and in each round the participants were awarded some points following the rules of the game. At the end of this game it was observed that each of the five friends scored different number of points – 10,15,17,19 and 27 – not necessarily in this order.

The rules of the game were as follows:
1. First, a song would be played for a contestant and then that contestant had to guess the name of the movie for which the played song belong to. If the contestant answered correctly, then he was awarded 10 points.
2. If a contestant was not able to tell the name of the movie, then the same song would passed on to the next contestant. Now if that contestant answered it correctly, he was awarded with the points 1 less than the points his previous contestant would have been awarded.
For example, if B answered the name of the movie, asked to A, correctly then B would get 9 points. But if he also failed to name the movie then the same movie passed on further to the next contestant for 8 points and so on till all the contestants fails to guess the right answer.

Further information known to us:
• A, B, C, D and E played in that order only.
• E guessed movie names for three consecutive songs correctly.
• C was able to guess the correct movie name only once.
• B's final score is more than that of D's final score.

Q.65
If A answered one of the songs asked to B correctly, then which of the following could be the final score of A?

1 **17**

2 **19**

3 **15**

4 **10**

Solution:
Correct Answer : 3

Bookmark

Answer key/Solution

We understand from the information that E would have the highest score as he answered three movie names correctly in a consecutive order.
As the minimum score from answering three consecutive correct movie name is (6 + 7 + 8) = 21.
So E would have scored 27 points by scoring points (8 + 9 + 10).
From the 3rd bullet point, we can relate that C would have answered only one question correctly and scored 10 points.
Further B's score > D's score.

If A answered one of the songs asked to B correctly then A will get 6 points from that. Then the maximum A can score is 16 points else less than that. Therefore, A will get 15 points.

FeedBack

Directions for questions 63 to 66: Answer the questions on the basis of the information given below.

Five friends – A,B, C, D and E – went to a musical event on 15th August. In the event, there was a game namely ANTAKSHRI, in which all the five friends participated. This game had exactly two rounds and in each round the participants were awarded some points following the rules of the game. At the end of this game it was observed that each of the five friends scored different number of points – 10,15,17,19 and 27 – not necessarily in this order.

The rules of the game were as follows:
1. First, a song would be played for a contestant and then that contestant had to guess the name of the movie for which the played song belong to. If the contestant answered correctly, then he was awarded 10 points.
2. If a contestant was not able to tell the name of the movie, then the same song would passed on to the next contestant. Now if that contestant answered it correctly, he was awarded with the points 1 less than the points his previous contestant would have been awarded.
For example, if B answered the name of the movie, asked to A, correctly then B would get 9 points. But if he also failed to name the movie then the same movie passed on further to the next contestant for 8 points and so on till all the contestants fails to guess the right answer.

Further information known to us:
• A, B, C, D and E played in that order only.
• E guessed movie names for three consecutive songs correctly.
• C was able to guess the correct movie name only once.
• B's final score is more than that of D's final score.

Q.66
If A was able to tell the name of the movie asked to E, in the 1st round, correctly, then who definitely had the lowest score after the completion of 1st round?

1 **A**

2 **C**

3 **D**

4 **E**

Solution:
Correct Answer : 4

Bookmark

Answer key/Solution

We understand from the information that E would have the highest score as he answered three movie names correctly in a consecutive order.
As the minimum score from answering three consecutive correct movie name is (6 + 7 + 8) = 21.
So E would have scored 27 points by scoring points (8 + 9 + 10).
From the 3rd bullet point, we can relate that C would have answered only one question correctly and scored 10 points.
Further B's score > D's score.
By answering the name of the movie A will score 9 points and also E cannot score 10 points in that round. Hence, E will score his 27 points completely in 2nd round. So E with score of '0' will have the minimum points after 1st round.

FeedBack

Sec 3

Q.67

If the product of 4 positive integers is 8!, then which of the following is the minimum possible value of the sum of these 4 integers?

1 **57**

2 **60**

3 **64**

4 **66**

Solution:

Correct Answer : 1

$8! = a \times b \times c \times d$ such that $(a + b + c + d)$ is minimum.
Therefore a, b, c and d should be as close to each other as possible
Also, $8! = 2^7 \times 3^2 \times 5 \times 7 = 16 \times 18 \times 10 \times 14$
Sum = 58
Also, $2^7 \times 3^2 \times 5 \times 7 = 12 \times 14 \times 15 \times 16$
Sum = 57
No smaller value than this is possible.

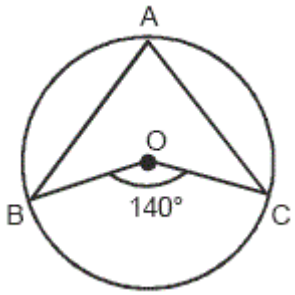
FeedBack

Bookmark

Answer key/Solution

Q.68

In the figure shown below, O is the center of the circle and ∠ABO = 30°. Find measure of ∠ACO (in degrees).



Solution:
Correct Answer : 40

Bookmark

Answer key/Solution

Angle subtended by two points on the arc is half the angle subtended by these two points on the center of circle.
i.e.,
$\angle BOC = 2\ \angle BAC$

angle BAC = $\frac{1}{2} \times 140 = 70°$

ABOC is a quadrilateral
$\therefore \angle ABO + \angle ACO + \angle BAC + \text{reflex } (\angle BOC) = 360°$
$30° + \therefore \angle ACO + 70° + 360° - 140° = 360°$
$\therefore \angle ACO = 40°$

FeedBack

Q.69
A circle is inscribed in an equilateral triangle. If the area of the triangle is $9\sqrt{3}$ sq units, then find the area of the circle.

1 **9 π**

2 **3 π**

3 **4 π**

4 **6 π**

Solution:
Correct Answer : 2

Bookmark

Answer key/Solution

Area of an equilateral triangle with side 'a' = $\frac{\sqrt{3}}{4}a^2$

So, $\frac{\sqrt{3}}{4}a^2 = 9\sqrt{3}$
This implies, a = 6
Now, Inradius of an equilateral triangle = $\frac{a}{2\sqrt{3}}$

i.e., $r = \frac{6}{2 \times \sqrt{3}} = \sqrt{3}$

Therefore, area of the circle = $\pi \times (\sqrt{3})^2 = 3\pi$.

FeedBack

Q.70
A fruit seller, selling apples, is offering 16.67% of their weight, as extra, for free. Find the percentage discount on this offer.

1 **16.67%**

2 **14.28%**

3 **12.5%**

4 **8.33%**

Solution:
Correct Answer : 2

Bookmark

Answer key/Solution

As 16.67% is equivalent to $\frac{1}{6}$, let us take weight and price of apples originally as 6units in Rs.6. As it is given 1/6th of the total as free, so he is giving 1unit on 6 unit for free. So a discount of 1 unit is given on 7units.

Therefore, required percentage = $\frac{1}{7} \times 100 = 14.28\%$

FeedBack

Q.71
If a + b + c = 33, then find the value of (a, b, c) such that (a + b) : (b + c) : (c + a) = 5 : 7 : 10.

1 **(3,12,18)**

2 **(12,18,3)**

3 **(12,3,18)**

4 **None of these**

Solution:
Correct Answer : 3

Let a + b = 5k, b + c = 7k and c + a = 10k
So, a + b + c = 22k $\Rightarrow$ a + b + c = 11k.
As it is given that a + b + c = 33 $\Rightarrow$ k = 3.
Therefore, a + b = 15, b + c = 21 and c + a = 30.
On further solving, we get a = 12, b = 3, c = 18.

Bookmark

Answer key/Solution

FeedBack

Q.72
Let the two sides of a triangle be 1 unit and 1004 unit. If the third side of this triangle is also an integer, then what is the perimeter of that triangle?

1 **2008**

2 **2009**

3 **1005**

4 **Multiple answers possible**

Solution:

Correct Answer : 2

Let third side be x.
As in a triangle with sides a, b and c
$a - b < c < a + b$
$\Rightarrow 1004 - 1 < x < 1004 + 1$
$\Rightarrow 1003 < x < 1005$
$\Rightarrow x = 1004$ (as x has to be an integer)
Therefore, perimeter = (1 + 1004 + 1004) = 2009

FeedBack

Bookmark

Answer key/Solution

Q.73

Minimum value for the expression: $4\log_{10} x - \log_x\left(\frac{1}{1000}\right)$, where $x > 1$ is

1 **8**

2 **11/3**

3 **$4\sqrt{3}$**

4 **7**

Solution:

Correct Answer : 3

$$4\log_{10} x - \log_x\left(\frac{1}{1000}\right) = 4\log_{10} x - \frac{\log_{10} 10^{-3}}{\log_{10} x} = 4\log_{10} x + \frac{3}{\log_{10} x}$$

Using concept of AM > GM, $\frac{\log_{10} x + \frac{3}{\log_{10} x}}{2} \geq \sqrt{4\log_{10} x \times \frac{3}{\log_{10} x}}$

$$4\log_{10} x = \frac{3}{\log_{10} x} \geq 2\sqrt{12}$$

Therefore, the required least value $= 2\sqrt{12} = 4\sqrt{3}$

FeedBack

Bookmark

Answer key/Solution

Q.74

Raman and Manoj tried to solve a quadratic equation. Raman made a mistake while noting down the constant term and hence ended up with the roots (4, 3). Manoj made a mistake in writing down the coefficient of x and hence got the roots as (3, 2). What will be the exact roots of the actual quadratic equation?

1 **(6, 1)**

2 **(−3, −4)**

3 **(4, 3)**

4 **(5, 2)**

Solution:
Correct Answer : 1

Bookmark

Answer key/Solution

Let $ax^2 + bx + c = 0$ is a quadratic equation.
Then, sum of its roots = -b/a, and product of its roots = c/a

Since Raman made a mistake in noting down the constant term, so his product of roots will be wrong but his sum of roots will be correct.
Therefore, sum of actual roots is 4 + 3 = 7.
Manoj made a mistake in coefficient of 'x', so his sum of roots will be wrong but product of roots will be correct.
Hence, the product of roots is 3 × 2 = 6.
Therefore, the actual equation is $x^2 - 7x + 6 = 0$.
Also, roots of this equation are 6 and 1.

FeedBack

Q.75

If 9^n is not ending with 1, where n is a natural number, then the unit digit of $(2^n + 8^n)$ is

1 **8**

2 **0**

3 **2**

4 **both (1) and (3)**

Solution:
Correct Answer : 2

Bookmark

Answer key/Solution

9^n is not ending on 1, so it has to end with 9 because $9^1 = 9$, $9^2 = 81$ and so on.
i.e., when n is even 9^n ends with 1, so we need odd values for n.
Now 2 and 8 have cyclicity of 4, so n = 1, 3 will give the required answer. For both n, $(2^n + 8^n)$ ends with 0.

FeedBack

Q.76

Nishit bought some goods and sold them on discount in such a way that his profit percentage and discount percentage are equal. If the ratio of its cost price to marked price is 3:7, then find the profit percentage.

Solution:
Correct Answer : 40

Bookmark

Answer key/Solution

Let the CP be 3x and MP be 7x, as they are in ratio 3 : 7.
Also, as the profit and discount percentages are same, we can say that

$$3x\left(1+\frac{P}{100}\right)=7x\left(1-\frac{P}{100}\right)$$

On solving, we get P = 40%.

FeedBack

Q.77

Three friends A, B and C invested in a business with Rs.10000, Rs.15000 and Rs.25000 respectively. After 3 months, C withdraws Rs.5000 from his investment whereas A and B added Rs.10000 and Rs.5000 respectively. At the end of the year, the total profit in the business is Rs.4600. Find the share (in Rs.) of B in profit.

1 **1500**

2 **1400**

3 **1380**

4 **4600/3**

Solution:
Correct Answer : 1

Bookmark

Answer key/Solution

Investments done by the three is as follows:

A	B	C
10000	15000	25000
×3	×3	×3
30000	45000	75000
+ 20000 × 9 = 180000	+20000 × 9 = 180000	+180000

Ratio of their investments = 210000 : 225000 : 255000 = 14 : 15 : 17

So, share of B in profit is in ratio of his investment = $4600 \times \frac{15}{46} = 1500$

FeedBack

Q.78

Find the remainder when ($11^{13} - 13^{11}$) is divided by 143.

1 **141**

2 **2**

3 **13**

4 **15**

Solution:
Correct Answer : 1

Bookmark

Answer key/Solution

$$\text{Rem}\left(\frac{11^{13}-13^{11}}{143}\right) = \text{Rem}\left(\frac{11^{13}}{143}-\frac{13^{11}}{143}\right) = \text{Rem}\left(\frac{11^{12}}{13}-\frac{13^{10}}{11}\right) = \text{Rem}\left(\frac{11^{12}}{13}\right)-\text{Rem}\left(\frac{13^{10}}{11}\right) = \text{Rem}\left(\frac{1}{13}-\frac{1}{11}\right) = -2$$

Therefore, remainder = 143 – 2 = 141

FeedBack

Q.79

If $\sqrt{7\sqrt{7\sqrt{7}}}\ \ldots\infty = (16807)^y$, then find the value of y.

1 **1/4**

2 **1/5**

3 **1/6**

4 **1/8**

Solution:
Correct Answer : 2

Bookmark

Answer key/Solution

$7^{\frac{1}{2}} \times 7^{\frac{1}{4}} \times 7^{\frac{1}{8}} \times \ldots\ldots = 7^{\frac{1}{2}+\frac{1}{4}+\frac{1}{8}+\ldots\ldots} = 7^{\frac{\frac{1}{2}}{1-\frac{1}{2}}} = 7$

$\Rightarrow (16807)^{y} = (7)^{5y} = 7^{1} \Rightarrow y = \frac{1}{5}$

FeedBack

Q.80

If $f(x) = \frac{17|x|+61}{53|x|+79}$ is a real valued function, then which of the following can never be the value of f(x)?

1 **21/33**

2 **11/19**

3 **23/39**

4 **41/52**

Solution:
Correct Answer : 4

Bookmark

Answer key/Solution

Minimum value of $f(x) = \frac{17}{53}$, when x is a very large number.

Maximum value of $f(x) = \frac{61}{79}$, when $x = 0$

So, $\frac{17}{53}(=0.32) < f(x) \leq \frac{61}{79}(=0.77)$

Now option (a) $\frac{21}{33} = 0.63$; (b) $\frac{11}{19} = 0.57$; (c) $\frac{23}{39} = 0.59$; (d) $\frac{41}{52} = 0.78$

Only $\frac{41}{52}$ doesn't lie in the desired range of f(x).

FeedBack

Q.81

A man invested some amount in a scheme for three years. The rate of interest for 1st, 2nd and 3rd year was 7.14%, 7.69% and 30% respectively, compounded annually. If after 3 years he will receive a sum of Rs.2100 from that scheme, then what is the amount (in Rs.) he invested initially?

Solution:
Correct Answer : 1400

Bookmark

Answer key/Solution

Let his initial investment be Rs. x

So after getting interest for three years, final amount becomes = $x\left(1+\frac{1}{14}\right)\left(1+\frac{1}{13}\right)\left(1+\frac{3}{10}\right) = 2100$

(because 7.14% is equivalent to 1/14, 7.69% is equivalent to 1/13)
∴ Solving the above equation, we get x = Rs. 1400

FeedBack

Q.82
Two solutions, one having salt and water in ratio 3 : 7 and the other having sugar and water in ratio 3 : 1, are mixed in ratio 15 : 8. Find the ratio of salt and sugar in the final solution.

1 **4 : 3**

2 **3 : 4**

3 **2 : 3**

4 **3 : 2**

Solution:
Correct Answer : 2

Bookmark

Answer key/Solution

As the two solutions are mixed in ratio 15 : 8, we can also say they are mixed in ratio 30 : 16.
Now let us take 30 litres of 1st solution and 16 litres of 2nd solution.

So, salt from 1st solution = $\frac{3}{10}\times 30 = 9l$

and sugar from 2nd solution = $\frac{3}{4}\times 16 = 12l$

So, the required ratio = 9 : 12 = 3 : 4.

FeedBack

Q.83
Find the sum of all co-prime numbers of 350, which are less than 350.

Solution:
Correct Answer : 21000

Bookmark

Answer key/Solution

Number of co-prime numbers to 350 are

$$350\left(1-\frac{1}{2}\right)\left(1-\frac{1}{5}\right)\left(1-\frac{1}{7}\right) = 350\times\frac{1}{2}\times\frac{4}{5}\times\frac{6}{7}=120$$

(for any natural number $N = p^a \times q^b \times r^c$, numbers co-prime to N is given as $N\left(1-\frac{1}{p}\right)\left(1-\frac{1}{q}\right)\left(1-\frac{1}{r}\right)$)

Then, sum of all co-prime number = $\frac{120}{2}\times 350 = 21000$

(As sum of co-primes of N is given by (N × numbers co-prime to N) / 2).

FeedBack

Q.84

If the sum of first n terms of three different Arithmetic Progressions are in ratio n+1 : 2n+3 : 5n+7, then the 10th term of these three series are in ratio

1 **10 : 21 : 52**

2 **7 : 12 : 19**

3 **1 : 1 : 1**

4 **20 : 41 : 102**

Solution:
Correct Answer : 4

Bookmark

Answer key/Solution

As the ratio of sum of n terms of three different AP's is given as n + 1 : 2n + 3 : 5n + 7.

i.e, $\frac{n}{2}[2a_1+(n-1)d_1]:\frac{n}{2}[2a_2+(n-1)d_2]:\frac{n}{2}[2a_3+(n-1)d_3]::$ n + 1 : 2n + 3 : 5n + 7

i.e, $a_1 + (n-1)/2\ d_1 : a_2 + (n-1)/2\ d_2 : a_3 + (n-1)/2\ d_3$ :: n + 1 : 2n + 3 : 5n + 7

On placing n = 19 we get the ratio of 10th term of the three series.

i.e, $a_1 + 9d_1 : a_2 + 9d_2 : a_3 + 9d_3$: : 20 : 41 : 102.

FeedBack

Q.85

The 10th term of an Arithmetic Progression is 15. If the sum of the squares of its 7th, 10th and 13th term is minimum possible, then the common difference is

Solution:
Correct Answer : 0

Bookmark

Answer key/Solution

Given $t_{10} = a + 9d = 15$

Now $t_7 + t_{10} + t_{13} = (a+6d)^2 + (a+9d)^2 + (a+12d)^2$

$\Rightarrow (a+9d-3d)^2 + (a+9d)^2 + (a+9d+3d)^2$

$\Rightarrow (15-3d)^2 + (15)^2 + (15+3d)^2$

Therefore, minimum value is at d = 0 i.e, $3(15)^2$.

FeedBack

Q.86

Find the area (in cm^2) of the triangle formed by joining the alternate vertices of a regular hexagon of side 1 cm.

1 **$\sqrt{3}/4$**

2 **$\sqrt{3}$**

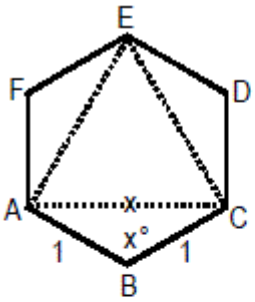
3 **$3\sqrt{3}/4$**

4 **$3\sqrt{3}$**

Solution:
Correct Answer : 3

Bookmark

Answer key/Solution



To find sides of thus formed equilateral triangle, first we need the interior angle of the hexagon.

Interior angle of any polygon with side 'n' = $\frac{(n-2)}{n} \times 180$.

So, the required angle here is 120.

In triangle ABC, $\cos 120^\circ = \frac{1^2 + 1^2 - x^2}{2.1.1} = -\frac{1}{2}$

$\Rightarrow 2 - x^2 = -1 \Rightarrow \boxed{x^2 = 3}$

Therefore, area of triangle $= \frac{\sqrt{3}}{4}x^2 = \frac{3\sqrt{3}}{4}$.

FeedBack

Q.87

From the set of first 'n' natural numbers, one of the numbers is erased and the average of the remaining numbers comes out to be $16\frac{1}{10}$. Find the erased number.

1 **13**

2 **16**

3 **31**

4 **32**

Solution:
Correct Answer : 1

Bookmark

Answer key/Solution

The average of first 'n' natural numbers deviate by maximum of 0.5 on erasing one of the numbers, so it can be concluded that the average would have been around 16 before erasing the number also.

Further the average of first 'n' natural numbers is $\frac{n+1}{2}$ which is around 16 when n is close to 31 (i.e. $\frac{n+1}{2}=16 \rightarrow n=31$)

So, taking n as 31, the sum of first 31 natural numbers is 496 (i.e. $\frac{31\times32}{2}$) and the given sum is 483 (i.e. $\frac{161}{10}\times30$) so the erased number = 496 – 483 = 13.

FeedBack

Q.88

A and B started running simultaneously from a point around a circular track of 900 m. The ratio of their speeds is 3 : 7. For how many times will A and B be at a distance of 10 m from each other, if they are running in opposite directions and stops only when they meet for the first time at the starting point again?

1 **20**

2 **10**

3 **16**

4 **Cannot be determined**

Solution:
Correct Answer : 1

Bookmark

Answer key/Solution

While two persons moving on a circular track with their speeds in ratio a : b, then there number of meeting points before meeting again at the starting point is
(i) a + b, when moving in opposite directions
(ii) a – b, when moving in same direction.
Now, as A and B are running in opposite directions and the ratio of their speed is 3 : 7, so they have a total of 10 meeting points.
Now in respect of every meeting point, there will be two instance when they will be at a distance of 10 m from each other (i.e, before meeting and after meeting)
So, there will be a total of 20 instances when they will be at a distance of 10m from each other.

FeedBack

Q.89

How many integral values of k are possible for which the lines, 4x + 5ky + 7 = 0 and kx – 6y + 12 = 0, intersect in the 2nd quadrant?

Solution:
Correct Answer : 7

Bookmark

Answer key/Solution

While solving the given two equations, the point of intersection of these two lines is

$$\left(\frac{-(42+60k)}{24+5k^2}, \frac{48-7k}{24+5k^2}\right)$$

For this point to lie in 2nd quadrant, y has to be positive
i.e, 48 – 7k > 0

$\Rightarrow k < \frac{48}{7}$

and x co-ordinate has to be –ve

i.e, $60k + 42 > 0 \Rightarrow k > -\frac{7}{10}$

All such integral values of k for which $k \in \left[\frac{-7}{10}, \frac{48}{7}\right]$ is our answer.

Therefore, integral valves of k in this range are 0, 1, 2, 3, 4, 5, 6 i.e. 7 values.

FeedBack

Q.90

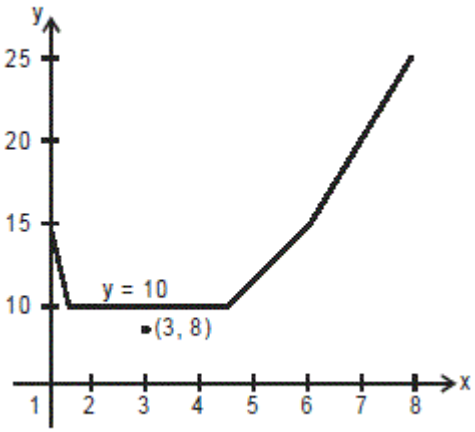
Find the shortest distance between the point P (3,8) and the graph y = |3x – 5| + |2x – 9| + |x – 6|.

Solution:
Correct Answer : 2

Bookmark

Answer key/Solution

The graph of y = |3x – 5| + |2x – 9| + |x – 6| is



As it can be seen from the graph clearly (3,8) lies below the line parallel to x-axis, so the shortest distance between the point (3, 8) and the graph = 10 – 8 = 2.

FeedBack

Q.91

How many different words can be formed using at least two letters from the word "BASKET"?

Solution:
Correct Answer : 1950

Bookmark

Answer key/Solution

Since we can use at least two words from the word BASKET, one can for 2 letters, 3 letters, 4 letters, 5 letters and 6 letters words respectively.
For 2 letter words, first we need to choose 2 letters out of the 6 letters and then make every possible word.
So, Permutation of 2 words out of 6 words will serve the purpose
i.e, 2 letter words = ${}^6P_5 = 30$
Similarly, 3 letter words = ${}^6P_3 = 120$
4 letter words = ${}^6P_4 = 360$
5 letter words = ${}^6P_5 = 720$
6 letter words = ${}^6P_6 = 720$
Therefore, total possible words = 30 + 120 + 360 + 720 + 720 = 1950.

FeedBack

Q.92

A man started running to catch a bus which is at a distance of 300m from him. If the speed of the bus is 3 m/s and that of the man is 27 km/hr, then in how much time will the man be able to catch the bus?

1 **60 sec**

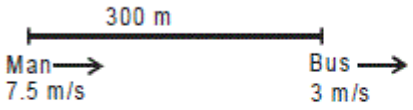
2 **33.33 sec**

3 **50 sec**

4 **66.67 sec**

Solution:
Correct Answer : 4

Speed of man = 27 km/hr = 7.5 m/s



Since both are moving in same direction, relative speed is 4.5 m/s

Therefore, time taken by the man = $\frac{300}{4.5} = 66.67$ sec .

FeedBack

Bookmark

Answer key/Solution

Q.93

P, Q, R and S working together printed a total of 200 books. In printing books, P is thrice as efficient as Q but 75% less efficient than R. R is half as efficient as S. How many books did Q print, out of these 200 books?

Solution:
Correct Answer : 5

Efficiencies of P : Q : R : S are in ratio 3 : 1 : 12 : 24
Let books printed by the four persons be 3k, k, 12k, 24k respectively.
3k + k + 12k + 24k = 200
So, k = 5 and hence Q printed 5 books.

FeedBack

Bookmark

Answer key/Solution

Q.94

How many factors of 10800 are multiple of 30 but not of 90?

1 **4**

2 **8**

3 **16**

4 **24**

Solution:
Correct Answer : 2

$10800 = 2^4 \times 3^3 \times 5^2$, $30 = 2 \times 3 \times 5$ and $90 = 2 \times 3^2 \times 5$
Multiples of 30 but not 90 will be of form $2^r \times 3 \times 5^P$, where r = 1, 2, 3, 4
P = 1, 2
So in total 4 × 2 = 8 such numbers are possible.

FeedBack

Bookmark

Answer key/Solution

Q.95

X can complete a job in 15 days and Y can complete the same job in 20 days. Initially X works for 5 days and then Y joined him. X left four days after Y joined. Find the number of days in which Y should have completed the remaining work.

1 **13**

2 **4**

3 **12**

4 **8**

Solution:

Correct Answer : 2

Let total work to be done be 60 (LCM of 15 and 20).
X can do 4 units of work in a day whereas Y can do 3 units in a day.
Initial X worked alone for 5 days i.e, 5 × 4 = 20 units of work
Then X and Y worked together for 4 days i.e, 4 × 7 = 28 units of work
The remaining work to be completed = 60 – 20 – 28 = 12 units
Therefore, Y takes 4 days to complete the remaining work.

FeedBack

Bookmark

Answer key/Solution

Q.96

How many times in a day both hands of a clock, hour hand and minute hand, point towards minute marks simultaneously?

1 **8**

2 **24**

3 **110**

4 **120**

Solution:

Correct Answer : 4

Bookmark

Answer key/Solution

Hour hand cover $1/5^{th}$ of an hour to cover a minute which means in every 12 minutes hour hand will move one minute mark.
So, both the hands will point simultaneously at the minute mark after every 12 minutes. So, in a day they will point 24 × (60/12) times = **120** times towards the minute marks simultaneously.

FeedBack

Q.97

p, q and r are the roots of the cubic equation: $x^3 - 3x^2 + 2x - 1 = 0$. Find the value of (p/qr + q/pr + r/pq).

1 **7**

2 **6**

3 **5**

4 **4**

Solution:

Correct Answer : 3

Given equation is $x^3 - 3x^2 + 2x - 1 = 0$.
As p, q and r are roots for the given equation,
Sum of roots = p + q + r = 3;
Sum of roots taken two at a time = pq + pr + qr = 2;
and product of roots = pqr = 1

Now, $\frac{p}{qr}+\frac{q}{pr}+\frac{r}{pq}=\frac{p^2+q^2+r^2}{pqr}=\frac{(p+q+r)^2-2(pq+qr+rp)}{pqr}=\frac{(3)^2-2(2)}{1}=5.$

FeedBack

Bookmark

Answer key/Solution

Q.98

In a triangle PQR, PQ = 19.5 cm and PR = 14 cm. PS, the altitude drawn from P to QR is 6 cm. What is length (in cm) of the circumradius of ΔPQR?

1 **21.25**

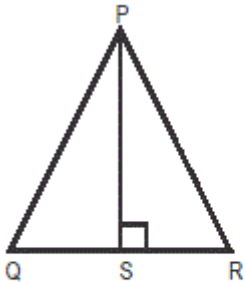
2 **22.75**

3 **21.75**

4 **23.25**

Solution:
Correct Answer : 2

Let required radius be R_1 cm.



$$R_1 = \frac{PQ \times PR \times QR}{4 \times \text{area of triangle}} = \frac{19.5 \times 14 \times QR}{4 \times \frac{1}{2} \times 6 \times QR}$$

$$\therefore R_1 = 22.75$$

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Answer key/Solution

Q.99

Find the value(s) of 'a' for which both, the inequation 7a + 5 < 9a - 4 and the quadratic equation $2a^2 - 21a + 54 = 0$, holds true.

1 **9/2**

2 **6**

3 **Both (1) and (2)**

4 **None of these**

Solution:
Correct Answer : 2

As $7a + 5 < 9a - 4 \Rightarrow a > 9/2$
Also $2a^2 - 21a + 54 = 0 \Rightarrow a = 9/2$ and 6
Combining both equations, only a = 6 satisfies.

FeedBack

Bookmark

Answer key/Solution

Q.100

A biased coin is tossed 5 times. The probability of appearing heads on tossing the coin is half the probability of appearing tails on tossing it. Find the probability of exactly 3 tosses resulting in heads.

1 **80/243**

2 **20/243**

3 **160/243**

4 **40/243**

Solution:

Correct Answer : 4

Let the probability of appearing heads = x
∴ probability of appearing tails = 2x
So exactly 3 resulting in head is possible in ${}^5C_3$ = 10 ways
∴ Probability of exactly 3 tosses resulting in head

$= 10x^3(2x)^2 = 40x^5 = 40\left(\frac{1}{3}\right)^5 = \frac{40}{243}$ (because x + 2x = 1 i.e, x = 1/3).

FeedBack

Bookmark

Answer key/Solution