

Master series Mock CAT - 9 2018

Scorecard (procreview.jsp?sid=aaa5BycB_LJvH-TdBuPHwSun Jan 20 07:39:24 UTC 2019&qsetId=NsyXwxMMTAo=&qsetName=Master series Mock CAT - 9 2018)

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Qs Analysis (QsAnalysis.jsp?sid=aaa5BycB_LJvH-TdBuPHwSun Jan 20 07:39:24 UTC 2019&qsetId=NsyXwxMMTAo=&qsetName=Master series Mock CAT - 9 2018)

Booster Analysis (BoosterAnalysis.jsp?sid=aaa5BycB_LJvH-TdBuPHwSun Jan 20 07:39:24 UTC 2019&qsetId=NsyXwxMMTAo=&qsetName=Master series Mock CAT - 9 2018)

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VRC

DILR

QA

Sec 1

Directions for questions 1-3: The following passage consists of a set of three questions. Read the passage and answer the questions that follow.

Spectacles first appeared in our family when my father turned far-sighted around 40. I was next, turning myopic around 14. He began with those classic 'browline' frames and I began with a 'wire frame'. Frames, and frame styles, were changed several times before the myopia stabilised. I misplaced my glasses many times; on a couple of occasions I 'located' them after I had sat on them firmly. By age 30 or so I had settled for those black, rectangular 'shell' frames. Now they're due for replacement; they're past *rigor mortis*, I'm told.

'It's not the *frame* alone that's important,' chided my optician-friend, dissuading me from going online, 'but the *fit*, particularly at the 'bridge'. Frames rarely fit perfectly. So, any discomfort must be fixed by professional opticians by adjusting the frame at the temples (the sticks at the sides) or the temple tips (the ends of the sticks that go behind the ears). Adjustments like these cannot be done online, can they?' Mortified, I crooned my version of Johnny Nash's *I can see clearly now*.

Spectacles. Is there any other sartorial accourrement that men use to gesture, or to make a statement, particularly while conversing? I think not. Not the pen, or tie, or watch, but spectacles. People in authority, as do public figures, often exploit them, even the plainest of frames, as seen during TV interviews. Superheroes too exploit them: Superman/Shaktimaan uses them to conceal their identity (and kind of emasculating themselves in the process). But 'Google Glasses' failed to make a statement, didn't it? When those gadgets — not glasses — return, perhaps with a vengeance, what will they be abused for then? Brrr. One shudders at that thought.

Glasses can be metonymic, pictorially speaking. Bapu comes to mind first. In our movies, bespectacled people are often derogatorily portrayed with 'soda glasses'. Some actors wear only frames! Spencer Tracey in *Guess Who's Coming to Dinner* one example. Spectacle usage has its own etiquette. Students removing their glasses while conversing with school authorities could be mistaken for defiance. Fidgeting with one's glasses during an interview can send the wrong signals. And some believe that it's possible to tell a person by how they 'primp up' or 'push up' their spectacles: Do they clasp the frame with their thumb and forefinger and primp it, or do they push it up? Gesturing with glasses seems to come more naturally to men than women, don't you think?

Q.1 Why does the author pose the question in the last sentence of the passage?
1 To pose a rhetoric question to highlight the dominance of men in advertisements related to spectacles
2 To pose a rhetoric question to highlight the dominance of men in using spectacles
3 O To pose a rhetoric question in order to find an answer to the dominance of men in wearing spectacles
$4\square$ To pose a rhetoric question to find a reason for the skewed gender ration in the spectacle user industry

Solution:

Correct Answer: 2

GENRE: Abstract/ Humour /Satire /Personal Column

■ Bookmark

Answer key/Solution

Options 1 and 4 are farfetched. The author doesn't talk about gender ratio or gender discrimination. He is talking about men using the spectacles as a tool of gesturing. Option 3 is wrong because it talks about only "wearing" spectacles. Hence, the correct option is 2.

FeedBack

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Q.2

Which of the following is most similar to the author's views on spectacles as described in the passage?

1 Spencer Tracy, a renowned film maker, comparing his stardom "an albatross around his neck".

nnis as something he loved with "a
ccess as "a bolt from the blue" as his
es as a budding singer" and the
■ Bookmark
2

The answer to this question can be found by the method of elimination. The author has used a humorous tone throughout the passage. He has talked about his necessity to wear spectacles, certain funny encounters, and the things one can infer from somebody's usage of spectacles. He hasn't complained about his spectacles or the act of wearing it. Hence, we can eliminate options 1 and 2. Option 3 is too generic as it talks about racial discrimination. The author in the passage doesn't talk about overcoming any personal challenge. Hence, option 4 is the best answer.

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Q.3 According to the passage, why did the author croon the Johnny Nashsong?
1 O Tocounter his feeling of embarrassment
2 O To highlight his humorous take on the encounter
3 O To hide his shame upon being chided by his optician
4 O To show his admiration for the audacity of his optician

Solution:

Correct Answer: 2

GENRE: Abstract/ Humour /Satire /Personal Column

■ Bookmark

Answer key/Solution

Options 3 and 4 can be eliminated as the author is neither ashamed nor admiring his optician. The entire narration is humorous in nature. The author talks about the encounter in a subtly funny manner. Options 1 and 2 come close. However, the author isn't actually mortified. He uses the word in a sarcastic manner. So, option 2 is the correct answer.

FeedBack

Q.4

The following question consists of a set of five sentences. These sentences need to be arranged in a coherent manner to create a meaningful paragraph. Type in the correct order of the sentences in the space provided below the question.

- 1. We know there are terrestrial planets around many stars, and we kind of expected the nearby stars would contain terrestrial planets.
- 2. This is not exciting because of this. The excitement is because it is the nearest one.
- 3. "I'm the nearest star, and I have a potentially habitable planet!" said R. Paul Butler, an astronomer at the Carnegie Institution for Science and a member of the team that made the discovery.
- 4. Beyond the planet's size and distance from its parent star, much about it is still mysterious.
- 5. One astronomer likened it to a flashing neon sign.

Solution:

Correct Answer: 53124

Sentences 5 and 3 make a mandatory pair (One astronomer – R. Paul).

Sentence 1 expands the idea of habitable planet. Sentence 2 comes next as it provides a different view to the one mentioned in sentence 1. The reference for the phrase "This is not exciting..." can be found in sentence 1. Sentence 4

comes at the end as it provides a new idea to the paragraph and it also gives a conclusion to the topic ("much of it is still mysterious").

FeedBack

■ Bookmark

Answer key/Solution

Q.5

In this question, five sentences are given. Of these, four sentences can be logically sequenced to make a coherent paragraph. One of the sentences doesn't fit. Type in the number of the sentence that doesn't fit into the paragraph in the space provided below the question.

- 1. Richard Luscombe, a Miami-based reporter who contributes regularly to the Guardian, had been filing for days on the preparations, the dire forecasts and the calls from officials to get out of harm's way.
- 2. The family survived a sleepless night and as Miami dodged the eye of the storm, he carried on reporting through the week.
- 3. Moving and equipping journalists on the ground is expensive and not done lightly, but after a number of days watching the skies, it became clear we should mobilise.
- 4. Sometimes major global events happen suddenly and without warning, testing the agility, authority and accuracy of a news operation.
- 5. Breaking off from reporting, he boarded up his home, and made plans for his family to shelter safely.

Solution:

Correct Answer: 4

The correct order is 3152. Sentences 1, 5, and 2 make a mandatory sequence as they talk about Richard Luscombe and his experience during a natural calamity. Sentence 3 introduces the paragraph by talking about a specific natural occurrence. Sentence 4 is the odd one out as it talks about a generic

■ Bookmark

Answer key/Solution

topic (major global event...). It can be the opening sentence of the passage but it doesn't fit into the context of this paragraph. This paragraph talks about a specific natural calamity and how the journalists of a particular organization dealt with it.

FeedBack

Directions for questions 6-11: The following passage consists of a set of six questions. Read the passage and answer the questions that follow.

From the era of the Renaissance one particular thinker is worthy of mention in the context of euthanasia, namely the humanist Thomas More. In his *Utopia*(1516), he proposed euthanasia as an option for hopelessly sick patients. His concept of euthanasia is different from that used in Antiquity (and later by Francis Bacon) where euthanasia means a peaceful nonviolent death. For Thomas More, euthanasia was a kind of last option for patients without any hope of cure. Euthanasia was for the Lord Chancellor, also known as Saint Thomas More, a compassionate answer to human suffering and tragedy. Besides medical hopelessness, there were two other conditions for euthanasia.

First, euthanasia has to be a "voluntarily death", chosen by a person "with a torturing and lingering pain"; a request for euthanasia can only be accepted in medically desperate situations where nothing has been left undone that can contribute to health. No one can be forced to ask for euthanasia, similarly no one can be killed against his/her will. It is regarded as legitimate to "choose rather to die since they cannot live in much misery". Persons in such misery are exhorted by priests and by magistrates, that, "since they are now unable to go on with the business of life, are become a burden to themselves and to all about them, and they have really out-lived themselves, they should no longer nourish such a rooted distemper". They can be persuaded to end their life but "if they cannot be persuaded to it, this does not induce them to fail in their attendance and care of them." The second condition concerns approval by public authorities, both civil and religious. Failing in this public approval means violation. Whereas a death chosen voluntarily and "upon such authority", as mentioned above, is deemed very honourable.

More's concept of euthanasia includes both (assisted) suicide and intentional killing. More believed that his concept of voluntary and involuntary death is legitimate: "They think they behave not only reasonably but in a manner consistent with religion and piety; because they follow the advice given them by their priests, who are the expounders of the will of God." Fortunately enough for him the concept of euthanasia was a utopian concept appropriate for the best state in the new island Utopia.

Utopia literally means no-place, however More in the context of the English pronunciation of the word "utopia" is transforming "eutopia" into "utopia", a place of felicity. This concept of euthanasia inspired praxis of euthanasia in England in the 16th century. It is difficult to extrapolate to what extent More would apply his euthanasia (with the semantics he used) – limited to fiction solely or into the real world of current biomedicine. One can guess that his esteem for autonomy, mercy and public approval would lead him to be supportive of active voluntary euthanasia.

One of the first modern thinkers who significantly influenced later conceptions of science and scientific knowledge and who came out with a new concept of euthanasia was the English late Renaissance philosopher Francis Bacon. His new understanding of science indirectly affected medicine as well: medicine should include both science and art, which enables a physician to help the patient to die in an easy and natural way. When describing this medical art, he uses the term "euthanasia exteriori" (a good death coming from outside). Simultaneously a good death should come from inside in a form of a sweet and calm dying while the soul of the patient is being prepared (caring for the dying). Apparently Bacon makes use of the term "euthanasia" in the context used by Suetonius when he reported the death of the emperor Augustus. By euthanasia Bacon means the quiet peaceful death of a person who is expecting it. The sense of euthanasia is for him to die non-violently and peacefully, falling asleep. Sleep is to him, similarly to the ancient understanding, a metaphor for death. To aid such a peaceful death is an important task of medicine. The physician's role is to accompany the patient in dying a painless and equable death. Bacon harmonized the medical good death in its ancient meaning with the medieval concept of the arsmoriendi and with care of the dying persons that we would refer to today as palliative care.

The development of views about euthanasia has been strongly influenced by social progress in opinions about suicide. Since the 16th century, within the mainstream opinion which held suicide as morally unacceptable, singular voices started to appear which held suicide as morally legitimate and justifiable in cases of serious illness.

Q.6 Why did Thomas More talk about the idea of euthanasia in his book 'Utopia'?
1 Because he wanted England to be happy place, devoid of any pain and suffering and hence be called 'utopia'.
2^{\bigcirc} Because he wanted the sick during his time in England to receive remarkable care and have the power to take decision about their own life.
3 Because he wanted people of England to put their hope in the afterlife and choose to let themselves die as life after death leads one to God's palace.
4 O Because he wanted to introduce the idea that euthanasia is permissible by the state.

Solution:

Correct Answer: 2

GENRE: Ethics and Morality / Philosophy

■ Bookmark

Answer key/Solution

The word Utopia means a happy perfect place, which actually cannot exist and hence the passage refers to it as 'no place'. Option 1 is hence directly ruled out. 4 is incorrect because there are no basis to agree to this conclusion. 3 is a farfetched option. Option 2 is the most appropriate answer. In the opening parts of the passage More's ideas of euthanasia are given where it is stated that it is last option left for those who have received all possible medications but nothing could be done to cure their illness. Further, in paragraph 4 it is stated that More stresses on 'autonomy' of one on one's life. This makes option 2 correct.

FeedBack

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0.7

Which of the following is true according to the passage?

- 1 Bacon believed that both scientific knowledge and practical skills combined together should help the patients die a peaceful death.
- 2 Suetonius believed that God allows man to take life, if man is facing conditions under which it is worse to live than to die.
- 3 Thomas More believed that accepting a voluntary death is equal to receiving death from the hands of the Deity.
- $4 \bigcirc$ Because life is a gift from God, suicide means to take possession of life which is not owned and by nature cannot be owned by man.

Solution:

Correct Answer: 1

GENRE: Ethics and Morality / Philosophy

■ Bookmark

Answer key/Solution

Option 2 is wrong because 'Suetonius' is discussed only in terms of Bacon. No extra information has been provided about his beliefs. Option 3 is incorrect

because though More believed in the idea of 'voluntary death', he did not think of it as a gift of God. Suicide is discussed in the passage only towards the end. Option 4 is beyond the scope of the passage. Option 1 is the correct answer as it is stated in the second last passage that- "His new understanding of science indirectly affected medicine as well: medicine should include both science and art, which enables a physician to help the patient to die in an easy and natural way".

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unacceptable, singular voices started to appear which held suicide as morally legitimate and justifiable in cases of serious illness.

Q.8

According to the passage, when can "voluntary death" be practiced?

- 1 When a person accepts that everything possible has been done to make his life comfortable, but nothing additional can be done to cure his pain.
- 2 When a person's life is loaded down with severe pain, mutilation or incurable disease and he is being treated as a liability.
- 3 When a person's serious inoperable disease or physical or mental handicap has to be eliminated because it has now become intolerable for him.
- 4 When a person is compelled and motivated by mercy to end his life because he is of no additional advantage to mankind.

Solution:

Correct Answer: 1

GENRE: Ethics and Morality / Philosophy

■ Bookmark

Answer key/Solution

According to the opening paragraph, a person cannot be forced to ask for euthanasia. Therefore 4is ruled out. Option 2 is incorrect because even if a person is treated as a burden, no one has the right to take away his life. Option 3 is wrong because it does not state that the person is convinced, nor does it state that proper medications have been given to him. Only option 1 that most appropriately answers the above question.

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Utopia literally means no-place, however More in the context of the English pronunciation of the word "utopia" is transforming "eutopia" into "utopia", a place of felicity. This concept of euthanasia inspired praxis of euthanasia in England in the 16th century. It is difficult to extrapolate to what extent More would apply his euthanasia (with the semantics he used) – limited to fiction solely or into the real world of current biomedicine. One can guess that his esteem for autonomy, mercy and public approval would lead him to be supportive of active voluntary euthanasia.

One of the first modern thinkers who significantly influenced later conceptions of science and scientific knowledge and who came out with a new concept of euthanasia was the English late Renaissance philosopher Francis Bacon. His new understanding of science indirectly affected medicine as well: medicine should include both science and art, which enables a physician to help the patient to die in an easy and natural way. When describing this medical art, he uses the term "euthanasia exteriori" (a good death coming from outside). Simultaneously a good death should come from inside in a form of a sweet and calm dying while the soul of the patient is being prepared (caring for the dying). Apparently Bacon makes use of the term "euthanasia" in the context used by Suetonius when he reported the death of the emperor Augustus. By euthanasia Bacon means the quiet peaceful death of a person who is expecting it. The sense of euthanasia is for him to die non-violently and peacefully, falling asleep. Sleep is to him, similarly to the ancient understanding, a metaphor for death. To aid such a peaceful death is an important task of medicine. The physician's role is to accompany the patient in dying a painless and equable death. Bacon harmonized the medical good death in its ancient meaning with the medieval concept of the arsmoriendi and with care of the dying persons that we would refer to today as palliative care.

The development of views about euthanasia has been strongly influenced by social progress in opinions about suicide. Since the 16th century, within the mainstream opinion which held suicide as morally unacceptable, singular voices started to appear which held suicide as morally legitimate and justifiable in cases of serious illness.

Q.9 According to Bacon, 1 euthanasia cannot become a principle of universal legislation, being contrary to the natural law. 2 euthanasia is against God and against justice, as death of a person lies on the will of the God and euthanasia makes man usurp the role of God. 3 euthanasia is in harmony with the objective order, and does not create discrepancy to the natural law.

4 euthanasia should be a painless death that should come with the assistance of good medication.

Solution:

Correct Answer: 4

GENRE: Ethics and Morality / Philosophy

■ Bookmark

Answer key/Solution

The end of the passage discusses Bacon's stance on euthanasia. For him, it is closely related to sleep, which if further aided by medicines and physician's, both of which ensure that a person is relieved from pain peacefully. Ontions 1 and 3

both of which ensure that a person is relieved from pain peacefully. Options 1 and 3 present euthanasia in a negative light, which does not correspond with Bacon's stance. Option 2 is beyond the scope of the passage. It is only option 4 that correctly states Bacon's idea of euthanasia.

FeedBack

Directions for questions 6-11: The following passage consists of a set of six questions. Read the passage and answer the questions that follow.

From the era of the Renaissance one particular thinker is worthy of mention in the context of euthanasia, namely the humanist Thomas More. In his *Utopia*(1516), he proposed euthanasia as an option for hopelessly sick patients. His concept of euthanasia is different from that used in Antiquity (and later by Francis Bacon) where euthanasia means a peaceful nonviolent death. For Thomas More, euthanasia was a kind of last option for patients without any hope of cure. Euthanasia was for the Lord Chancellor, also known as Saint Thomas More, a compassionate answer to human suffering and tragedy. Besides medical hopelessness, there were two other conditions for euthanasia.

First, euthanasia has to be a "voluntarily death", chosen by a person "with a torturing and lingering pain"; a request for euthanasia can only be accepted in medically desperate situations where nothing has been left undone that can contribute to health. No one can be forced to ask for euthanasia, similarly no one can be killed against his/her will. It is regarded as legitimate to "choose rather to die since they cannot live in much misery". Persons in such misery are exhorted by priests and by magistrates, that, "since they are now unable to go on with the business of life, are become a burden to themselves and to all about them, and they have really out-lived themselves, they should no longer nourish such a rooted distemper". They can be persuaded to end their life but "if they cannot be persuaded to it, this does not induce them to fail in their attendance and care of them." The second condition concerns approval by public authorities, both civil and religious. Failing in this public approval means violation. Whereas a death chosen voluntarily and "upon such authority", as mentioned above, is deemed very honourable.

More's concept of euthanasia includes both (assisted) suicide and intentional killing. More believed that his concept of voluntary and involuntary death is legitimate: "They think they behave not only reasonably but in a manner consistent with religion and piety; because they follow the advice given them by their priests, who are the expounders of the will of God." Fortunately enough for him the concept of euthanasia was a utopian concept appropriate for the best state in the new island Utopia.

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The development of views about euthanasia has been strongly influenced by social progress in opinions about suicide. Since the 16th century, within the mainstream opinion which held suicide as morally unacceptable, singular voices started to appear which held suicide as morally legitimate and justifiable in cases of serious illness.

0.10

Which of the following is true about More's idea of euthanasia?

- 1 Euthanasia does not include the act of suicide.
- 2 Euthanasia is a painless death and hence best suited for people who have suffered immense pain.
- 3 Euthanasia is the final remedy for extremely unwell people.
- 4 Euthanasia is the only option for those whose illness cannot be cured.

Solution:

Correct Answer: 3

GENRE: Ethics and Morality / Philosophy

■ Bookmark

Answer key/Solution

According to the passage, More "proposed euthanasia as an option for hopelessly sick patients." It "was a kind of last option". This makes option 3 correct. Option 1 is wrong because exactly its opposite has been stated. Option 2 is wrong because it was believed in earlier times. Option 4 is wrong because of the term 'only'.

FeedBack

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From the era of the Renaissance one particular thinker is worthy of mention in the context of euthanasia, namely the humanist Thomas More. In his *Utopia*(1516), he proposed euthanasia as an option for hopelessly sick patients. His concept of euthanasia is different from that used in Antiquity (and later by Francis Bacon) where euthanasia means a peaceful nonviolent death. For Thomas More, euthanasia was a kind of last option for patients without any hope of cure. Euthanasia was for the Lord Chancellor, also known as Saint Thomas More, a compassionate answer to human suffering and tragedy. Besides medical hopelessness, there were two other conditions for euthanasia.

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The development of views about euthanasia has been strongly influenced by social progress in opinions about suicide. Since the 16th century, within the mainstream opinion which held suicide as morally unacceptable, singular voices started to appear which held suicide as morally legitimate and justifiable in cases of serious illness.

Q.11

According to your understanding of the above passage, why is approval from public authorities necessary for euthanasia?

1 Because without the approbation of the priests and the senate, his family which facilitated the process will be excommunicated.

$2 \bigcirc$ Because without the approbation of the priests and the senate, his death will be considered a crime and his family will be marred by social ostracizing.
3 \bigcirc Because without the approbation of the priests and the senate, he will not get any of the honours of a proper funeral.
$4 \bigcirc$ Because without consent from the priests and the senate, his death will be seen as a challenge to God's autonomy.

Solution:

Correct Answer: 3

GENRE: Ethics and Morality / Philosophy

■ Bookmark

Answer key/Solution

Consider the end of paragraph 2. "The second condition concerns approval by public authorities, both civil and religious. Failing in this public approval means violation. Whereas a death chosen voluntarily and "upon such authority", as mentioned above, is deemed very honourable." This means that if approval is not taken from public authorities, death will be considered as dishonourable. Option 3 is the closest and most appropriate answer as it talks about not receiving an honourable funeral. Options 1, 2and 4 are not directly related to the concept of honour.

FeedBack

Q.12

The following question consists of a paragraph followed by four summaries. Choose the option that best captures the essence of the paragraph. Type in the option number in the space provided below the question.

Babies whose needs are met quickly and warmly (e.g., feeding, changing, holding/cradling, and soothing them) achieve a crucial developmental task – attachment. This bond of affection between parents and children is necessary for a healthy parent-child relationship, and also extends to relationships between children, their siblings, and other family members (e.g., grandparents, aunts/uncles, etc) and caregivers. When infants attach successfully to their parents and caregivers, they learn to trust that the outside world is a welcoming place and are more likely to explore and interact with their environment.

Which of the following best summarizes the paragraph?

- 1. Attachment between parents and the child is highly important because it leads to better social skills and fewer behavioural problems.
- 2. Attachment between parents and the child is highly important because it lays the groundwork for emotional and cognitive development.
- 3. Attachment between parents and the child is highly important because it initiates social development.
- 4. Attachment between parents and the child is highly important because it helps the parents to exhibit greater control of their children's behaviour.

Solution:

Correct Answer: 3

The given paragraph talks about how a child's social development and interaction with the world depends on the attachment he shares with the parents. This makes 3 correct. 1 is wrong because no 'behavioural problems' are discussed in the paragraph. 2is wrong because no 'emotional and cognitive development' are discussed. 4 is farfetched and beyond the scope of the paragraph.

■ Bookmark

Answer key/Solution

Directions for questions 13 to 15: The passage given below is followed by a set of three questions. Choose the most appropriate answer to each question.

In a new piece on Wired.com, "Could This Be the Year Movies Stopped Mattering?" Brian Raftery suggests that movies have "devolved from Culture-Conquering Pastime to merely Something to Do When the Wi-Fi's Down," and that their former centrality to the culture has been taken over by a diverse range of media events—serial television above all, but also Pokémon Go, "Hamilton," YouTube memes, and visual albums such as Beyoncé's "Lemonade." The simplest refutation is that what matters is determined not by media discussion but by each person for herself; movies matter to me, therefore they matter.

But Raftery is on to something important, even if, as I think, he comes at it backward. He's right that the kinds of work that capture widespread attention and find widespread favor have changed in recent years—and he's right that these changes are inseparable from the realm of criticism, the very nature of which has changed drastically in the same period. Raftery's fixation on "the pop-cultural conversation" and the "zeitgeist" is one that's shared by the era, by the critical community at large, and this fixation yields its own predestined results. Modern cultural criticism gives rise to its own cultural artifacts, and the two fit together like a lock and key. As a work of criticism, Raftery's essay is exemplary of the very phenomenon that he's documenting—and that circularity, that self-fulfilling critical criterion, is the defining trait of the time.

The rise of so-called quality television has coincided with the advent of widespread access to the Internet, which is closely correlated with consumers' level of education. The serial nature of serial television lent itself to online discussion—blogs, comments, e-mails, and then, a few years later, social-media postings—in a way that the one-time-only and freestanding experience of going to a movie doesn't; at the same time that it also locked specifically into the new habits of the educated in a way that moviegoing didn't.

The principal quality of quality TV has proven to be its ability to generate discourse—not just on the part of critics and viewers but on the part of journalists. As particular series, and television over all, became the subjects of widespread public discussion—discussion in the literal sense, of writers and viewers responding to each other—that discussion became news. Suddenly, television was propelled from the arts page to the front page, and that trend was accelerated by the nature of the shows. Their emphasis on stories and characters involving iconic phenomena in cultural history and hot-button issues of contemporary sociology and politics grabbed—and still grabs—hold of journalists' nose for stories. Many series seem to exist only to present topics in ready-to-debate form; they are built to give rise to "think pieces," which have become the dominant, if easily parodied, critical mode.

The experience that the watching and the critique of new serial television resemble above all is the college experience. Binge-watching is cramming, and the discussions that are sparked reproduce academic habits: What It Says About, What It Gets Right About, What It Gets Wrong About. There is a lot of aboutness but very little being; lots of puzzle-like assembling of information to pose particular kinds of questions (posing questions—sounds like a final exam), to explore particular issues (sounds like a term paper). For these reasons, television's actual competition isn't movies or museums or novels but nonfiction books, documentary films, journalism, radio discussions, and general online clicking. Serial television is designed to gratify the craving for facts to piece together and analyze. The medium seems created for the media buzz that's generated by the media people who are its natural audience, and to whom the shows owe their acclaim, their prestige, and their success.

Q.13

With which of the following would the author agree?

1 The quality of criticism which, say, a documentary would spin, is more e latest spy movie.	ngaging and incisive than the
2° College-going students are the primary niche audience for TV shows becaudience has far less time at its disposal for binge-watching.	cause the movie-going
3 What is popular does determine, to a large extent, what matters the most seen and critiqued.	t as a cultural artifact to be
4 Quality TV shows come to the attention of not just viewers and critics, but they often depict debatable socio-political issues.	ut also of journalists because
Solution: Correct Answer : 4	■ Bookmark
Genre: Cultural Studies / Current Trend / Mass Media	& Answer key/Solution
Oution (1) is already in contract because the court of a contract of a c	

Option (1) is clearly incorrect because the author doesn't unequivocally call a particular kind of criticism (documentary or movie) inherently superior. The first part of option (2) is correct, but the latter half makes it irrelevant because the logic of the author for the first part has nothing to do with the time college students and other viewers have on hand. Option (3) is incorrect because it is refuted by the author himself in the first paragraph when he says that what matters is determined by individual taste and not by media discussion. This leaves us with option (4), which the author would readily agree with since he mentions it in the fourth paragraph.

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Q.14

Which of the following is true as per a strict reading of the passage?

m that popular culture
able for the average central as they used to
ently and feed into one
ough much of quality TV
■ Bookmark

Option (1) is incorrect because nowhere does the passage mention a hierarchy of cultural forms. Option (2) is incorrect for similar reasons: the author never says quality TV is unsuitable for everyone who isn't a college student. Option (3) is correct because the author agrees with it in the second paragraph. Option (4) is incorrect because its exact opposite is claimed by the passage.

Directions for questions 13 to 15: The passage given below is followed by a set of three questions. Choose the most appropriate answer to each question.

In a new piece on Wired.com, "Could This Be the Year Movies Stopped Mattering?" Brian Raftery suggests that movies have "devolved from Culture-Conquering Pastime to merely Something to Do When the Wi-Fi's Down," and that their former centrality to the culture has been taken over by a diverse range of media events—serial television above all, but also Pokémon Go, "Hamilton," YouTube memes, and visual albums such as Beyoncé's "Lemonade." The simplest refutation is that what matters is determined not by media discussion but by each person for herself; movies matter to me, therefore they matter.

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Q.15

Which of the following best reflects the author's primary intent in the passage?

1 To show that Raftery's claim that movies have probably stopped mattering, is untrue.

2 To show that Raftery's claim is only partially true, to the extent forms which grab popular attention have undoubtedly changed.	where he highlights that the cultural
3 ○ To analyse why quality TV has acquired a more central place the journalists.	an movies, be it with viewers, critics or
$4 \bigcirc$ To discard the notion that popularity or media discussion has a movie or a TV series.	nything to do with the quality of either
Solution: Correct Answer : 2 Genre: Cultural Studies / Current Trend / Mass Media	■ Bookmark Shockmark Shockmark

Option (1) is only partially correct as option (2) goes into more detail about which part of Raftery's argument the author agrees with and which he doesn't.

Option (3), is incorrect as the process followed in the passage cannot be termed as analytical. The same criticism applies to option (4) which uses the term 'discard' which makes it incorrect.

Directions for questions 16-21: The following passage consists of a set of six questions. Read the passage and answer the questions that follow.

Jonathan Haidt's recent book on morality aims to explain "why good people are divided by politics and religion". In The Righteous Mind he says, yes, moral decisions are influenced by our intentional decision-making processes – the rational weighing up of alternatives, the assessment of right and wrong – but that this decision-making is really driven by underlying intuitions. This intuitive thinking does not involve rational thought but follows the logics of – and what would be advantages for – the social group or groups we happen to be a member of. In fact, we are less rational creatures than we are rationalising creatures, and the groups we participate in matter hugely and demand our attention.

Haidt uses religion as the exemplary social grouping, emphasising that it is cultural and social much more than it is belief-based – a "team sport". In so doing, however, he repeats one of the most deep-seated assumptions about religion (and non-religion) in contemporary thought: one that is, somewhat ironically, rationalist in nature. This is the view that, while religion is a "team sport", those that don't have it are defined by the absence of this kind of cultural and social commitment rather than the presence of an alternative one. We typically think of religion as cultural – a rich network of beliefs, symbols, practices and social relations – and non-religion as a purely intellectual critique of (some aspects of) these cultures.

Contrary to this, new anthropological work is beginning to show that being non-religious also involves a range of cultural and social manifestations. These manifestations are not organised into clear institutions – there is no Church of Atheism – and this means that they can't be so easily pointed to as we can to a Methodist chapel or Hasidic Jewish traditional dress. But they are there.

People who choose "secular" funerals do not pick images and ideas at random: they turn to an established lexicon of naturalist and other imagery and to certain secular as well as religious music. Those of the "New Atheist" persuasion celebrate and revere science in a way that helps them find meaning in their lives. And non-religious people often have an aversion to different kinds of religiosity and non-religiosity that come out in their choice of friends and, especially, romantic partners.

Richard Dawkins and other New Atheists are often criticised for failing to understand that being religious is not about beliefs – but about cultural practice and social participation. Yet criticising New Atheists for their "false beliefs" makes precisely the same mistake and reduces this culture to its propositional statements and knowledge claims. In fact, people are brought together and tied together by their different kinds of non-religious positions, and to criticise one of these cultures, the New Atheism, on the grounds that it does not appreciate that religion is a team sport is to miss the point that atheism, too, is a team sport.

Obsessing about how coherent the arguments of New Atheists are – rather than noticing how popular the movement is; the emotional feelings of recognition that some readers have in response to it; how people discuss New Atheism with each other and use it to help articulate shared non-religious positions – is to do precisely what critics would have the New Atheists stop doing. You don't have to share the New Atheists' beliefs to treat their culture with some respect – and are interested not in whether its claims are correct but in why people are drawn to it and what is underlying the anti-theist prejudices that are sometimes expressed in these claims. The notion that cultural and social investments are more important than beliefs is fine, but it has to cut both ways.

Q.16

According to the passage, what is the aim of the author Jonathan Heidt?

To express his views on the juxtaposition of rituals and rationalism

To understand the reason behind people combining religious beliefs with rational analysis

To explain how our rational decisions are driven by intuitional decisions

Solution:

Correct Answer: 4

GENRE: Book Review / Philosophy

Bookmark

Answer key/Solution

Option 1 is too broad. It goes beyond the scope of the passage. Options 2 and 3 are distorted. Option 4 is the main idea of the passage. The author does not try to understand instead he tries to explain how our rational decision is driven by our intuition.

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Q.17

Which of the following statements is true according to the passage?

1 More important than beliefs are the cultural and social aspects of a religion.

2 What new atheists don't understand is that being religious is not give cultural and social exercises associated with it.	ing into beliefs only but the
3 New Atheists consider religion as a team sport but same cannot be personal camaraderie while working in a field.	said about their display of
$4{}^{\bigcirc}$ A religious person should go through the non-atheists' propaganda religious.	before considering themselves
Solution: Correct Answer : 2	■ Bookmark
GENRE: Book Review / Philosophy	4 Answer key/Solution
Other options are all wrong as they contradict the given passage. Option the only correct answer here. Refer to the 1 st sentence of the 5 th paragra	

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Q.18

What is the assumption we make concerning religion according to Heidt?

1 • We often assume that religion is actually culturally and socially atheist or non-religious people critic that.	acceptable because of its beliefs;
2 \bigcirc We assume that religion is a team sport where beliefs are project	eted through priestly practices.
3 \bigcirc We assume that religion is a team sport and people expand their practices whereas atheists oppose these only by criticising.	beliefs through cultural and social
$4 \bigcirc$ We assume that religious people are not atheists. They are in the orthodox and a rigid mentality.	e due course of time possess an
Solution: Correct Answer : 3	■ Bookmark
GENRE: Book Review / Philosophy	م Answer key/Solution
Ontion 1 is incorrect since it is mentioned incorrectly Ontion 2 uses	the

Option 1 is incorrect since it is mentioned incorrectly. Option 2 uses the phrase 'priestly practices' which is out of context. Option 4 is far- fetched.

Option 3 is the only correct answer according to the given passage. Refer to the 2nd paragraph.

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Q.19

What according to the passage is a 'false belief' as far as new atheism is concerned?

1 • "False belief" is associated with new atheists understanding of relig on particular beliefs and not on cultural or social practices.	ion as they consider it based only
$2^{ \bigcirc}$ The atheists' understanding is based on rationality and scientific judy 'false belief'.	gement which is now termed
3 Calling the atheists' judgement of religious community a "false believed religious groups.	f" was prevalent among the
4 - "False belief" is associated with disregarding and disrespecting relig	ious sentiments of people.
Solution: Correct Answer: 1	■ Bookmark
GENRE: Book Review / Philosophy	& Answer key/Solution
Option 1 is the correct answer. Other options are incorrect and they either	r

Option 1 is the correct answer. Other options are incorrect and they either contradict the passage or they are out of context. "...other New Atheists are often criticised for failing to understand that being religious is not about beliefs – but about cultural practice and social participation."

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Q.20

What can be inferred from the last paragraph of the given passage?

1 The atheists believe that cultural association with sociology is important for a religion to thrive and make it rationally sustainable.		
2^{\bigcirc} Before concluding anything about new atheists, one must understand it and understand the prejudices involved.	d why people are getting drawn to	
3 O Social beliefs and cultural society often clash together; therefore one judgemental.	e must be observant and not	
$4 \bigcirc$ To remove prejudices in both rational and spiritual world one must un importance and values.	nderstand each other's	
Solution:	■ Bookmark	
Correct Answer : 2	M BOOKMark	
GENRE: Book Review / Philosophy	م Answer key/Solution	
Option 1 is beyond the scope of the given passage. Option 3 is far-fetche	d	

Option 1 is beyond the scope of the given passage. Option 3 is far-fetched therefore cannot be concluded or inferred. Option 4 is too generic and it does not respond to the given context. Option 2 is the only inference that can be drawn from the last paragraph. "New Atheists' beliefs to treat their culture with some respect – and are interested not in whether its claims are correct but in why people are drawn to it and what is underlying the anti-theist prejudices that are sometimes expressed in these claims."

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Q.21

Which of the following explains the word 'lexicon' correctly?

1 A book comprising biblical characters and facts

2 A reference book belonging to a branch of knowledge.

3 A collection of words used by atheists in a dictionary

4 A note book on neo-atheism describing the scientific ways to discard a particular religion

Solution:
Correct Answer: 2
GENRE: Book Review / Philosophy

Review / Philosophy

Option 2 is the only possible answer since it explains the word perfectly. Other options are all incorrect as they fail to define 'lexicon' accurately.

FeedBack

Q.22

The following question consists of a set of five sentences. These sentences need to be arranged in a coherent manner to create a meaningful paragraph. Type in the correct order of the sentences in the space provided below the question.

- 1. This might be felt as a lack of energy, reduced enjoyment in activities and a need for more sleep than normal.
- 2. In addition to depressive episodes, "sad" is characterised by various symptoms including chronic oversleeping and extreme carbohydrate cravings that lead to weight gain.
- 3. But for around 6% of the UK population and between 2-8% of people in other higher latitude countries such as Canada, Denmark and Sweden, these symptoms are so severe that these people are unable to work or function normally.
- 4. They suffer from a particular form of major depression, triggered by changes in the seasons, called seasonal affective disorder or Sad.
- 5. For many of us in the UK, the annual ritual of putting the clocks back for daylight saving time can be accompanied by a distinct feeling of winter blues as autumn well and truly beds in.

Solution:

Correct Answer: 51342

Sentence 5 opens the paragraph by talking about the topic of discussion ("winter blues"). Sentence 1 comes next by providing the explanation for "a distinct feeling of winter blues". Sentence 3 comes next by introducing "a more severe form of winter blues". Sentences 4 and 2 create a mandatory pair ("In addition...). So, 51342 is the correct order.

FeedBack

■ Bookmark

Answer key/Solution

0.23

The following question consists of a set of five sentences. These sentences need to be arranged in a coherent manner to create a meaningful paragraph. Type in the correct order of the sentences in the space provided below the question.

- 1. A car normally has a life of seven years and a second car is purchased not before five years by a common man, the official said.
- 2. Yet luxury brands like BMW, Jaguar, Audi, Mercedes, Porsche and Maserati sell almost 35,000 cars every year.
- 3. India has just 24.4 lakh tax payers who declared an annual income of over Rs.10 lakh yet 25 lakh new cars, including 35,000 luxury cars, are being bought every year for last five years, a top official said.
- 4. The income tax data collated shows only 48,417 persons reporting income of more than Rs.1 crore in a year.

■ Bookmark

Answer key/Solution

5. The tax returns when compared with car sales throw astonishing numbers, he said.

Solution:

Correct Answer: 35142

There are two mandatory pairs in this paragraph. Sentences 3, 5, and 1 create a mandatory sequence (a top official...he said...the official said.) Sentence 5 comes after 3 as it talks about the topic and acts as an introduction to the problem at hand i.e. the discrepancy between the number of tax payers and

the number of car buyers. Sentences 4 and 2 create a mandatory pair too. Sentence 3 will open the paragraph as it is more generic in nature. Hence, the correct sequence is 35142.

FeedBack

Q.24

The following question consists of a paragraph followed by four summaries. Choose the option that best captures the essence of the paragraph. Type in the option number in the space provided below the question.

Many of Ray's early films end hopefully, even in their ambivalence. Charulata, for instance, doesn't conclude so much as come to a standstill with a series of photographs: Charu's half-lit face; her husband's half-lit face; their hands not quite touching, but reaching out hesitantly. But given the loss of trust in their relationship, would the hands have been extended at all? Ray seems naïve in this light, despite his superior sensibility

- 1. Because of the sense of ambivalence he used to end his films, Ray wanted to express the same thing in his later films but failed.
- 2. Despite being sensible, Ray's early films projected a sense of childish hopefulness in spite of the apparent ambivalence.
- 3. Despite the ambivalence, Ray's films projected a childlike maturity which often ended hopefully, thus making the films cater to every kind of audience.
- 4. Charulata, being one of Ray's earlier works, lacks maturity but promotes hope and epitomizes Ray's fascination for childlike narration.

Correct Answer: 2

Option 1 is farfetched as it talks about his later films which have not been discussed here. Option 3 summarises the passage partially but it ends with a different context altogether. The passage doesn't deal with Ray's films being universal. Option 4 is also partially correct. There is no discussion of Ray's fascination for childlike narration. Option 2 summarises the paragraph correctly.

Bo	ol	km	ar	k

Answer key/Solution

FeedBack

Directions for questions 25-30: The following passage consists of a set of six questions. Read the passage and answer the questions that follow.

In 1988, renowned linguist and political scholar Noam Chomsky co-authored a book with Edward S. Herman in which he posited that the Western corporate media "manufactured consent" in the interests of dominant and elite groups in society. Chomsky, who is admired for his intellect by some and accused of anti-US leanings by others, argued that propaganda is pervasive in the so-called free media of the West.

A lot has changed in the twenty seven years since Manufacturing Consent was published. Namely, the media ownership models that Chomsky criticized have changed, and that landscape has transformed, largely due to the advent of social media and other online platforms.

Still, Chomsky believes little has changed in his Manufacturing Consent model. In an interview with Byline, Chomsky discussed media landscape, saying that despite the influx of new sources and new platforms, his "basic analysis is still the same."

Though the influence and reach of traditional media conglomerates has waned in the wake of alternative platforms, like Facebook and Twitter, Chomsky maintains that the public's access to information is limited through the same framework.

"I don't look at Twitter because it doesn't tell me anything," He said, "It tells me people's opinions about lots of things, but very briefly and necessarily superficially, and it doesn't have the core news."

"There are journalists there on the scene where major events are taking place and, now there are fewer of them than before, so that's a narrowing of the sources of news," he argued, "What you see is local news, pieces from the wire services, some pieces for The New York Times, and very little else."

Another issue that continues to dominate the media-sphere, according to Chomsky, is the reliance on advertising. In Manufacturing Consent, he wrote that media organizations, for all intents and purposes, are businesses, and as such, are driven by consumer demand. In the case of the news media, the consumers are advertisers. This means that, we, as news media viewers, are the product that is being sold to advertisers. This model, according to Chomsky, is still very alive and well today.

"The product that is being presented to the market is readers (or viewers)," He explained, "So these are basically major corporations providing audiences to other businesses, and that significantly shapes the nature of the institution."

What is happening today, with organizations like BuzzFeed using "native advertising" – advertising that matches the content of a news article or story – "is an intensification of something which shouldn't exist."

During the interview, Chomsky also touched upon the NSA scandal that was covered by The Guardian and The Washington Post after Edward Snowden leaked documents capturing the agency's invasive surveillance program.

Asked if he thinks the coverage of the NSA scandal defeats his model, since it works against "elite groups", Chomsky said no. "The business model is quite willing to tolerate the exposure of governments intervening in personal life...as they don't want a powerful and intrusive state." He explained.

He additionally stressed that today's business do more in the way of violating privacy than the government agencies like the NSA, specifically because of the reliance on advertising.

"With Google, and others of course, there is an immense amount of surveillance to try to obtain personal data about individuals and their habits and interactions and so on, to shape the way information is presented to them. They do more surveillance than the NSA."

0.25

Chomsky's critique of media practices puts the onus on:

- 1 theskewed retelling of events in favour of sensationalism.
- 2 theskewed retelling of events in favour of white male Caucasian privileges.
- 3 theskewed retelling of events in favour of nonpareil citizens.
- 4 The skewed retelling of events in favour of upper middle class ethos.

Solution:

Correct Answer: 3

GENRE: Cultural Studies / Media Studies

■ Bookmark

Answer key/Solution

The opening paragraph states how Chomsky theorized that the so called free press of the West manufactures consent in favour of dominant and elite groups. 1 and 2 go beyond the scope of the passage. 4 is wrong since, upper middle class do not equate to 'dominant and elite groups'.

FeedBack

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Q	•	2	6
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As per the passage, which of the following is true regarding Chomsky's critique and its relevance today?

- 1 Chomsky's theory relied on print media, but with the onset of digital media the former does not hold any appeal.
- 2 Chomsky was critiquing the media during the Cold War years and hence he is no longer relevant.
- $3 \bigcirc$ Chomsky's critique is still relevant since the platform of media has remained unchanged.

4 Chomsky's critique is centred on certain practices and, hence, although the landscape has changed a lot, the practices remain the same and justify his theory.

Solution:

Correct Answer: 4

GENRE: Cultural Studies / Media Studies

م Answer key/Solution

■ Bookmark

The passage clearly states how Chomsky believes that, despite changes in platform, the practice remains the same. The other options are factually incorrect.

FeedBack

Directions for questions 25-30: The following passage consists of a set of six questions. Read the passage and answer the questions that follow.

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He additionally stressed that today's business do more in the way of violating privacy than the government agencies like the NSA, specifically because of the reliance on advertising.

"With Google, and others of course, there is an immense amount of surveillance to try to obtain personal data about individuals and their habits and interactions and so on, to shape the way information is presented to them. They do more surveillance than the NSA."

0.27

According to the passage, other than manufacturing consent, which aspect of the media does Chomsky criticize?

- 1 A limitation of information alongside biased reporting
- 2 An influenced retelling alongside biased reporting
- 3 A de-contextualized presentation of facts alongside biased reporting
- 4 A predisposed view of events alongside biased reporting

Solution:

Correct Answer: 1

GENRE: Cultural Studies / Media Studies

■ Bookmark

Answer key/Solution

2 and 4 are wrong since, 'influenced' and 'predisposed reporting' are synonymous with 'biased' reporting. They do not add to any further opinions.

3 is logically irrelevant here. 1 is the correct answer since in the passage Chomsky himself mentions that, 'Chomsky maintains that the public's access to information is limited through the same framework'.

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Q.28

How do the media conglomerates perceive their primary constituencies?

- $1 \bigcirc$ As intelligent and perceptive people, since they are catering to the news provided by the organisations
- 2 As Impressionable artefacts whose views can be moulded and tastes catered to other organisations

- 3 As elite personnel who buy advertisements and thus creating a business cycle
- 4 As commodities who can be catered to the dominant and elite groups of society

Correct Answer: 2

GENRE: Cultural Studies / Media Studies

■ Bookmark

Answer key/Solution

It has been established beforehand that consent is manufactured among people who read or view news. This proves that they are impressionable.

Chomsky further contends that the viewer or reader is also perceived as a commodity and sold to advertisers. 1, 3, and 4 are factually incorrect and hence shall be eliminated.

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0.29

From Chomsky's quoted interview, which of the following perception can one draw regarding authority?

- 1 A powerful governmental body is necessary for the media houses to blossom.
- 2 Media houses prefer weakened authority figures as they are less likely to question their practices.
- 3 Media houses aid governmental snooping and thus form a symbiotic partner of the government in ensuring the former's hegemony.
- 4 Media houses would eventually look forward to appointing their own government.

Solution:

Correct Answer: 2

GENRE: Cultural Studies / Media Studies

■ Bookmark

Answer key/Solution

In the passage it is mentioned that, 'During the interview, Chomsky also touched upon the NSA scandal that was covered by The Guardian and The

Washington Post after Edward Snowden leaked documents capturing the agency's invasive surveillance program. Asked if he thinks the coverage of the NSA scandal defeats his model, since it works against "elite groups", Chomsky said no. "The business model is quite willing to tolerate the exposure of governments intervening in personal life...as they don't want a powerful and intrusive state." He explained'. The other options are logically irrelevant here and go beyond the scope of the passage.

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0.30

Which of the following point can be used to differentiate between surveillance practices of governments and media houses working in tandem with business organisations?

- 1 OGovernmental surveillance focuses on the private rather than the public.
- 2 Governmental surveillance focuses on the private and public rather than on a particular aspect.
- 3 Governmental surveillance focuses on market factors rather than on social factors.
- 4 Governmental surveillance focuses on big agencies rather than manufacturing consent through surveillance.

Solution:

Correct Answer: 2

GENRE: Cultural Studies / Media Studies

■ Bookmark

Answer key/Solution

Chomsky mentions how big media houses do not want an intrusive government. This shows that surveillance practiced by the government

focuses on every aspect of society. 1 provides an incomplete view and hence shall be eliminated. 4 is partially true, since media organisations themselves are wary of surveillance practices of governments, however this point skips the fact that ordinary people too fall under governmental snooping. 3 is logically irrelevant here.

FeedBack

Q.31

The following question consists of a set of five sentences. These sentences need to be arranged in a coherent manner to create a meaningful paragraph. Type in the correct order of the sentences in the space provided below the question.

- 1. Inside a converted factory is the HQ of Stella McCartney's design business.
- 2. Also, across the cacophonous link-road that connects the A40 to Shepherd's Bush is the ever-expanding Westfield shopping centre.
- 3. It's only a small corner of west London, but it speaks volumes about the recent history of the city.
- 4. And looming over everything is an unspeakably unsettling symbol of the 21st-century capital and its awful inequalities: what remains of Grenfell Tower.
- 5. Two minutes' walk away is a similarly refurbished building now owned and used by the photographer Mario Testino.

Solution:

Correct Answer: 31524

Sentence 3 talks about West London. So, it is the best sentence to introduce the topic. "Volumes about its history" is further expanded by sentences 1 and

م Answer key/Solution

■ Bookmark

5. They form a mandatory pair ("similarly refurbished). Sentence 4 has to be the concluding line since it finishes the paragraph with an air of finality.

Sentence 2 could have come after sentence 5 because of "also". Hence, 31524 is the correct answer.

FeedBack

Q.32

Directions for question 32: The following question consists of a paragraph followed by four summaries. Choose the option that best captures the essence of the paragraph. Type in the option number in the space provided below the question.

This sympathy did not blind Gandhi to the requirements of justice for those communities already resident in Palestine. If the Jews needed a national home, why should the Arabs pay for it? He was distressed that Jews from Europe had sought to enter Palestine 'under the shadow of the British gun.' A 'religious act', he insisted, 'cannot be performed with the aid of the bayonet or the bomb'. If the Jews wanted to settle in Palestine, they should do so 'only by the goodwill of the Arabs'. As things stood, however, the Jews had become 'co-sharers with the British in despoiling a people who have done no wrong to them'.

- 1. Gandhi criticised the Jewish invasion of Palestine under the British patronage by pointing out the logical fallacy inherent in the act.
- 2. Gandhi criticised the Jewish settlement in Palestine by pointing out that two wrongs cannot make a situation right.
- 3. Gandhi criticised the Jewish occupation of Palestine by pointing out the unfairness of the act towards the natives of the land.
- 4. Gandhi criticised the European occupation of Palestine by pointing out the biased English patronage that favoured foreigners over the natives.

Solution:

Correct Answer: 3

The main point of the passage is Gandhi's views on the rights of the natives of Palestine who have suffered as a result of the Jews settling in Palestine.

Options 1 and 2 are wrong as they go beyond the scope of the paragraph.

Option 3 best captures the essence of the paragraph. Option 4 comes close but it can be eliminated as Jews can't be equated with the broad term "European".

FeedBack

Q.33

Directions for question 33: In this question, five sentences are given. Of these, four sentences can be logically sequenced to make a coherent paragraph. One of the sentences does not belong to the paragraph. Type in the sentence number that doesn't fit into the paragraph.

- 1. We think that these contentions are correct and must be upheld.
- 2. It is equally clear that nobody saw who killed Bhagwan.
- 3. The postmortem examination disclosed that he had sustained as many as thirteen injuries, eleven of which were incised on different parts of the body.
- 4. The evidence of Naiku shows clearly enough that neither he nor other persons whom he called saw the appellant.
- 5. The injuries inflicted on the head and face had out through skull bones and the doctor who held the postmortem examination was of the opinion that Bhagwan had died as a result of fractures of the skull bones and hemorrhage and shock.

■ Bookmark

Correct Answer: 1

The correct order is 3524. The entire paragraph talks about the murder of a certain person. Sentence 1 talks about "these contentions". The paragraph doesn't have any contention or argument. It simply gives us facts related to a particular murder. Sentence 2 can be a contention but it is singular in nature and can't justify "contentions" in the sentence. Hence, sentence 1 is the odd one out.

FeedBack

■ Bookmark

Answer key/Solution

Q.34

Directions for question 34: In this question, five sentences are given. Of these, four sentences can be logically sequenced to make a coherent paragraph. One of the sentences does not belong to the paragraph. Type in the sentence number that doesn't fit into the paragraph.

- 1. Jerusalem Syndrome is a well-documented phenomenon where foreign visitors suffer psychotic delusions that they are figures from the Bible or harbingers of the End of Days.
- 2. Evidence of the Jerusalem Syndrome dates back to Medieval times and observers throughout the centuries have noted the air of madness that seems to hang over pilgrimage sites.
- 3. Many more incidents go undocumented on the streets of Jerusalem's Old City.
- 4. Israel's health ministry records around 50 cases a year where a tourist's delusions are so strong that police or mental health professionals are forced to intervene.
- 5. An Irish schoolteacher who came to a Jerusalem hospital convinced she was about to give birth to the Baby Jesus when in fact she was not even pregnant.

Solution:

Correct Answer: 2

The correct order is 1543. Sentence 1 introduces Jerusalem syndrome.

Sentence 5 gives an example of visitors suffering from this syndrome.

Sentences 4 and 3 talk about the hospitals of Israel. Sentence 2 is the odd one out as it talks about "cities" in general and not Israel.

FeedBack

■ Bookmark

In the following 3×3 grid, each cell has a distinct letter from among a to i. These nine letters are distinct single digit natural numbers.

	C ₁	C_2	C ₃
R ₁	a	d	g
R_2	b	e	h
R_3	С	f	i

Further, it is known that:

- (I) The product of the numbers in row R_3 is twice their sum. The same is also true for column C_2 .
- (II) Except column C₁, every column has exactly one even number.
- (III) The six digit number 'fdbieh' when multiplied by 3 gives 'dbiehf'.

Q.35 What is the value of a?
1 0 6
2 ○ 9
3 2
4 0 7

Solution:

Correct Answer: 1

Product of the digits is twice the sum of the digits is possible in only two cases i.e. 1, 3, 8 and 1, 4, 5. One can check this by taking one of the numbers as 1 because if all numbers are more than 1, it would never be possible. Even in the smallest case i.e. 2, 3, 4 the product is more than twice the sum. Now f must be 1 as C_2 and R_3 both need 1 as one of the numbers. Now, 1dbieh when multiplied by 3 gives dbieh1. Here h must be 7 as h multiplied by 3 gives 1. A carryover of 2 will be added to 3×e to have h i.e. 7 so 'e' must be 5. Similarly, a carryover of 1 will be added to 3×i to have 'e' i.e. 5 so 'i' must be 8. And proceeding in the same manner we get d = 4 and b = 2. Further analysis leads to the following table:

	C ₁	C ₂	C₃
R_1	6	4	9
R_2	2	5	7
R_3	3	1	8

The value of a = 6

FeedBack

■ Bookmark

In the following 3×3 grid, each cell has a distinct letter from among a to i. These nine letters are distinct single digit natural numbers.

	C ₁	C_2	C ₃
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R_2	b	e	h
R_3	С	f	i

Further, it is known that:

- (I) The product of the numbers in row R₃ is twice their sum. The same is also true for column C₂.
- (II) Except column C₁, every column has exactly one even number.
- (III) The six digit number 'fdbieh' when multiplied by 3 gives 'dbiehf'.

Q.36

What is the product of values of c, d and i?

1 0 120

2 0 160

3 96

4 None of these

Solution:

Correct Answer: 3

Product of the digits is twice the sum of the digits is possible in only two cases i.e. 1, 3, 8 and 1, 4, 5. One can check this by taking one of the numbers as 1 because if all numbers are more than 1, it would never be possible. Even in the smallest case i.e. 2, 3, 4 the product is more than twice the sum. Now f must be 1 as C_2 and R_3 both need 1 as one of the numbers. Now, 1dbieh when multiplied by 3 gives dbieh1. Here h must be 7 as h multiplied by 3 gives 1. A carryover of 2 will be added to 3×e to have h i.e. 7 so 'e' must be 5. Similarly, a carryover of 1 will be added to 3×i to have 'e' i.e. 5 so 'i' must be 8. And proceeding in the same manner we get d = 4 and b = 2. Further analysis leads to the following table:

	C ₁	C ₂	C ₃
R_1	6	4	9
R_2	2	5	7
R ₃	3	1	8

The product of c, d and i is 96

FeedBack

■ Bookmark

In the following 3×3 grid, each cell has a distinct letter from among a to i. These nine letters are distinct single digit natural numbers.

	C ₁	C_2	C ₃
R ₁	a	d	g
R_2	b	e	h
R ₃	С	f	i

Further, it is known that:

- (I) The product of the numbers in row R₃ is twice their sum. The same is also true for column C₂.
- (II) Except column C₁, every column has exactly one even number.
- (III) The six digit number 'fdbieh' when multiplied by 3 gives 'dbiehf'.

0.37

The absolute difference of values of g and d is equal to the value of

The absolute difference of values of g and u is equal to the value of	
1	
2 ○ e	
3 ○ c	
4 ○ i	

Solution:

Correct Answer: 2

Product of the digits is twice the sum of the digits is possible in only two cases i.e. 1, 3, 8 and 1, 4, 5. One can check this by taking one of the numbers as 1 because if all numbers are more than 1, it would never be possible. Even in the smallest case i.e. 2, 3, 4 the product is more than twice the sum. Now f must be 1 as C_2 and R_3 both need 1 as one of the numbers. Now, 1dbieh when multiplied by 3 gives dbieh1. Here h must be 7 as h multiplied by 3 gives 1. A carryover of 2 will be added to 3×e to have h i.e. 7 so 'e' must be 5. Similarly, a carryover of 1 will be added to 3×i to have 'e' i.e. 5 so 'i' must be 8. And proceeding in the same manner we get d = 4 and b = 2. Further analysis leads to the following table:

	C ₁	C ₂	C ₃
R_1	6	4	9
R_2	2	5	7
R ₃	3	1	8

The difference of g and d is 5 which is equivalent to the value of e.

FeedBack

■ Bookmark

In the following 3×3 grid, each cell has a distinct letter from among a to i. These nine letters are distinct single digit natural numbers.

	C ₁	C_2	C_3
R ₁	a	d	g
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Further, it is known that:

- (I) The product of the numbers in row R₃ is twice their sum. The same is also true for column C₂.
- (II) Except column C₁, every column has exactly one even number.
- (III) The six digit number 'fdbieh' when multiplied by 3 gives 'dbiehf'.

Q.38

The sum of the values of letters in C₃ is twice of the sum of values of letters in

1 O R ₃	
2 O R ₂	
3 ○ R ₁	

4 None of the rows

Solution:

Correct Answer: 1

Product of the digits is twice the sum of the digits is possible in only two cases i.e. 1, 3, 8 and 1, 4, 5. One can check this by taking one of the numbers as 1 because if all numbers are more than 1, it would never be possible. Even in the smallest case i.e. 2, 3, 4 the product is more than twice the sum. Now f must be 1 as C_2 and R_3 both need 1 as one of the numbers. Now, 1dbieh when multiplied by 3 gives dbieh1. Here h must be 7 as h multiplied by 3 gives 1. A carryover of 2 will be added to 3×e to have h i.e. 7 so 'e' must be 5. Similarly, a carryover of 1 will be added to 3×i to have 'e' i.e. 5 so 'i' must be 8. And proceeding in the same manner we get d = 4 and b = 2. Further analysis leads to the following table:

	C ₁	C ₂	C ₃
R_1	6	4	9
R_2	2	5	7
R ₃	3	1	8

The sum of all the number in C₃ is 24 which is twice of the sum of all the numbers in R₃.

FeedBack

■ Bookmark

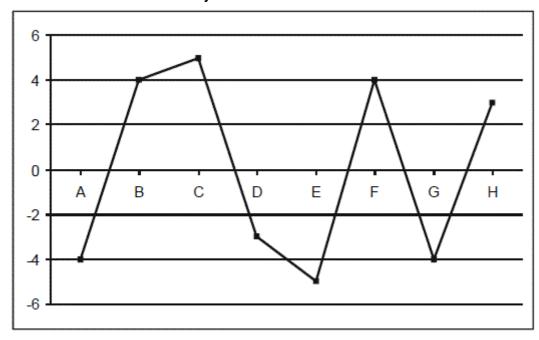
Eight teams – Akabu (A), Bekabu (B), Chikabu (C), Dikabu (D), Ekabu (E), Fekabu(F), Gikabu (G) and Hakabu (H) – participated in a famous tournament namely Anaariyon ka Anaari held in Sikabu island. At the end of the tournament the eight teams were ranked according to their performance, i.e best team was ranked 1 and worst team was ranked 8. Before the tournament started, the king of Sibaku island, Moya, predicted the rank for the eight teams. The following table represents the difference between the ranks predicted by the king of some of the pairs out of the eight teams.

For example, rank of team B predicted by the king was numerically 4 more than that of team E, and the rank of team D predicted by the king was numerically 2 less than that of team A.

	Α	В	D	Е	G	Н
Α					1	
B C D				4		
С		3				
D	-2					
Е						
F						
F G H						
H					4	

The following graph shows comparison viz-a-viz the rank predicted by the king and the actual rank of the eight teams at the end of the tournament.

For example, the rank of team A predicted by the king before the tournament was numerically 4 less than the actual rank of team A at the end of the tournament, and the rank of team B predicted by the king before the tournament was numerically 4 more than the actual rank of team B at the end of the tournament.



Q.39
What was the absolute difference between the actual ranks of Akabu and Hakabu at the end of the tournament?

	-	
2		1
_		

3 0 4

4 Cannot be determined

Solution:

Correct Answer: 3

Let the rank of E predicted by the king be x.

Rank of B and C will be x + 4 and x + 7, so the only possible value of x is 1 (as x + 7 must be less than or equal to 8). The rank of E, B and C will be 1, 5 and 8 respectively.

Let the rank of G be y. The rank of H and D will be y + 4 and y - 1.

Now, value of y must be 3.

 \therefore The rank of G, A and D will be 3, 4 and 2 respectively Based on the graph actual rank is calculated.

The predicted (P) and actual (A) ranks are given below.

	Р	Α
Α	4	8
В	5	1
С	8	3
D	2	5
Ε	1	6
F	6	2
G	3	7
Н	7	4

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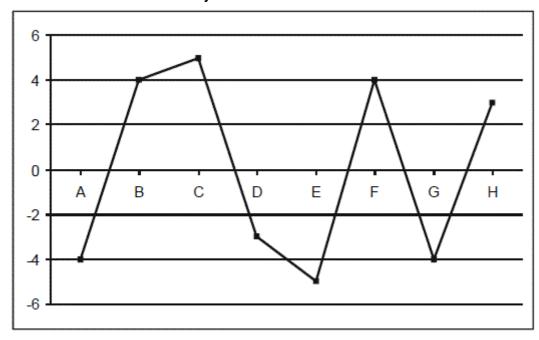
Eight teams – Akabu (A), Bekabu (B), Chikabu (C), Dikabu (D), Ekabu (E), Fekabu(F), Gikabu (G) and Hakabu (H) – participated in a famous tournament namely Anaariyon ka Anaari held in Sikabu island. At the end of the tournament the eight teams were ranked according to their performance, i.e best team was ranked 1 and worst team was ranked 8. Before the tournament started, the king of Sibaku island, Moya, predicted the rank for the eight teams. The following table represents the difference between the ranks predicted by the king of some of the pairs out of the eight teams.

For example, rank of team B predicted by the king was numerically 4 more than that of team E, and the rank of team D predicted by the king was numerically 2 less than that of team A.

	Α	В	D	Е	G	Н
Α					1	
B C D				4		
С		3				
D	-2					
Е						
F						
F G						
Н					4	

The following graph shows comparison viz-a-viz the rank predicted by the king and the actual rank of the eight teams at the end of the tournament.

For example, the rank of team A predicted by the king before the tournament was numerically 4 less than the actual rank of team A at the end of the tournament, and the rank of team B predicted by the king before the tournament was numerically 4 more than the actual rank of team B at the end of the tournament.



Q.40 Which team ended with rank 1 at the end of the tournament?

1 Akabu

2 Dikabu

3 Dekabu

4 Cannot be determined

Solution:

Correct Answer: 3

Let the rank of E predicted by the king be x.

Rank of B and C will be x + 4 and x + 7, so the only possible value of x is 1 (as x + 7 must be less than or equal to 8). The rank of E, B and C will be 1, 5 and 8 respectively.

Let the rank of G be y. The rank of H and D will be y + 4 and y - 1.

Now, value of y must be 3.

.. The rank of G, A and D will be 3, 4 and 2 respectively Based on the graph actual rank is calculated.

The predicted (P) and actual (A) ranks are given below.

	Р	Α
Α	4	8
В	5	1
С	8	3
D	2	5
Ε	1	6
F	6	2
G	3	7
Н	7	4

Bekabu was the champion.

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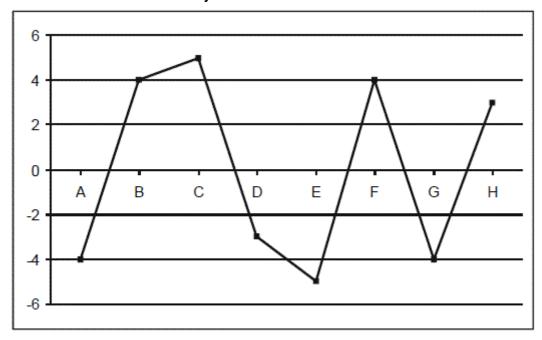
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For example, rank of team B predicted by the king was numerically 4 more than that of team E, and the rank of team D predicted by the king was numerically 2 less than that of team A.

	Α	В	D	Е	G	н
Α					1	
A B				4		
С		3				
D	-2					
Е						
D E F						
G H						
Н					4	

The following graph shows comparison viz-a-viz the rank predicted by the king and the actual rank of the eight teams at the end of the tournament.

For example, the rank of team A predicted by the king before the tournament was numerically 4 less than the actual rank of team A at the end of the tournament, and the rank of team B predicted by the king before the tournament was numerically 4 more than the actual rank of team B at the end of the tournament.



Q.41

King Moya arranged a Royal dinner for the captains of all the eight teams. The captains were asked to sit around a circular table such that the absolute difference between the actual ranks of teams of any two captains sitting diametrically opposite is k. If the value of k is maximum possible, then which of the following team captains were sitting diametrically opposite to each other?

- 3 Akabu and Ekabu
 - 4 None of these

Correct Answer: 2

Let the rank of E predicted by the king be x.

Rank of B and C will be x + 4 and x + 7, so the only possible value of x is 1 (as x + 7 must be less than or equal to 8). The rank of E, B and C will be 1, 5 and 8 respectively.

Let the rank of G be y. The rank of H and D will be y + 4 and y - 1.

Now, value of y must be 3.

.. The rank of G, A and D will be 3, 4 and 2 respectively Based on the graph actual rank is calculated.

The predicted (P) and actual (A) ranks are given below.

	Р	Α
Α	4	8
В	5	1
С	8	3
D	2	5
Ε	1	6
F	6	2
G	3	7
Н	7	4

Maximum possible value for k can be 4.

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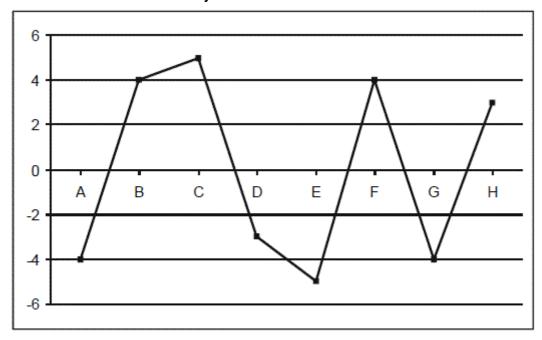
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For example, rank of team B predicted by the king was numerically 4 more than that of team E, and the rank of team D predicted by the king was numerically 2 less than that of team A.

	Α	В	D	Е	G	н
Α					1	
B C D E F				4		
С		3				
D	-2					
Е						
F						
G						
Н					4	

The following graph shows comparison viz-a-viz the rank predicted by the king and the actual rank of the eight teams at the end of the tournament.

For example, the rank of team A predicted by the king before the tournament was numerically 4 less than the actual rank of team A at the end of the tournament, and the rank of team B predicted by the king before the tournament was numerically 4 more than the actual rank of team B at the end of the tournament.



Q.42

The currency of Sikabu is Bhutta. The king decided the prize money (in Bhutta) awarded to each team is given as: $100000 - (r - 1) \times 10,000$, where r represents the actual rank of that team at the end of the tournament. What is the sum of the prize money (in Bhutta) received by Akabu and Bekabu?

2 0 120000		
3 0 100000		
4 Cannot be determined		

Correct Answer: 1

Let the rank of E predicted by the king be x.

Rank of B and C will be x + 4 and x + 7, so the only possible value of x is 1 (as x + 7 must be less than or equal to 8). The rank of E, B and C will be 1, 5 and 8 respectively.

Let the rank of G be y. The rank of H and D will be y + 4 and y - 1.

Now, value of y must be 3.

.. The rank of G, A and D will be 3, 4 and 2 respectively Based on the graph actual rank is calculated.

The predicted (P) and actual (A) ranks are given below.

	Р	Α
Α	4	8
В	5	1
С	8	3
D	2	5
Е	1	6
F	6	2
G	3	7
Н	7	4

Prize money received by Akabu = 30,000 and price money received by Bekabu = 1,00,000

.: Total = 1,30,000.

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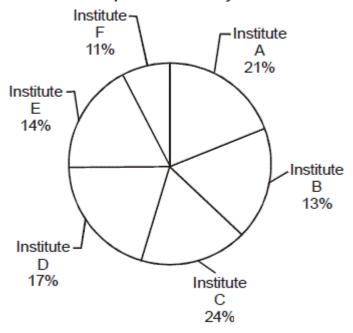
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Answer key/Solution

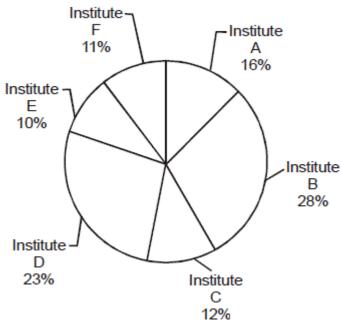
Directions for questions 43 to 46: Answer the questions on the basis of the information given below.

The pie charts given below show institute-wise break-up of fees collected by leading B-Schools, and the break-up of number of students enrolled in these institutes in the year 2015.

Break-up of fees in the year 2015



Break-up of number of students in the year 2015



It is also known that the total fees collected by the six institutes put together in 2016 is 2.5 times that of in 2015.

Q.43

If the ratio of the number of students enrolled with institute E in 2015 and that in 2016 was 7:8, and the average fees per student collected by the institute in both years was the same, then by what percentage did the total fees collected by institute E increased from 2015 to 2016?

"Fill 1 if your answer is 25%"

"Fill 2 if your answer is 16.67%"

"Fill 3 if your answer is 14.28%"

"Fill 4 if your answer is 12.5%"

Correct Answer: 3

Let the total fees collected by all institutes in 2015 be 100x. Thus the fees collected in 2016 be 250x.

Let the number of students enrolled with institute E be 7k in 2015 and 8k in 2016.

Since, the average fees collected by the institute for the two year is the same,

$$\frac{14x}{7k} = \frac{y}{8k}$$
, where y is the total fees collected by

institute E in 2016.

$$\Rightarrow$$
 y = 16x.

Hence, the percentage increase in the fees collected

by the institute E =
$$\frac{16-14}{14} \times 100 = 14.28\%$$
.

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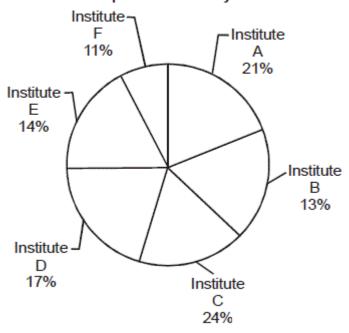


Answer key/Solution

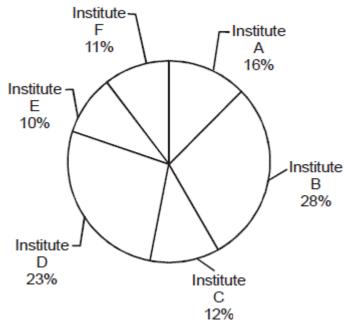
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The pie charts given below show institute-wise break-up of fees collected by leading B-Schools, and the break-up of number of students enrolled in these institutes in the year 2015.

Break-up of fees in the year 2015



Break-up of number of students in the year 2015



It is also known that the total fees collected by the six institutes put together in 2016 is 2.5 times that of in 2015.

Q.44

If the ratio of the share of institute A out of the fees collected by the six institutes put together in 2015 to the share of institute A out of the fees collected by the six institutes put together in 2016 is 3:5, find the percentage increase in the number of students enrolled in institute A from 2015 to 2016, given that the average fees collected per student by the institute was the same in both the years.

"Fill 1 if your answer is 266.67%"

"Fill 2 if your answer is 283.5%"

"Fill 3 if your answer is 307.5%"

"Fill 4 if your answer is 316.67%"

Correct Answer: 4

Let the total fees collected by all institutes in 2015 be 100x. Thus the fees collected in 2016 be 250x.

As the ratio of market share for institute A is 3:5, and share of A in 2015 was 21%, share of A in 2016 will be 35%.

Thus, the total fees collected by institute A in 2016 = 35% of 250x = 175x/2.

Let the number of students with institute A in 2015 and 2016 be S_1 and S_2 respectively.

Since the average fees collected by the institute A is same for the two years,

$$\frac{21x}{S_1} = \frac{175x}{2S_2}$$

$$\Rightarrow \frac{42x}{S_1} = \frac{175x}{S_2} \Rightarrow \frac{S_2}{S_1} = \frac{25}{6}$$

Hence, percentage increase in the number of students

of institute A =
$$\frac{(25-6)}{6} = \frac{19}{6} \times 100 = 316.67\%$$
.

FeedBack

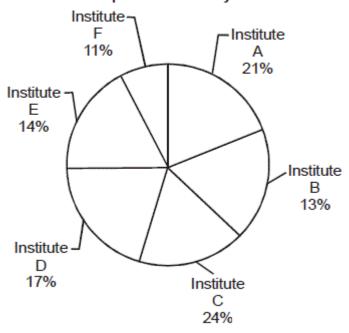
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♠ Answer key/Solution

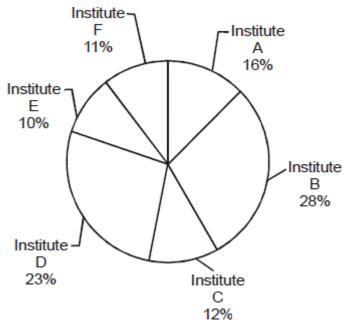
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The pie charts given below show institute-wise break-up of fees collected by leading B-Schools, and the break-up of number of students enrolled in these institutes in the year 2015.

Break-up of fees in the year 2015



Break-up of number of students in the year 2015



It is also known that the total fees collected by the six institutes put together in 2016 is 2.5 times that of in 2015.

Q.45

If the total number of students in the six institutes put together was the same in 2015 and 2016, and the institute C witnessed an increase of 33.33% in the number of students enrolled in 2016 compared to 2015 and the average fees per student collected by it witnessed an increase of 25% in 2016 compare to that in 2015, find the percentage change in the percentage share of C out of the total fee collected by the six institutes from 2015 to 2016.

"Fill 1 if your answer is 50%"

"Fill 2 if your answer is 33.33%"

"Fill 3 if your answer is 25%"

"Fill 4 if your answer is 20%"

Correct Answer: 2

Let the total fees collected by all institutes in 2015 be 100x. Thus the fees collected in 2016 be 250x.

Let the total number of students enrolled in both the years be 100.

So, C has 12 students in 2015 and hence 16 students in 2016 (since it has been increased by 33.33%). Let the total fees collected by C in 2016 be y.

The average fees per student collected by C in both

these years are
$$\frac{24x}{12}$$
 and $\frac{y}{16}$.

Since the average fees collected per student has

increased by 25%
$$\Rightarrow \frac{y}{16} = 1.25 \times \frac{24x}{12} \Rightarrow y = 40x$$
.

Therefore, y has 16% of total fees collected by all the six institutes in 2016.

Hence percentage change =
$$\frac{24-16}{24} \times 100 = 33.33\%$$
.

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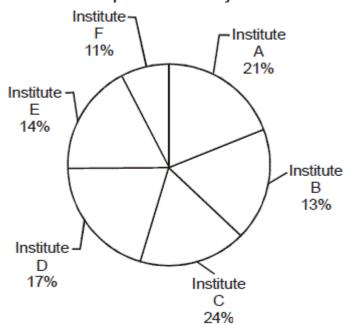
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Answer key/Solution

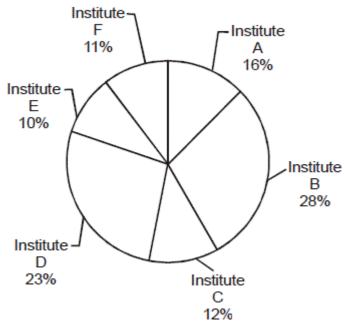
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Break-up of fees in the year 2015



Break-up of number of students in the year 2015



It is also known that the total fees collected by the six institutes put together in 2016 is 2.5 times that of in 2015.

Q.46

If all the institutes collected equal fees in 2016, then what is the ratio of fees collected by institute C in 2015 to the fees collected by institute B in 2016?

"Fill 1 if your answer is 6:7"

"Fill 2 if your answer is 12 : 35"

"Fill 3 if your answer is 72: 125"

"Fill 4 if your answer is 36: 125"

Correct Answer: 3

Let the total fees collected by all institutes in 2015 be 100x. Thus the fees collected in 2016 be 250x.

In 2016, all the institutes collected equal fees i.e., (250x/6).

Hence the required ratio = 24x: $\frac{250x}{6}$ = 72 : 125.

FeedBack



Answer key/Solution

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

Suruchi invited her 19 friends to her home to celebrate her birthday. By midnight, they were all tired and decided to play a game. Each friend including Suruchi was assigned a unique integer from 1 to 20, such that the friend who was assigned 1 was known as player 1, the friend who was assigned 2 was known as player 2 and so on. In the first game, player 1 lost; in the second game, player 2 lost; in the third game, player 3 lost; and so on. Before the starting of the game, each of the friends had some amount. As per the rules of the game, if any player loses a game, he/she would give an amount of money to each of the other 19 players what he or she already had. For example, if player 1 lost, he would give the other 19 players some money. He would give player 2 the amount of money that player 2 already had in his pocket at that time. Player 3 would be given the amount of money that player 3 had in his pocket, and the rest of the friends would be paid accordingly. Finally, after the 20th game, the amount of money left with each player was the same and is "X".

0.47

What was the approximate value of money in terms of "X", with player 4 at the beginning.

1 2**X**

2 0 1.25X

3 O 3X

4 2.5X

Solution:

Correct Answer: 2

As the balance remaining after all the games is Rs. X with each friend,

Hence, amount with all the 20 friends will be Rs. 20 X. Let the amount with player 4 be Rs. A at the beginning. Therefore the amount with player 4 after 3rd game be 8A

And the amount remaining with him after he lost in 4th game = 8A - (20X - 8A) = 16A - 20X

Now amount with player 4 after 20th game

 $= 2^{16} \times (16A - 20X)$

 $\therefore 2^{16} \times (16A - 20X) = X$

⇒ A ≈ 1.25X.

FeedBack

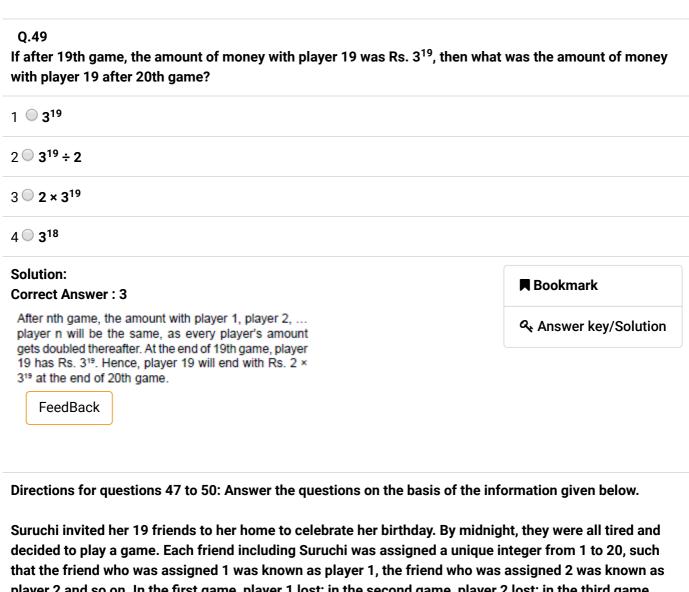
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Q.48 After the 14th game, if the amount of money with player 12 was Rs. 212, the player 11 after this round?	en what was the amount with
1 ORs. 26	
2 O Rs. 211	
3 ○ Rs. 212	
4 O None of these	
Solution: Correct Answer : 3	■ Bookmark
After nth game, the amount with player 1, player 2, player n will be the same, as every player's amount gets doubled thereafter. Hence, player 11 would have the same amount i.e., Rs. 212.	م Answer key/Solution

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

Suruchi invited her 19 friends to her home to celebrate her birthday. By midnight, they were all tired and decided to play a game. Each friend including Suruchi was assigned a unique integer from 1 to 20, such that the friend who was assigned 1 was known as player 1, the friend who was assigned 2 was known as player 2 and so on. In the first game, player 1 lost; in the second game, player 2 lost; in the third game, player 3 lost; and so on. Before the starting of the game, each of the friends had some amount. As per the rules of the game, if any player loses a game, he/she would give an amount of money to each of the other 19 players what he or she already had. For example, if player 1 lost, he would give the other 19 players some money. He would give player 2 the amount of money that player 2 already had in his pocket at that time. Player 3 would be given the amount of money that player 3 had in his pocket, and the rest of the friends would be paid accordingly. Finally, after the 20th game, the amount of money left with each player was the same and is "X".



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Q.50

If after 17th game, the amount of money with player 17 was Rs. 2^{17} , then what was the amount of money with player 8 after 15th game?



Solution: Correct Answer : 4	■ Bookmark
After nth game, the amount with player 1, player 2, player n will be the same, as every player's amount gets doubled thereafter. So the amount with player 8 at the end of 17th game will also be Rs. 2 ¹⁷ . Hence the amount with player 8 at the end of 16th game should be half of 2 ¹⁷ i.e. 2 ¹⁶ . Similarly, the amount with player 8 at the end of 15th game should be half of 2 ¹⁶ i.e. 2 ¹⁵ . FeedBack	≪ Answer key/Solution
Directions for questions 51 to 54: Answer the questions on the basis of the information given below.	
"Indian football club" is a leading football club in India which prepares young players for international competitions. On 10th January 2016, the club made 4 groups in which all the players were divided, and these groups played matches against each other. On 10th of each of the next three months i.e., February, March and April, the group with lowest number of members (before adding any other member) was disbanded, and all of the players of the disbanded group were distributed among one or more of the other groups. Also, on 1st of each of the next three months i.e., February, March and April, some new members were joined the club and all of them were added to one of the available groups on 10th of the same month. Further, it is known that:	
(i) On 10th January, there were 104 members in the club with group III having minimum number of members as 23 and group I having highest number of members as 30.(ii) On 10th February, all the members of the group with minimum number of members i.e. group III are	
shifted to group I or group II. All the new members who joined on 1st Fe increase in the number of members of group I, II and IV after 10th Febru where x, y, z are three consecutive natural numbers. No two groups had after 10th February and before 10th March.	uary was x, y and z, in any order,
(iii) On 1st March, 3 new members joined the club and on 10th March groups of March, the increase in number of members (over the previous month	roup IV was disbanded. By the end) in group II was exactly $66\frac{2}{3}\%$
more than the increase in the same group in the previous month. Also, all the new members in March joined group I. (iv) On 10th April, group I had 1 more member than group II, before the addition of new members.	
Q.51	
How many members were there in group II on 20th February?	
1 0 36	

2 0 37

3 O 38

4 🔾 39

Correct Answer: 3

The sum of number of members in group II and group IV in January = 104 - (23 + 30) = 51. The possible combination of number of members in group II and IV will be (26, 25), (25, 26), (27, 24) or (24, 27).

On 10th February, 23 members of group III were shifted to group I and II and the increase in group I, II and IV were consecutive numbers so out of the 23 members of group III, 11 and 12 must have shifted to group I and II in any order. Also, the increase in group IV will be either 10 or 13. As the increase in

group II in March was $66\frac{2}{3}\%$ more than that in February, so the increase in members of group II in February must be 12 (i.e. a multiple of 3).

In March, the members of group II increased by 20. Also, group IV had lowest number of members in March, so two possible cases are:

Case I: Number of members increased in group IV in February is 13.

In this case, total number of members in March will become 104 + 13 + 3 = 120. But, in such a scenario the difference between the number of members of group I and II in March cannot be 1. Hence this case is not possible.

Case II: Number of members increased in group IV in February is 10.

The total number of members in April (before addition) must be 104 + 10 + 3 = 117. So group II and I had 58 and 59 members in March respectively. Also, group IV must be having either 25 or 26 members in January. In case of 26, the total number of members in group II and IV will be 37 (i.e. 25 + 12) and 36 (i.e. 26 + 10) which is consecutive hence not possible. So, group IV must be having 25 members in January. Hence the division of players in four groups for the three months can be represented as:

	Group I	Group II	Group III	Group Ⅳ
January	30	26	23	25
February	30 + 11 = 41	26 + 12 = 38	0	25 + 10 = 35
March	41 + 15 + 3 = 59	38 + 20 = 58	0	0

FeedBack

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

"Indian football club" is a leading football club in India which prepares young players for international competitions. On 10th January 2016, the club made 4 groups in which all the players were divided, and these groups played matches against each other. On 10th of each of the next three months i.e., February, March and April, the group with lowest number of members (before adding any other member) was disbanded, and all of the players of the disbanded group were distributed among one or more of the other groups. Also, on 1st of each of the next three months i.e., February, March and April, some new members were joined the club and all of them were added to one of the available groups on 10th of the same month. Further, it is known that:

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- (ii) On 10th February, all the members of the group with minimum number of members i.e. group III are shifted to group I or group II. All the new members who joined on 1st February joined group IV. The increase in the number of members of group I, II and IV after 10th February was x, y and z, in any order, where x, y, z are three consecutive natural numbers. No two groups had consecutive number of members after 10th February and before 10th March.
- (iii) On 1st March, 3 new members joined the club and on 10th March group IV was disbanded. By the end of March, the increase in number of members (over the previous month) in group II was exactly $66\frac{2}{3}\%$

more than the increase in the same group in the previous month. Also, all the new members in March joined group I.

(iv) On 10th April, group I had 1 more member than group II, before the addition of new members.

Q.52 What was the total number of members in the club on 30th March?	
1 107	
2 🔾 117	
3 🔾 69	
4 🔾 70	

Correct Answer: 2

The sum of number of members in group II and group IV in January = 104 - (23 + 30) = 51. The possible combination of number of members in group II and IV will be (26, 25), (25, 26), (27, 24) or (24, 27).

On 10th February, 23 members of group III were shifted to group I and II and the increase in group I, II and IV were consecutive numbers so out of the 23 members of group III, 11 and 12 must have shifted to group I and II in any order. Also, the increase in group IV will be either 10 or 13. As the increase in

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In March, the members of group II increased by 20. Also, group IV had lowest number of members in March, so two possible cases are:

Case I: Number of members increased in group IV in February is 13.

In this case, total number of members in March will become 104 + 13 + 3 = 120. But, in such a scenario the difference between the number of members of group I and II in March cannot be 1. Hence this case is not possible.

Case II: Number of members increased in group IV in February is 10

The total number of members in April (before addition) must be 104 + 10 + 3 = 117. So group II and I had 58 and 59 members in March respectively. Also, group IV must be having either 25 or 26 members in January. In case of 26, the total number of members in group II and IV will be 37 (i.e. 25 + 12) and 36 (i.e. 26 + 10) which is consecutive hence not possible. So, group IV must be having 25 members in January. Hence the division of players in four groups for the three months can be represented as:

	Group I	Group II	Group III	Group Ⅳ
January	30	26	23	25
February	30 + 11 = 41	26 + 12 = 38	0	25 + 10 = 35
March	41 + 15 + 3 = 59	38 + 20 = 58	0	0

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

"Indian football club" is a leading football club in India which prepares young players for international competitions. On 10th January 2016, the club made 4 groups in which all the players were divided, and these groups played matches against each other. On 10th of each of the next three months i.e., February, March and April, the group with lowest number of members (before adding any other member) was disbanded, and all of the players of the disbanded group were distributed among one or more of the other groups. Also, on 1st of each of the next three months i.e., February, March and April, some new members were joined the club and all of them were added to one of the available groups on 10th of the same month. Further, it is known that:

- (i) On 10th January, there were 104 members in the club with group III having minimum number of members as 23 and group I having highest number of members as 30.
- (ii) On 10th February, all the members of the group with minimum number of members i.e. group III are shifted to group I or group II. All the new members who joined on 1st February joined group IV. The increase in the number of members of group I, II and IV after 10th February was x, y and z, in any order, where x, y, z are three consecutive natural numbers. No two groups had consecutive number of members after 10th February and before 10th March.
- (iii) On 1st March, 3 new members joined the club and on 10th March group IV was disbanded. By the end of March, the increase in number of members (over the previous month) in group II was exactly $66\frac{2}{3}\%$

more than the increase in the same group in the previous month. Also, all the new members in March joined group I.

(iv) On 10th April, group I had 1 more member than group II, before the addition of new members.

Q.53 How many members shifted from group III to group I in February?	
1 0 10	
2 0 11	
3 0 12	
4 🌣 13	

Correct Answer: 2

The sum of number of members in group II and group IV in January = 104 - (23 + 30) = 51. The possible combination of number of members in group II and IV will be (26, 25), (25, 26), (27, 24) or (24, 27).

On 10th February, 23 members of group III were shifted to group I and II and the increase in group I, II and IV were consecutive numbers so out of the 23 members of group III, 11 and 12 must have shifted to group I and II in any order. Also, the increase in group IV will be either 10 or 13. As the increase in

group II in March was $66\frac{2}{3}\%$ more than that in February, so the increase in members of group II in February must be 12 (i.e. a multiple of 3).

In March, the members of group II increased by 20. Also, group IV had lowest number of members in March, so two possible cases are:

Case I: Number of members increased in group IV in February is 13.

In this case, total number of members in March will become 104 + 13 + 3 = 120. But, in such a scenario the difference between the number of members of group I and II in March cannot be 1. Hence this case is not possible.

Case II: Number of members increased in group IV in February is 10

The total number of members in April (before addition) must be 104 + 10 + 3 = 117. So group II and I had 58 and 59 members in March respectively. Also, group IV must be having either 25 or 26 members in January. In case of 26, the total number of members in group II and IV will be 37 (i.e. 25 + 12) and 36 (i.e. 26 + 10) which is consecutive hence not possible. So, group IV must be having 25 members in January. Hence the division of players in four groups for the three months can be represented as:

	Group I	Group II	Group III	Group Ⅳ
January	30	26	23	25
February	30 + 11 = 41	26 + 12 = 38	0	25 + 10 = 35
March	41 + 15 + 3 = 59	38 + 20 = 58	0	0

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

"Indian football club" is a leading football club in India which prepares young players for international competitions. On 10th January 2016, the club made 4 groups in which all the players were divided, and these groups played matches against each other. On 10th of each of the next three months i.e., February, March and April, the group with lowest number of members (before adding any other member) was disbanded, and all of the players of the disbanded group were distributed among one or more of the other groups. Also, on 1st of each of the next three months i.e., February, March and April, some new members were joined the club and all of them were added to one of the available groups on 10th of the same month. Further, it is known that:

- (i) On 10th January, there were 104 members in the club with group III having minimum number of members as 23 and group I having highest number of members as 30.
- (ii) On 10th February, all the members of the group with minimum number of members i.e. group III are shifted to group I or group II. All the new members who joined on 1st February joined group IV. The increase in the number of members of group I, II and IV after 10th February was x, y and z, in any order, where x, y, z are three consecutive natural numbers. No two groups had consecutive number of members after 10th February and before 10th March.
- (iii) On 1st March, 3 new members joined the club and on 10th March group IV was disbanded. By the end of March, the increase in number of members (over the previous month) in group II was exactly $66\frac{2}{3}\%$

more than the increase in the same group in the previous month. Also, all the new members in March joined group I.

(iv) On 10th April, group I had 1 more member than group II, before the addition of new members.

Q.54 On 2nd March, the number of members in group I was more than that in group II by	
1 1	
2 2	
3 ○ 3	
4 O 4	

Correct Answer: 3

The sum of number of members in group II and group IV in January = 104 - (23 + 30) = 51. The possible combination of number of members in group II and IV will be (26, 25), (25, 26), (27, 24) or (24, 27).

On 10th February, 23 members of group III were shifted to group I and II and the increase in group I, II and IV were consecutive numbers so out of the 23 members of group III, 11 and 12 must have shifted to group I and II in any order. Also, the increase in group IV will be either 10 or 13. As the increase in

group II in March was $66\frac{2}{3}\%$ more than that in February, so the increase in members of group II in February must be 12 (i.e. a multiple of 3).

In March, the members of group II increased by 20. Also, group IV had lowest number of members in March, so two possible cases are:

Case I: Number of members increased in group IV in February is 13.

In this case, total number of members in March will become 104 + 13 + 3 = 120. But, in such a scenario the difference between the number of members of group I and II in March cannot be 1. Hence this case is not possible.

Case II: Number of members increased in group IV in February is 10.

The total number of members in April (before addition) must be 104 + 10 + 3 = 117. So group II and I had 58 and 59 members in March respectively. Also, group IV must be having either 25 or 26 members in January. In case of 26, the total number of members in group II and IV will be 37 (i.e. 25 + 12) and 36 (i.e. 26 + 10) which is consecutive hence not possible. So, group IV must be having 25 members in January. Hence the division of players in four groups for the three months can be represented as:

	Group I	Group II	Group III	Group N
January	30	26	23	25
February	30 + 11 = 41	26 + 12 = 38	0	25 + 10 = 35
March	41 + 15 + 3 = 59	38 + 20 = 58	0	0

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Answer key/Solution

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

Panda, a magician, in the first magic trick, selected a pack of 13 cards of diamond from deck of 52 cards. He arranged them in some order. As per his magic trick before a group of young children, from this arranged set of cards he discarded the card first from the top and place the second topmost card at the bottom of the pack. Then again discarded the third topmost card placed in initial arrangement and kept the fourth topmost card of the initial arrangement at the bottom of the pack. Continued so on till the last card in his hand was also discarded. The young audience was stunned to see that the cards were discarded in the order of Ace (A), King (K), Queen(Q), Jack(J), 10, 9, 8, 7, 6, 5, 4, 3, 2. But Mahesh, one of the young participant and a logical wizard, was quick to find out that the cards were arranged in a particular order. He could figured out the arrangement.

Face value of a card is defined as the number written on the card. Also, for cards A, K, Q and J, the face values are 1, 13, 12 and 11 respectively.

Q.55 Which of the following was the second card in the initial arrangement? 1 3 2 7 3 2

Correct Answer: 1

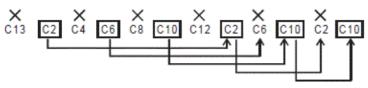
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Answer key/Solution

Let the 13 cards arranged by the magician for his trick be numbered as C1, C2, ..., C12, C13 from top to bottom as Top→ C1 C2 C3 ... C12 C13 ← Bottom

While playing his trick magician started to discard C1 and placed C2 at the end, then discarded C3 and placed C4 at the end and so on, which in turn implies that all odd numbered cards i.e., C1, C3, C5, ... C13 were discarded in that order and all even numbered cards were placed at bottom in order C2, C4, C6, C8, C10, C12.

Now, when he started discarding these cards, the process will be as follows:



and hence C10 was the last card in his hand

.. The arrangement will be as follows:

Α	K	Q	J	10	9	8	7	6	5	4	3	2
C1	C3	C5	C7	C9	C11	C13	C4	C8	C12	C6	C2	C10

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4 0 6

Solution:

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

Panda, a magician, in the first magic trick, selected a pack of 13 cards of diamond from deck of 52 cards. He arranged them in some order. As per his magic trick before a group of young children, from this arranged set of cards he discarded the card first from the top and place the second topmost card at the bottom of the pack. Then again discarded the third topmost card placed in initial arrangement and kept the fourth topmost card of the initial arrangement at the bottom of the pack. Continued so on till the last card in his hand was also discarded. The young audience was stunned to see that the cards were discarded in the order of Ace (A), King (K), Queen(Q), Jack(J), 10, 9, 8, 7, 6, 5, 4, 3, 2. But Mahesh, one of the young participant and a logical wizard, was quick to find out that the cards were arranged in a particular order. He could figured out the arrangement.

Face value of a card is defined as the number written on the card. Also, for cards A, K, Q and J, the face values are 1, 13, 12 and 11 respectively.

Q.56

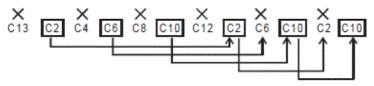
What is the sum of the face values on the cards at the 8th, 9th and 10th place in the initial arrangement?

1 0 21	
2 0 18	
3 🔾 19	
4 🔾 20	
Solution: Correct Answer : 2	■ Bookmark
	م Answer key/Solution

Let the 13 cards arranged by the magician for his trick be numbered as C1, C2, ..., C12, C13 from top to bottom as $Top \rightarrow C1$ C2 C3 ... C12 C13 \leftarrow Bottom

While playing his trick magician started to discard C1 and placed C2 at the end, then discarded C3 and placed C4 at the end and so on, which in turn implies that all odd numbered cards i.e., C1, C3, C5, ... C13 were discarded in that order and all even numbered cards were placed at bottom in order C2, C4, C6, C8, C10, C12.

Now, when he started discarding these cards, the process will be as follows:



and hence C10 was the last card in his hand

.. The arrangement will be as follows:

Α	K	Q	J	10	9	8	7	6	5	4	3	2
C1	C3	C5	C7	C9	C11	C13	C4	C8	C12	C6	C2	C10

Sum of numbers = 6 + 10 + 2 = 18

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

Panda, a magician, in the first magic trick, selected a pack of 13 cards of diamond from deck of 52 cards. He arranged them in some order. As per his magic trick before a group of young children, from this arranged set of cards he discarded the card first from the top and place the second topmost card at the bottom of the pack. Then again discarded the third topmost card placed in initial arrangement and kept the fourth topmost card of the initial arrangement at the bottom of the pack. Continued so on till the last card in his hand was also discarded. The young audience was stunned to see that the cards were discarded in the order of Ace (A), King (K), Queen(Q), Jack(J), 10, 9, 8, 7, 6, 5, 4, 3, 2. But Mahesh, one of the young participant and a logical wizard, was quick to find out that the cards were arranged in a particular order. He could figured out the arrangement.

Face value of a card is defined as the number written on the card. Also, for cards A, K, Q and J, the face values are 1, 13, 12 and 11 respectively.

Q.57

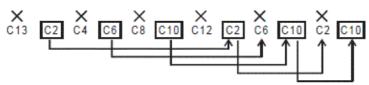
In the second magic trick, Panda arranged the same 13 cards in a different order and followed the same process of discarding the cards. The order in which he discarded the cards in the second magic trick was A 2 3 4 5 6 7 8 9 10 J Q K, then which of the following is the absolute difference in the face value of the card at 12th position in the original arrangement of the 1st magic trick and that in the second magic trick?

1 0 5	
2 O 3	
3 0 1	
4 4	
Solution: Correct Answer : 1	■ Bookmark
	م Answer key/Solution

Let the 13 cards arranged by the magician for his trick be numbered as C1, C2, ..., C12, C13 from top to bottom as $Top \rightarrow C1$ C2 C3 ... C12 C13 \leftarrow Bottom

While playing his trick magician started to discard C1 and placed C2 at the end, then discarded C3 and placed C4 at the end and so on, which in turn implies that all odd numbered cards i.e., C1, C3, C5, ... C13 were discarded in that order and all even numbered cards were placed at bottom in order C2, C4, C6, C8, C10, C12.

Now, when he started discarding these cards, the process will be as follows:



and hence C10 was the last card in his hand

.. The arrangement will be as follows:

Α	K	Q	J	10	9	8	7	6	5	4	3	2
C1	C3	C5	C7	C9	C11	C13	C4	C8	C12	C6	C2	C10

By following the same logic,

In second magic trick arrangement of cards is as follows:

C1	C2	СЗ	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13
Α	Q	2	8	3	J	4	9	5	K	6	10	7

Difference = 15 - 101 = 5

FeedBack

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

Panda, a magician, in the first magic trick, selected a pack of 13 cards of diamond from deck of 52 cards. He arranged them in some order. As per his magic trick before a group of young children, from this arranged set of cards he discarded the card first from the top and place the second topmost card at the bottom of the pack. Then again discarded the third topmost card placed in initial arrangement and kept the fourth topmost card of the initial arrangement at the bottom of the pack. Continued so on till the last card in his hand was also discarded. The young audience was stunned to see that the cards were discarded in the order of Ace (A), King (K), Queen(Q), Jack(J), 10, 9, 8, 7, 6, 5, 4, 3, 2. But Mahesh, one of the young participant and a logical wizard, was quick to find out that the cards were arranged in a particular order. He could figured out the arrangement.

Face value of a card is defined as the number written on the card. Also, for cards A, K, Q and J, the face values are 1, 13, 12 and 11 respectively.

Q.58

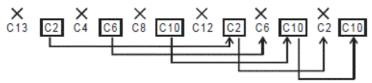
As per the arrangement of the cards in the original arrangement in the second magic trick as given in the above question, how many positions had the same card as they had in the original arrangement of the first magic trick?

	م Answer key/Solution
Solution: Correct Answer : 2	■ Bookmark
4 🔾 5	
3 O 2	
2 0 1	
1 ○ 0	

Let the 13 cards arranged by the magician for his trick be numbered as C1, C2, ..., C12, C13 from top to bottom as $Top \rightarrow C1$ C2 C3 ... C12 C13 \leftarrow Bottom

While playing his trick magician started to discard C1 and placed C2 at the end, then discarded C3 and placed C4 at the end and so on, which in turn implies that all odd numbered cards i.e., C1, C3, C5, ... C13 were discarded in that order and all even numbered cards were placed at bottom in order C2, C4, C6, C8, C10, C12.

Now, when he started discarding these cards, the process will be as follows:



and hence C10 was the last card in his hand

.. The arrangement will be as follows:

Α	K	Q	J	10	9	8	7	6	5	4	3	2
C1	C3	C5	C7	C9	C11	C13	C4	C8	C12	C6	C2	C10

Only C1 has the same card in both the magic tricks.

FeedBack

A dance troupe participated in a dance competition named 'Mil Ke Nacho', organized by a television channel named Tee ZV. According to the rules of the competition, the troupe had to perform four types of dances D1, D2, D3 and D4, not necessarily in that order. The number of dancers in each type of dances was the same but the arrangement of these dancers on the stage during a particular dance type can be different. The arrangement of dancers on the stage for the different dance types is as follows:

- D1 : All dancers should perform in an arrangement the structure of which has multiple rows facing the judges such that number of dancers in n^{th} row (R_n) is n.
- D2 : All dancers should dance in an arrangement the structure of which is $n \times n$ grid, having same number of dancers in each row as well as in each column.
- D3 : All dancers should dance in an arrangement having one or more rows with exactly 7 dancers in each row
- D4 : All dancers should dance in an arrangement having one or more rows with exactly 9 dancers in each row.

Since the number of dancers in each type of dances of the dance troupe has to be same, the leader of the troupe was not able to decide which dance type to perform in which order, and how many dancers to include in his troupe. Moreover, the judges revised the rule of performing all type of dances and asked him to perform at least 3 dances in any sequence.

0.59

What is the minimum number of dancers required to perform at least 3 dances in any sequence?

Solution:

Correct Answer: 36

The possible number of dancers required for each type of the dance is as given below.

D1: 1, 3, 6,10, 15,21, 28, 36, 45, 55, 66, 78, 91, 105.....

D2: 1, 4, 9, 16, 25, 36, 49, 64, 81, 100, 121, 144, 169... D3: 7, 14, 21, 28, 35, 42, 49, 56, 63, 70, 77, 84, 91,98....

D4: 9, 18, 27, 36, 45, 54, 63, 72, 81, 90, 99......

The troupe can perform D1, D2 and D4 in any sequence with minimum 36 dancers.

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A dance troupe participated in a dance competition named 'Mil Ke Nacho', organized by a television channel named Tee ZV. According to the rules of the competition, the troupe had to perform four types of dances D1, D2, D3 and D4, not necessarily in that order. The number of dancers in each type of dances was the same but the arrangement of these dancers on the stage during a particular dance type can be different. The arrangement of dancers on the stage for the different dance types is as follows:

- D1 : All dancers should perform in an arrangement the structure of which has multiple rows facing the judges such that number of dancers in n^{th} row (R_n) is n.
- D2 : All dancers should dance in an arrangement the structure of which is $n \times n$ grid, having same number of dancers in each row as well as in each column.
- D3 : All dancers should dance in an arrangement having one or more rows with exactly 7 dancers in each row.
- D4 : All dancers should dance in an arrangement having one or more rows with exactly 9 dancers in each row.

Since the number of dancers in each type of dances of the dance troupe has to be same, the leader of the troupe was not able to decide which dance type to perform in which order, and how many dancers to include in his troupe. Moreover, the judges revised the rule of performing all type of dances and asked him to perform at least 3 dances in any sequence.

0.60

If in D1 there is no rows having both male and female, and also no two consecutive rows can have dancers of the same gender, what is the minimum number of female dancers required to perform atleast three types of dances with D1 as one of it.

Solution:

Correct Answer: 16

The possible number of dancers required for each type of the dance is as given below.

D1: 1, 3, 6,10, 15,21, 28, 36, 45, 55, 66, 78, 91, 105.....

D2: 1, 4, 9, 16, 25, 36, 49, 64, 81, 100, 121, 144, 169... D3: 7, 14, 21, 28, 35, 42, 49, 56, 63, 70, 77, 84, 91,98....

D4: 9, 18, 27, 36, 45, 54, 63, 72, 81, 90, 99.....

In D1 the minimum number of female dancers required. to perform at least three dances = 1 + 3 + 5 + 7 = 16.

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A dance troupe participated in a dance competition named 'Mil Ke Nacho', organized by a television channel named Tee ZV. According to the rules of the competition, the troupe had to perform four types of dances D1, D2, D3 and D4, not necessarily in that order. The number of dancers in each type of dances was the same but the arrangement of these dancers on the stage during a particular dance type can be different. The arrangement of dancers on the stage for the different dance types is as follows:

- D1 : All dancers should perform in an arrangement the structure of which has multiple rows facing the judges such that number of dancers in n^{th} row (R_n) is n.
- D2 : All dancers should dance in an arrangement the structure of which is $n \times n$ grid, having same number of dancers in each row as well as in each column.
- D3 : All dancers should dance in an arrangement having one or more rows with exactly 7 dancers in each row.
- D4 : All dancers should dance in an arrangement having one or more rows with exactly 9 dancers in each row.

Since the number of dancers in each type of dances of the dance troupe has to be same, the leader of the troupe was not able to decide which dance type to perform in which order, and how many dancers to include in his troupe. Moreover, the judges revised the rule of performing all type of dances and asked him to perform at least 3 dances in any sequence.

0.61

If the judges allow the leader to increase or decrease the number of dancers by 1 only once, what is the minimum number of dancers required to start with to perform at least 3 types dances?

Solution:

Correct Answer: 9

The possible number of dancers required for each type of the dance is as given below.

D1: 1, 3, 6,10, 15,21, 28, 36, 45, 55, 66, 78, 91, 105.....

D2: 1, 4, 9, 16, 25, 36, 49, 64, 81, 100, 121, 144, 169... D3: 7, 14, 21, 28, 35, 42, 49, 56, 63, 70, 77, 84, 91,98....

D4: 9, 18, 27, 36, 45, 54, 63, 72, 81, 90, 99.....

With 9 dancers, one can perform, D2, D4 and D1 (by adding one dancer in D1 after performing D2 and D4).

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A dance troupe participated in a dance competition named 'Mil Ke Nacho', organized by a television channel named Tee ZV. According to the rules of the competition, the troupe had to perform four types of dances D1, D2, D3 and D4, not necessarily in that order. The number of dancers in each type of dances was the same but the arrangement of these dancers on the stage during a particular dance type can be different. The arrangement of dancers on the stage for the different dance types is as follows:

- D1 : All dancers should perform in an arrangement the structure of which has multiple rows facing the judges such that number of dancers in n^{th} row (R_n) is n.
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- D3 : All dancers should dance in an arrangement having one or more rows with exactly 7 dancers in each
- D4 : All dancers should dance in an arrangement having one or more rows with exactly 9 dancers in each row.

Since the number of dancers in each type of dances of the dance troupe has to be same, the leader of the troupe was not able to decide which dance type to perform in which order, and how many dancers to include in his troupe. Moreover, the judges revised the rule of performing all type of dances and asked him to perform at least 3 dances in any sequence.

0.62

The Judges got angry with the rigidity of the team members and instructed the leader to drop off 1 dancer from his team after every type of dance was performed. What is the minimum number of dancers in the troupe required initially to start the performance for performing at least 3 types of dances?

Solution:

Correct Answer: 16

The possible number of dancers required for each type of the dance is as given below.

D1: 1, 3, 6,10, 15,21, 28, 36, 45, 55, 66, 78, 91, 105.....

D2: 1, 4, 9, 16, 25, 36, 49, 64, 81, 100, 121, 144, 169... D3: 7, 14, 21, 28, 35, 42, 49, 56, 63, 70, 77, 84, 91,98....

D4: 9, 18, 27, 36, 45, 54, 63, 72, 81, 90, 99......

With 16 dancers one can perform D2, D1 and D3 in that order.

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Ankur has 14 first cousins. All of them gathered for his wedding. They were all sitting together for the reception dinner. Seven of them – A, B, C, D, E, F and G – want to sit in Row-1 facing South, while P, Q, R, S, T, U and V want to sit in Row-2 facing North. However, each row on the table had only 6 chairs, so 1 cousin in each row did not find a place to sit and had to leave. Each sitting cousin was facing another sitting cousin from the other row. Their ages (in years) were among – 8, 9, 10, 11, 12, 14, 15, 16, 17, 18, 19, 22, 23 and 26 – in any order. It is also known that:

R is older than A but younger than C. Only two cousins were sitting between D and C, and D is 4 years older than T. B is youngest and sits opposite to Q, who is 18 years old. The ages of each of the persons sitting at the extreme ends of both the rows are prime numbers. P, whose age is a multiple of 7, was sitting second to the right of S. The sum of the ages of the persons who were sitting at the extreme ends of Row- 2 is 36 with T being one of them. U was sitting at an equidistant position from both R and T and the sum of the ages of U and the one who was sitting to her immediate left is 23. The sum of the ages of F and the one who was sitting opposite to her is 30. E, who is an immediate neighbour of D, is 2 years older than P. The oldest cousin and A, who was not well, were given places to sit. Moreover, cousins with ages being a multiple of 5 managed to sit.

Q.63 What was the ages of the cousins	who were not sitting at the dinner table?	
1 0 9, 12		
2 0 12, 22		
3 🔾 14, 17		
4 🔾 16, 8		

Correct Answer: 2

Age of the cousins who were sitting at extreme end in row - 2 must be 17 and 19, one of them is T, who is 4 years younger than D. It means T can be 19 years old and age of D is 23 years.

Possible age of U and the person who was sitting to the immediate left of U can be (11, 12), (8, 15) or (9, 14). But (11, 12) is not possible since the cousin having 11 years of age was sitting at the extreme end in row 1, and 8 years was given as age of B, who was sitting in row 1. Hence, age of U was 9 years and P was sitting to the immediate left of U.

Now, either Q or R can sit between S and P, but U was at equal distance from Both R and T, so R must be between S and P and hence the only possible arrangement of row 2 is SRPUQT.

Now, ages of cousin sitting at extreme ends of the two rows are 11, 17, 19, 23.

Age of F + age of cousin sitting opposite to F = 30

- .: Possible pairs are (11, 19) (14, 16)
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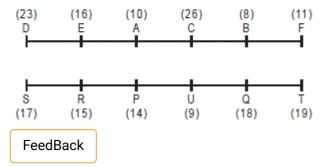
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And D was sitting at the extreme end in row 1

Now, C is older than R who is older than A.

Also, since A, the oldest cousin and the one having age of multiple of 5 were managed to sit, age of C, R and A must be 26, 15 and 10 years respectively.

Final arrangement of the cousins with their ages is as follows:



■ Bookmark

Ankur has 14 first cousins. All of them gathered for his wedding. They were all sitting together for the reception dinner. Seven of them – A, B, C, D, E, F and G – want to sit in Row-1 facing South, while P, Q, R, S, T, U and V want to sit in Row-2 facing North. However, each row on the table had only 6 chairs, so 1 cousin in each row did not find a place to sit and had to leave. Each sitting cousin was facing another sitting cousin from the other row. Their ages (in years) were among – 8, 9, 10, 11, 12, 14, 15, 16, 17, 18, 19, 22, 23 and 26 – in any order. It is also known that:

R is older than A but younger than C. Only two cousins were sitting between D and C, and D is 4 years older than T. B is youngest and sits opposite to Q, who is 18 years old. The ages of each of the persons sitting at the extreme ends of both the rows are prime numbers. P, whose age is a multiple of 7, was sitting second to the right of S. The sum of the ages of the persons who were sitting at the extreme ends of Row- 2 is 36 with T being one of them. U was sitting at an equidistant position from both R and T and the sum of the ages of U and the one who was sitting to her immediate left is 23. The sum of the ages of F and the one who was sitting opposite to her is 30. E, who is an immediate neighbour of D, is 2 years older than P. The oldest cousin and A, who was not well, were given places to sit. Moreover, cousins with ages being a multiple of 5 managed to sit.

Q.64 What was the position of the cousin aged 26 years with respect to the one aged 8 years?
1 O Second to the left
2 Immediate right
3 Second to the right
4 O Third to the right

Correct Answer: 2

Age of the cousins who were sitting at extreme end in row - 2 must be 17 and 19, one of them is T, who is 4 years younger than D. It means T can be 19 years old and age of D is 23 years.

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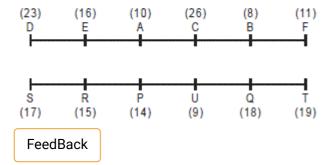
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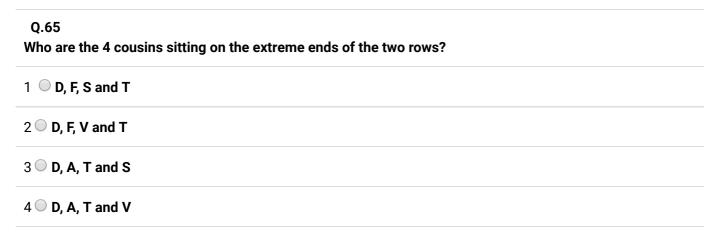
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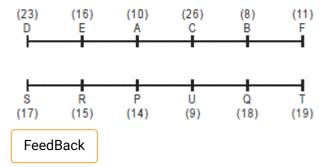
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Q.66
The sum of the ages of two cousins sitting opposite to each other is 'x'. Who are the two cousins sitting
opposite to each other for which the value of 'x' is the third highest?

opposite to each other for which the value of x to the third highest.	
1 C and R	
2 \bigcirc C and U	
3 O D and S	
4 ○ E and R	

Correct Answer: 4

Age of the cousins who were sitting at extreme end in row - 2 must be 17 and 19, one of them is T, who is 4 years younger than D. It means T can be 19 years old and age of D is 23 years.

Possible age of U and the person who was sitting to the immediate left of U can be (11, 12), (8, 15) or (9, 14). But (11, 12) is not possible since the cousin having 11 years of age was sitting at the extreme end in row 1, and 8 years was given as age of B, who was sitting in row 1. Hence, age of U was 9 years and P was sitting to the immediate left of U.

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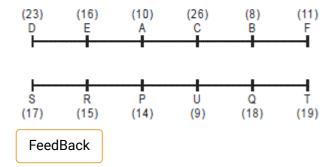
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Final arrangement of the cousins with their ages is as follows:



Sec 3

Q.67

Aparna has ten weights of measures 1, 2, 3, 4, ..., 10 grams. She lifts two weights at a time. What is the difference between the sum of the weights in 10 heaviest pairs and the sum of the weights in 10 lightest pairs that she can lift? (Assume each pair is distinct from another)

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Correct Answer: 104

The ten heaviest pairs that can be created by Aparna are (10, 9), (10, 8), (10, 7), (9, 8), (10, 6), (9, 7), (10, 5), (9, 6), (8, 7) and (10, 4).

.. Sum of weights of the heaviest pairs created by Aparna = 162

The ten lightest pairs that can be created by Aparna are (1, 2), (1, 3), (1, 4), (2, 3), (1, 5), (2, 4), (1, 6), (2, 5), (3, 4) and (1, 7).

 \therefore Sum of weights of the lightest pairs created by Aparna = 3 + 4 + (2 × 5) + (2 × 6) + (3 × 7) + 8 = 7 + 10 + 12 + 21 + 8 = 58

Hence, the required answer = 162 - 58 = 104.

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Answer key/Solution

Q.68

If $x = 20^5 + 20^4 + 20 + 1$ and $y = 16^8 - 16^5 - 16^3 - 1$, then which of the following statements is true?

- 1 x and y are both prime.
- $2 \bigcirc x$ is prime but y is composite.
- $3 \bigcirc$ y is prime but x is composite.
- 4 x and y are both composite.

Solution:

Correct Answer: 4

 $x = 20^5 + 20^4 + 20 + 1$ = $20^4(20 + 1) + 1(20 + 1)$ = $(20^4 + 1) \times (20 + 1)$ Hence, x is a composite number. $y = 16^8 - 16^5 - 16^3 - 1$ = $(16^8 - 1) - (16^5 + 16^3)$ = $(16^2 + 1)[(16^2 - 1)(16^4 + 1) - 16^3]$ Hence, y is a composite number.

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Answer key/Solution

Q.69

There are 100 consecutive even numbers which are arranged in ascending order. If the average of the first 50 numbers is N, then what is the average of all the numbers?

1 N + 49

2 N + 50

3 N + 99

Correct Answer: 2

Let the first even number be a.

Then all these 100 numbers are as a, a + 2, a + 4, a + 6 ..., a + 196, a + 198.

Now, average of first 50 numbers out of these

$$= \frac{a+a+2+...+a+98}{50} = N$$

$$\Rightarrow$$
 N = a + 49

.. Average of all these 100 numbers

$$= \frac{a+a+2+...+a+198}{100} = a+99 = N+50.$$

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Answer key/Solution

Q.70

A dishonest dealer sells goods to a customer at a price which is 6.25% less than the cost price. However he cheats the customer by using a weight of 14g instead of 16g. What is the percentage of his profit/loss?

- 1 7.14% profit
- 2 7.14% loss
- 3 0 8.12% profit
- 4 No profit no loss

Solution:

Correct Answer: 1

Let CP of 16g be Rs. 16 SP = Rs. 16(1 –0.625) = Rs. 15 As he sold 14g instead of 16g, actual CP = 14

$$\therefore \text{ Percentage profit} = \frac{15-14}{14} \times 100 = 7.14$$

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Answer key/Solution

Q.71

A 2 digit number is selected randomly. What is the probability that the tens digit of the number is at least four more than its unit digit?

- 1 7/30
- 2 7/45

4 0 1/2

Solution:

Correct Answer: 1

Unit Place	Tens Place	
0	4, 5, 6, 7, 8, 9	6
1	5, 6, 7, 8, 9	5
2	6, 7, 8, 9	4
3	7, 8, 9	3
4	8, 9	2
5	9	1

Possible 2 digit numbers = 9 × 10 = 90

Possible number having tens digit at least four more than unit digit = 1 + 2 + 3 + + 6 = 21

∴ The required probability = 21/90 = 7/30.

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Answer key/Solution

Q.72

A, B, C are three pipes. A and B are inlet pipes and can fill a tank in 12 and 6 minutes respectively. C can work either as inlet or outlet pipe. C can fill or empty the tank in 24 minutes. If A and B worked alternately for a minute each, starting with A, and C worked as an inlet pipe for some time and as outlet pipe for the remaining time, then the tank got filled in 10 minutes. If C was open for the entire duration i.e., 10 minutes, find the time (in minutes) for which pipe C worked as an outlet.

Solution:

Correct Answer: 8

Let the volume of tank be 24 litres.
A and B worked for 5 minutes each and C worked for 10 minutes. A and B together can fill 30 litres in 10 minutes i.e. C has to empty 6 litres in 10 minutes. Let I be the time for which C worked as an inlet pipe and O be the time for which C worked as an outlet pipe.

∴ I + O = 10, O - I = 6

Solving above equations, we get

O = 8 minutes and I = 2 minutes.

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Q.73

There are three identical circles of radii 10 units each touching each other as shown in the figure below. What is the circumference (in units)of the biggest circle that can be drawn inside the shaded region?



$$1 \bigcirc \frac{20\pi(2\sqrt{3}+3)}{3}$$

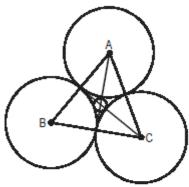
$$2 \bigcirc \frac{20\pi(2\sqrt{3}-3)}{3}$$

$$3 \bigcirc \frac{10\pi(2\sqrt{3}-3)}{3}$$

$$4 \bigcirc \frac{10\pi(2\sqrt{3}+3)}{3}$$

Solution:

Correct Answer: 2



Let the radius of a smaller circle be r. ABC is an equilateral triangle.

∴ Height of triangle = $10\sqrt{3}$ (∴ R = 10 units)

As the centroid divides the median of a triangle in the ratio 2:1,

2/3 × Height of triangle = 10 + r

$$\Rightarrow 10 + r = \frac{2}{3} \times 10\sqrt{3}$$

$$r = 10 \left[\frac{(2\sqrt{3} - 3)}{3} \right]$$

$$\therefore \text{ Circumference} = 2\pi r = 20\pi \left[\frac{(2\sqrt{3} - 3)}{3} \right].$$

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Q.74

The L.C.M and H.C.F of two numbers is 4697 and 61 respectively. How many pairs of two such numbers exist?

Solution:

Correct Answer: 2

We can factorize $4697 = 61 \times 11 \times 7$. Clearly the number is product of three primes. As HCF is given as 61, only possible pairs can be $1.61 \times 7, 61 \times 11$ $2.61 \times 11 \times 7, 61 \times 1$ Hence, 2 pairs are possible.

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Answer key/Solution

0.75

What is the sum of the series $\frac{1}{3} + \frac{7}{9} + \frac{25}{27} + \frac{79}{81} + \dots$ up to 30 terms?

$$1 = \frac{1}{3^{30}} (3^{31} + 1)$$

$$2 \bigcirc \frac{1}{3^{30}} (29 \times 3^{30} - 1)$$

$$3 \bigcirc \frac{1}{3^{30}} (3^{31} - 1)$$

$$4 \bigcirc \frac{1}{3^{30}} (29 \times 3^{30} + 1)$$

Solution:

Correct Answer: 4

1/3 + 7/9 + 25/27 + 79/81 + upto 30 terms We can rewrite the above series as:

$$= \left(1 - \frac{2}{3}\right) + \left(1 - \frac{2}{3^2}\right) + \left(1 - \frac{2}{3^3}\right) + \dots + \left(1 - \frac{2}{3^{30}}\right)$$
$$= 30 - \frac{2}{3}\left(1 + \frac{1}{3} + \frac{1}{3^2} + \frac{1}{3^3} + \dots + \frac{1}{3^{29}}\right)$$

$$=30-\frac{2}{3}\times\left(\frac{1-(1/3)^{30}}{1-\frac{1}{3}}\right)=29+\frac{1}{3^{30}}=\frac{1}{3^{30}}\left(29\times3^{30}+1\right)$$

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0.76

A toy is made by surmounting a hemisphere of radius 7 cm over a right circular cylinder of the same radius such that flat surface of hemisphere coincides with that of the right circular cylinder. The height of the cylinder is 10 cm. What will be the cost (in Rs.) of painting the entire toy except the base, if the cost of painting is Rs. 14 per cm²?

1 0 10688

2 **10472**

3 **5236**

4 0 5344

Solution:

Correct Answer: 2

We need to paint only curved surface areas of hemisphere and cylinder. Curved Surface Area of the hemisphere

= 2πr²

$$= 2 \times \frac{22}{7} \times 7^2 = 308 \text{ cm}^2$$

Curved Surface Area of the right circular cylinder

= 2πrh

= 2 × 22/7 × 7 × 10 = 440 cm²

.. Total surface area that is to be painted

 $= (308 + 440) \text{ cm}^2 = 748 \text{ cm}^2$

Hence, cost of painting the toy = $748 \times 14 = Rs. 10,472$.

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Answer key/Solution

Q.77

On Monday, Mohsin increased the speed of his car by 25% as compared to his usual speed and reached office 16 minutes earlier than the usual time. On Tuesday, Mohsin took a longer route to the office and travelled with his usual speed. On Tuesday, if he reached office 20 minutes late, then what percentage more time than his usual time did he take to reach the office?

1 20

2 0 30

3 25

4 0 16.67

Correct Answer: 3

Since increase in his speed is 25%, time must be decreased by 20% which is 16 minutes. Hence, the usual time must be 80 minutes.

On Tuesday, he reached 20 minutes late which means

he took $\frac{20}{80} \times 100 = 25\%$ more time than his usual time.

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Answer key/Solution

0.78

If $f(p) = 2^p + p^2$, where p is a prime number, what is the number of possible values of p for which f(p) will be prime number?

Solution:

Correct Answer: 1

For p = 2, f(p) = 8, which is composite. For p = 3, f(p) = 17, which is prime. Any prime number greater than 3 will be of the form

Any prime number greater than 3 will be of the form (6k + 1) or (6k – 1).

If p = 6k - 1, then, $2^p + p^2 = 2^{(6k-1)} + (6k - 1)^2$

2^{odd} + (6k - 1)² will be multiple of 3

As 2^p gives a remainder of -1 when divided by 3. and $(6k - 1)^2$ gives a remainder of 1 on division by 3. \therefore If p = 6k + 1, then, $2^p + p^2 = 2^{(6k+1)} + (6k + 1)^2$

It is in the form of 2^{odd} + (6k + 1)² which is multiple of 3

As 2^p gives a remainder of -1 when divided by 3. and (6k + 1)² gives a remainder of 1 on division by 3

So, there is only one value of p is possible which is 3.

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Answer key/Solution

Q.79

Rajeev wants to convert a mixture of acid and water in the ratio 16: 19 into a mixture of acid and water in the ratio of 19: 16. Find the amount of acid as a percentage of initial solution that should be added to achieve the required ratio.

- 1 0 18.75%
- 2 919.75%
- 3 **14.25**%
- 4 29.25%

Correct Answer: 1

Initial ratio of acid and water is 16 : 19. Required ratio of salt and water is 19 : 16. Here the amount of water is not changing, so we can make the value of water same in both cases. Multiplying the initial ratio by 16 and required one by 19 we will get the ratios as Initial – 256 : 304 Final – 361 : 304 So we need to add 361 - 256 = 105 units of acid So our required answer is $\frac{105}{560} \times 100 = 18.75\%$.

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Answer key/Solution

Q.80

If x and y are non negative integers, then how many different values ordered pair (x, y) can have such that $|x - 6| \times |x - 4| = 2y$ and x > y?

- 1 0 1
- 2 0 3
- 3 0 2
- 4 More than 3

Solution:

Correct Answer: 2

Let $|x - 6| \times |x - 4| = 2y$

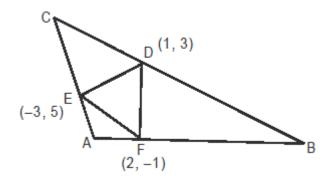
Here, the possible value of x must be even number less than or equal to 8 and greater than 2, otherwise y will be greater than x. The possible solution of (x, y) are (4, 0), (6, 0) and (8, 4)

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Q.81

D, E and F are the mid-points of the sides BC, AC and AB respectively of a triangle ABC as shown in the figure below. Find the co-ordinates of B and A in that order.



- 1 (-3, 6) and (-3, 5)
- 2 (-2, 1) and (6, -3)
- 3 (-3, 6) and (1, -2)
- 4 (6, −3) and (−2, 1)

Solution:

Correct Answer: 4

Let the coordinates of A, B and C be $(a_1,\ b_1),\ (a_2,\ b_2)$ and $(a_3,\ b_3)$ respectively

As mid point of (x_1, y_1) and (x_2, y_2) is given by

$$\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right)$$

 $\therefore a_1 + a_2 = 4, a_2 + a_3 = 2$ and $a_3 + a_4 = -6$

 \Rightarrow a₁ + a₂ + a₃ = 0

Solving these equations we get

 $a_1 = -2$, $a_2 = 6$

Similarly, $\bar{b}_1 + b_2 = -2$, $b_2 + b_3 = 6$ and $b_1 + b_3 = 10$

 $\Rightarrow b_1 + b_2 + b_3 = 7$

Solving these equations we get,

 $b_1 = 1, b_2 = -3$

∴ Coordinate of A and B are (-2, 1) and (6, -3) respectively.

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Answer key/Solution

Q.82

Ram's income is 40% less than Shyam's income, Monu's income is 20% less than Ram's income, and Sam's income is 40% less than Ram's income. If Shyam gave 60% of his income to Sam and 40% of his income to Monu, Monu's new income would be what fraction of Sam's new income?

1 0 11/12

2 0 13/17

4 0 12/19

Solution:

Correct Answer: 1

Let Shyam's income be 100xRam's income =100x(1-0.4)=60xMonu's income =60x(1-0.2)=48xSam's income =48x(1-0.25)=36x. After distribution,

$$\frac{\text{Sam income}}{\text{Monu's income}} = \frac{(36+60)x}{(40+48)x}$$

⇒ Monu's income =
$$\frac{11}{12}$$
 Monu's income.

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Answer key/Solution

Q.83

In a survey of political preferences, 78% of those surveyed were in favour of at least one of the proposals among I, II and III. 50% of those surveyed favoured proposal I, 30% favoured proposal II and 20% favoured proposal III. If 5% of those surveyed favoured all three of the given proposals, what percentage of those surveyed favoured more than one of the 3 proposals?

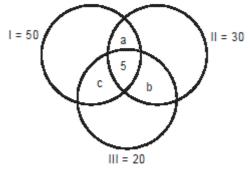
Solution:

Correct Answer: 17

As we know that

$$n(A \cup B \cup C) = n(A) + n(B) + n(C) - n(A \cap B) -$$

$$n(C \cap B) - n(A \cap C) + n(A \cap B \cap C)$$



$$\Rightarrow$$
 78 = 50 + 30 + 20 - (a + 5) - (b + 5) - (c + 5) + 5
 \Rightarrow a + b + c = 12

Hence, percentage of those who favoured more than one of the 3 proposals = 12 + 5 = 17.

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0.84

Two friends Yogi and Prasad started walking simultaneously from the same vertex of an equilateral triangle and walked in the same direction along the sides of the triangle. It was observed that after some time before meeting first time, one of them was at one of the vertices and the other one was at the foot of the altitude from that vertex. If they keep walking indefinitely, which of the following statements will be true about their meeting points?

■ Bookmark

Answer key/Solution

- 1 They will keep meeting only at one of the three vertices.
- 2 They will keep meeting at only two of the three vertices.
- 3 They will keep meeting at all three vertices.
- 4 Either (1) or (3)

Solution:

Correct Answer: 4

Lets assume the two of them start from a vertex as shown in the diagram below.

Also, let us assume that Yogi has a higher speed than Prasad (it does not matter who has the higher speed). In that case, the following situations are possible as per the data given. In each the ratio of their speeds is also given:



Ratio Speeds 4:1



Ratio Speeds 5:2



Ratio Speeds 2 : 1



Ratio Speeds 7 : 4



Ratio Speeds 8:5



Ratio Speeds 3:2

As we can see, the ratio of their speeds in reduced form can have a difference of either 3 or 1.

This means, they will either meet at only one of the three vertices or all three vertices.

FeedBack

Q.85

There are some white balls, red balls, black balls and green balls in a box. If all the green balls are taken out of the box, the number of balls in the box are reduced by half. If half of the red balls is equal to one-third of black balls, twice the number of red and black balls put together is 4 more than three times the black balls, and half of white balls is equal to one-third of green balls, find the number of green balls.

Correct Answer: 60

Let total number of balls be 2x. i.e., White + Red + Black + Green = 2x ⇒ Green balls = x

Also,
$$\frac{1}{2}$$
[Red] = $\frac{1}{3}$ [Black]

$$\Rightarrow \frac{1}{2}$$
 [White] = $\frac{1}{3}$ [Green]

$$\Rightarrow$$
 W = $\frac{2x}{3}$

Similarly,
$$R = \frac{2}{3}B$$
 ... (ii)

By (i) and (ii)

Red = 8

Black = 12

Now, R + B = 2x - W - G

$$\Rightarrow 2x - \frac{1}{3}2x - \frac{1}{2}2x = 20$$

$$\Rightarrow$$
 20 = $\frac{1}{6}$ × 2x

$$\Rightarrow$$
 x = 60.

FeedBack

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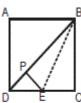
Answer key/Solution

Q.86

In a square ABCD, P is a point on the diagonal BD such that BP : PD = 3:1 and E is the midpoint of CD. Find \angle BPE.

- 1 0 **30°**
- 2 0 60°
- 3 0 **90**°
- 4 0 120°

Correct Answer: 3



Let the side of the square ABCD be 4.

then BD =
$$4\sqrt{2}$$

and BP =
$$3\sqrt{2}$$

$$PD = \sqrt{2}$$
,

In triangle DPE, ∠PDE = 45°

PE2=DP2+DE2-2 × DP × DE × Cos 45°

$$PE^2 = 2 + 4 - 2 \times \sqrt{2} \times 2 \times \left\{ \frac{1}{\sqrt{2}} \right\}$$

$$PE = \sqrt{2} = DP$$

FeedBack

Q.87

Find the value of $(\log_x a + \log_{x^{1/2}} a^2 + \log_{x^{1/3}} a^3 ... + \log_{x^{1/n}} a^n)$.

$$_3 \bigcirc log_{\chi}a$$

$$4 \bigcirc \frac{1}{6} [n(n+1)(2n+1)] \log_X a$$

Solution:

Correct Answer: 4

$$(\log_x a + \log_{x^{1/2}} a^2 + \log_{x^{1/3}} a^3 ... + \log_{x^{1/n}} a^n)$$

$$= \left(\frac{\log a}{\log x} + \frac{4\log a}{\log x} + \frac{9\log a}{\log x} + \dots + \frac{x^2\log a}{\log x}\right)$$

$$=\frac{[n(n+1)(2n+1)]}{6}\log_x a$$

FeedBack

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♠ Answer key/Solution

■ Bookmark

Q.88

If $a^2 + b^2 + c^2 = 1$, where, a, b and c are real number, then which of the following cannot be the value of (ab + bc + ac)?

- 1 0 -1
- 2 -1/2
- 3 0 1/2
- 4 0 1

Solution:

Correct Answer: 1

We know that $(a+b+c)^2 = a^2 + b^2 + c^2 + 2(ab+bc+ca)$ = 1 + 2(ab +bc + ca) Since $(a+b+c)^2 \ge 0$ we can say that, 1 + 2(ab + bc + ca) ≥ 0 ab + bc + ca $\ge -1/2$.

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Answer key/Solution

Q.89

If the number of digits in 4^{1000} is x and the number of digits in 25^{1000} is y, what is the value of (x + y)?

- 1 2000
- 2 2001
- 3 **2002**
- 4 0 1998

Solution:

Correct Answer: 2

 4^{1000} and 25^{1000} can be written as 2^{2000} and 5^{2000} respectively.

Number of digits in 22000 + Number of digits in 52000

$$\left[\log 2^{2000} \right] + 1 + \left[\log 5^{2000} \right] + 1$$

$$\cdot \left[\log (2^{2000} \times 5^{2000}) \right] \times +1 + 1 - 1 = 2001$$

As we know the sum of Mantissa log2 and log5 is

1.of A is common to b 4¹⁰⁰⁰ × 25¹⁰⁰⁰ has 2001 digits (x + y) = 2001

FeedBack

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Q.90

What is the remainder when 296 is divided by 105?

Solution:

Correct Answer: 1

$$\operatorname{Rem}\left[\frac{2^{96}}{3}\right] = 1$$

$$\operatorname{Rem}\left[\frac{2^{96}}{5}\right] = 1$$

$$\operatorname{Rem}\left[\frac{2^{96}}{7}\right] = 1$$

Using Chinese remainder theorem, the required remainder will be the smallest number which when divided by 3, 5 and 7 leaves remainder 1.

The smallest number satisfying the above condition is 1. Hence, the required remainder is 1.

Alternative method:

 $105 = 3 \times 5 \times 7$ and

$$105 \times \left(1 - \frac{1}{3}\right) \left(1 - \frac{1}{5}\right) \left(1 - \frac{1}{7}\right) = 48.$$

So there are 48 numbers which are less than 105 which are co-prime to it.
Using Euler theorem,

Rem
$$\left[\frac{2^{48}}{105}\right] = 1$$

$$\therefore \text{ Rem} \left[\frac{2^{96}}{105} \right] = 1.$$

FeedBack

Q.91

If the number of possible selections of 6 different letters from the words SUMAN and DIVYA such that each selection contains 3 letters from each word, is N^2 . Find the value of N.

1 0 10

2 0 8

3 0 4

4 0 6

■ Bookmark

Solution: Correct Answer: 2 If A is selected: As A is common to both the words $\therefore \text{ Number of ways to select } 6 \text{ different letters from } $ the two words = $2 \times {}^4C_2 \times {}^4C_3 = 48$ If A is not selected: The number of ways = ${}^4C_3 \times {}^4C_3 = 16$ Now, total number of ways = 64 N ² = $64 \Rightarrow N = 8$. FeedBack	■ Bookmark Answer key/Solution			
Q.92 N = a + b + c, where N is an odd natural number and a, b and c are distinct nature. How many ordered triplets (a, b, c) are possible?	al numbers less than 8.			
Solution: Correct Answer : 96	■ Bookmark			
Since N is odd, either all three numbers are odd or only one of them can be odd. Number of ways in which a, b and c are all odd = ${}^4C_1 = 4$ Number of ways in which only one of them is odd and the other two are even = ${}^3C_2 \times {}^4C_1 = 12$ Hence, the number of required triplets (a, b, c) = (4 + 12) × 3! = 96. FeedBack	Answer key/Solution			
Q.93 Let "A" = {1, 4, 7, 10, 13, 16,, 100}. A new set "B" is created from the elements of no two elements of B is equal to 104. What can be the maximum number of elements.				
1 0 32				
2 0 19				
3 🔍 17				
4 0 18				

Correct Answer: 4

Total number of elements in the original set A is $1+3(n-1)=100 \Rightarrow n=34$ So consider the below groups of numbers $\{1\}, \{52\}, \{4, 100\}, \{7, 97\}, \{10, 94\},...\{49, 55\}$ There are 2 groups with 1 element each and 16 groups with 2 elements each.

When one number from each group is selected, these numbers when added in any pair format will never be equal to 104 as this set doesn't contain the other half of every number which will add up to 104. So there can be a maximum of 18 elements in the set B.

FeedBack

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Answer key/Solution

0.94

Amit borrows Rs.5000. He plans to pay off the full loan amount in two payments. He will make one payment at the end of 3 years, then another payment at the end of 6 years. The second payment will be exactly double the amount of the first payment. What is the value of the first payment (approximate) if the interest rate of the loan is 10% per annum, compounded annually?

- 1 Rs. **2666**
- 2 Rs. 2659
- 3 Rs. 2700
- 4 Rs. 2899

Solution:

Correct Answer: 2

Amount at the end of 3 years = $5000[1.1]^3 = 1.331 \times 5000 = 6655$ Repayment = x Remaining amount = 6655 - xAmount at the end of another 3 years = $(665 - x) \times 1.331 = 2x$ $\Rightarrow 3.331x = 6655 \times 1.331$ $\Rightarrow x = 2659.2 \approx 2659$.

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Answer key/Solution

0.95

Manish told Mayank his score in ACT, which was over 50. From this, Mayank was able to determine the number of problems Manish solved correctly. If Manish's score had been any lower, but still over 50, John could not have determined this. ACT has 30 questions. 4 marks are awarded for every correct answer and 1 mark is deducted for every wrong answer. No penalty for unanswered questions. What is Manish's score?

Correct Answer: 89

Let c represent number of questions answered correctly, w represent number of questions answered wrongly and x represent number of unanswered questions.

$$(c + w + x) = 30$$

Score =
$$4c - w = 4(c - 1) - (w - 4)$$

Number of unanswered questions cannot be 5 or more as 1 correct and 4 wrong would produce the same score as 5 unattempted questions.

And similarly number of questions answered wrongly cannot be 4 or more.

⇒ c ≤ 23

For c = 23 and w = 3 gives a score of $23 \times 4 - 3 = 89$

For c = 24 and w = 7 gives a score of $23 \times 4 - 3 = 89$

but c + w > 30

Hence the score is 89.

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Answer key/Solution

0.96

If $x + y = x^2 + y^2 - xy$, number of positive integral solutions for the equation is

Solution:

Correct Answer: 3

 $\chi + y = \chi^2 + y^2 - \chi y$ $2x + 2y = 2x^2 + 2y^2 - 2xy$ $2x^2 + 2y^2 - 2xy - 2x - 2y = 0$ $x^2 - 2x + y^2 - 2y + x^2 - 2xy + y^2 = 0$ $(x^2 - 2x + 1) + (y^2 - 2y + 1) + x^2 - 2xy + y^2 = 2$ $(x-1)^2 + (y-1)^2 + (x-y)^2 = 2$ No term in the LHS can be negative. They can be 0 or 1 or 2 Case 1: |x - y| = 0

x = 2 and y = 2

x = 0 and y = 0

Case 2:

|x - y| = 1

x = 1, y = 0

x = 0, y = 1

x = 2, y = 1x = 1, y = 2

Number of positive integral solutions (x, y) are three

i.e., (2, 2) (2, 1) and (1, 2).

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Answer key/Solution

Q.97

A cone of height H, is cut into 5 pieces of equal volume. These cuts have been made parallel to the base. Find the height of the third piece from the bottom.

$$\begin{array}{c} 1 \ \bigcirc \left(\left(\frac{3}{5} \right)^{\frac{1}{3}} - \left(\frac{2}{5} \right)^{\frac{1}{3}} \right) H \end{array}$$

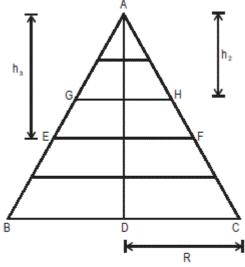
$$2\,{}^{\textstyle\bigcirc}\,\frac{H}{5}$$

$$3 \bigcirc \left(\left(\frac{3}{5} \right)^{\frac{1}{2}} - \left(\frac{2}{5} \right)^{\frac{1}{2}} \right) H$$

$$4 \bigcirc \left(\frac{3}{5}\right)^{\frac{1}{3}} \times H$$

Correct Answer: 1

■ Bookmark



Cone is cut into line part as shown above.

Let the radius and height of the original cone be R and H respectively.

Now, it can be easily observed that $\Delta \text{ABC} \sim \Delta \text{AEF} \sim \Delta \text{AGH}$

So,
$$\frac{AE}{AB} = \frac{EF}{BC} = \frac{h_3}{H}$$
 (h₃ = height of cone above second

part)

Now, volume of cone AEF = $3/5 \times volume$ of original cone

And, volume of cone AGH = $2/5 \times volume$ of original cone

$$\therefore \frac{\text{Volume of cone AEF}}{\text{Volume of cone ABC}} = \frac{\text{EF}^2 \times \text{h}_3}{\text{BC}^2 \times \text{H}}$$

$$\Rightarrow \frac{h_3^3}{H^3} = \frac{3}{5} \Rightarrow h_3 = \left(\frac{3}{5}\right)^{\frac{1}{3}}H$$

Similarly

$$\Rightarrow \frac{h_2^3}{H^3} = \frac{2}{5} \Rightarrow h_2 = \left(\frac{2}{5}\right)^{\frac{1}{3}} H$$

(h2 = height of cone above third part)

The height of the third part, $h = h_3 - h_2$

$$= \left(\left(\frac{3}{5} \right)^{\frac{1}{3}} - \left(\frac{2}{5} \right)^{\frac{1}{3}} \right) H.$$

FeedBack

Q.98

Priya, who is standing on a platform, noted that Trichy express took 8 minutes to cross her, and Chennai express, travelling in the opposite direction to Trichy express took 12 minutes to cross her. The two trains took 9 minutes to cross each other. Assuming each train maintained a constant speed, and given that Chennai express was 150 m long, what was the length (in m) of the Trichy express?

1 0 175

2 0 300

Correct Answer: 2

Speed (in m/s) of Chennai express = $\frac{150}{720}$

Let the length of Trichy express be L meter

Similarly, Speed of Trichy express = $\frac{L}{480}$

so the sum of speeds =
$$\frac{150}{720} + \frac{L}{480}$$
 ...(1)

Now when the trains are crossing each other, total time = total sum of both lengths/total sum of speeds of

both trains
$$\Rightarrow 540 = \frac{(L + 150)}{\text{(sum of speeds)}}$$

or sum of speeds =
$$\frac{(L + 150)}{540}$$
 ...(2)

From (1) and (2),
$$\left(\frac{150}{720}\right) + \left(\frac{L}{480}\right) = \frac{(L+150)}{540}$$
.

This will result in L = 300.

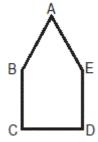
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Answer key/Solution

Q.99

In the figure given below ABCDE is a fenced park, in which ABE is an equilateral triangle and BCDE is a square of side 2 m each. A goat is tethered with a rope, of length 5 m, at point E. What is the maximum area (in sq. meter) that the goat can graze outside the given figure?



$$1 \odot \frac{121\pi}{6}$$

$$2 \odot 20\pi$$

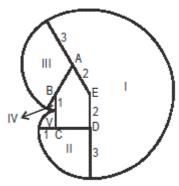
$$3 \odot \frac{125\pi}{10}$$

4 None of these

Answer key/Solution

■ Bookmark

The grazing area is pictorially represented below. The dimensions mentioned are lengths.



Area of part (I) =
$$\left[\frac{210}{360}\right] \times \pi \times 5^2 = 175 \frac{\pi}{12}$$

Area of part (II) =
$$\left[\frac{90}{360}\right] \times \pi \times 3^2 = \frac{27\pi}{12}$$

Area of part (III) =
$$\left[\frac{120}{360}\right] \times \pi \times 3^2 = 3\pi = \frac{36\pi}{12}$$

Area of part (IV) =
$$\left[\frac{30}{360}\right] \times \pi \times 1^2 = \frac{\pi}{12}$$

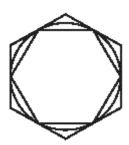
Area of part (V) =
$$\left[\frac{90}{360}\right] \times \pi \times 1^2 = \frac{\pi}{4} = \frac{3\pi}{12}$$

Therefore, total area =
$$\frac{121\pi}{6}$$
.

FeedBack

Q.100

In the figure given below, a circle is drawn passing through the vertices of a regular polygon and also this circle itself is circumscribed by another regular polygon. What is the area enclosed between the two polygons, if the radius of the circle is 6 cm?



- 1 36√3 cm²
- 2 54√3 cm²
- 3 0 36 cm²
- $4^{\circ} 18\sqrt{3} \text{ cm}^2$

Correct Answer: 4

These regular polygons are regular hexagons. The side of the inner hexagon is same as the radius of the circle = 6 cm

The side of the outer hexagon = $\frac{r}{\sin 60^{\circ}} = \frac{12}{\sqrt{3}} = 4\sqrt{3}$

The area enclosed by the two hexagons = Area of outer hexagon - Area of inner hexagon

$$6 \times \frac{\sqrt{3}}{4} \left[(4\sqrt{3})^2 - (6)^2 \right] = 18\sqrt{3} \text{ cm}^2.$$

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