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VARC

LRDI

QA

Sec 1

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

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Cinema itself first appeared in India when the Lumière Cinématographe was exhibited in Bombay at Watson's Hotel on 7 July 1896. Screenings in Calcutta and Madras soon followed, and by 1898 the Indian photographers Hiralal Sen (1866–1917) (founder of the Royal Bioscope Company in Calcutta) and H. S. Bhatavdekar (b. 1868) began producing short films and recording popular theatre performances. Although he was not the first Indian to shoot or exhibit films, the "father of Indian cinema" is justifiably identified as Dhundiraj Govind (Dadasaheb) Phalke (1870–1944), whose Raja Harishchandra (1913), drawn from a story in the Mahabharata , initiated feature-length narrative films of distinctively Indian character. According to legend, viewing a film depicting the life of Christ inspired Phalke to put Hindu gods on screen, a motive that aligned him with the swadeshi (indigenous) movement demanding independence from Britain through boycott of foreign goods. Following Phalke's lead, well over a thousand silent films were produced in India, but the fact that few have survived frustrates accurate accounts of the first decades of cinema produced in India.

In 1906 J. F. Madan's Elphinstone Bioscope Company in Calcutta began regular film production, and by 1917 Baburao Painter established the Maharashtra Film Company in Kolhapur. For the following two decades, an expanding studio system would ensure steady film production throughout India: by the early 1930s, major studios such as New Theatres (Calcutta), Prabhat (Pune), and the Bombay-based Kohinoor Film Company, Imperial Film Company, Wadia Movietone, Ranjit Movietone, and Bombay Talkies offered audiences commercially differentiated genres and distinctive stars. Himansu Rai's Bombay Talkies, organized as a corporation, relied on European financing, technology, and talent (notably the German director Franz Osten [1876–1956]); in 1940 Rai's widow and the studio's biggest female star, Devika Rani (1907–1994), took over the company. India's first sound film, Alam Ara (1931), directed by Ardeshir M. Irani (1886–1969) for Imperial, firmly established the importance of song and dance sequences in popular Indian cinema as well as the future identification of Indian films along regional lines determined by language. By the following year, V. Shantaram (1901–1990) began to direct innovative films in both Marathi and Hindi for Prabhat (often starring the legendary actress Durga Khote [1905–1991]), demonstrating Indian cinema's quick adjustment to new sound technologies as well as different linguistic markets. However, as Bombay became the center of Indian film production, a variety of spoken Hindi—or Hindustani—would soon establish itself as Indian cinema's dominant screen language.

Q.1
What is the primary purpose of the passage?

1 ◯ To dwell on the influences of ancient Indian epics on the evolution of modern Indian cinema

2 ○ **To trace the evolution of Indian cinema till its 1930s form**

3 ○ **To throw light on the significance of film personalities who made tremendous contributions to Indian cinema in its nascent stage**

4 ○ **To narrate a comparative study on the relationship between theatre and cinema**

Solution:
Correct Answer : 2
Genre: Cultural Studies / Film and Culture
Word Count# 592
Option 1 – It is too narrow. It just talks about the author's point in the first paragraph.
Option 2 – It is the correct answer as the author analyses the beginning of Indian cinema, people who influenced its growth, and its transition from the silent era to the talkies. So, the timeline of 1930s fits.
Option 3 – The author does give a lot of names and data in the passage. However, not everyone who influenced the growth of Indian cinema is a film personality. Secondly, the author doesn't focus on these personalities.
Option 4 – It goes beyond the scope of the passage.

🔖 **Bookmark**

🔍 Answer key/Solution

FeedBack

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Q.2
According to the passage, all of the following are true about the development of the Indian cinema EXCEPT:

1 ○ certain forms of theatres preceded the arrival of Indian cinema.

2 ⚪ **the Lumière Cinématographe exhibition in Bombay followed the screenings in Calcutta and Madras.**

3 ⚪ **Hiralal Sen and H. S. Bhatavdekar are founders of the Royal Bioscope Company in Calcutta.**

4 ⚪ **V. Shantaram began to direct maverick films in both Marathi and Hindi in 1932.**

Solution:

Correct Answer : 2

Genre: Cultural Studies / Film and Culture

Word Count# 592

Option 1 - Refer to the line "Theatrical forms such as the Westernized Parsi (or Parsee) theatre and the Marathi Sangeet Natak (musical theater) immediately preceded the arrival of cinema…"

Option 3 - Refer to the line "…by 1898 the Indian photographers Hiralal Sen (1866–1917) (founder of the Royal Bioscope Company in Calcutta) and H. S. Bhatavdekar (b. 1868) began producing short films and recording popular theatre performances."

Option 4 - Refer to the line "V. Shantaram (1901–1990) began to direct innovative films in both Marathi and Hindi for Prabhat (often starring the legendary actress Durga Khote [1905–1991])…"

Option 2 – It is the correct answer as it distorts a fact given in the passage. The screenings in Calcutta and Madras followed the exhibition of the Lumière Cinématographe Bombay at Watson's Hotel on 7 July 1896. Refer to "Cinema itself first appeared in India when the Lumière Cinématographe was exhibited in Bombay at Watson's Hotel on 7 July 1896. Screenings in Calcutta and Madras soon followed…"

🔖 **Bookmark**

🔍 **Answer key/Solution**

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Q.3
What can be inferred about the Indian cinema before the release of Alam Ara in 1931?

1 ○ Indian cinema was influenced by archaic story lines.

2 ○ **Indian cinema was influenced by overtly religious western cinema.**

3 ○ **Indian cinema was without sound.**

4 ○ **Indian cinema was primarily dependent on the production of short films and recording of popular theatre performances.**

Solution:

Correct Answer : 3

Genre: Cultural Studies / Film and Culture

Word Count# 592

Option 1 – Indian cinema was influenced by the ancient epics. However, that can't be equated with 'archaic story lines' as the word 'archaic' carries a primarily negative connotation.

Sentence 2 – 'Overtly western religious cinema' can't be supported by the passage.

Sentence 4 – 'Primarily dependent' is logically incorrect.

Option 3 - Since 'Alam Ara' was India's first sound cinema it can be safely concluded that all Indian movies made before it were silent movies.

FeedBack

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Q.4
According to the passage, there are no accurate accounts of silent films produced in India in the first decade of Indian cinema because:

1 ○ filmmakers' core job was to only produce films and not to preserve them.

2 ○ **many filmmakers of the decade used cheap films.**

3 ○ **the film technology was still unsophisticated.**

4 ○ **very few silent films of the time could be preserved.**

Solution:
Correct Answer : 4
Genre: Cultural Studies / Film and Culture
Word Count# 592
Refer to "Following Phalke's lead, well over a thousand silent films were produced in India, but the fact that few have survived frustrates accurate accounts of the first decades of cinema produced in India." The other options are not mentioned in the given passage. So, option 4 is the correct answer.

🔖 Bookmark

🔍 Answer key/Solution

FeedBack

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Q.5
Which of the following is true according to the given passage?

1 ○ Raja Harischandra was a feature-length sound film produced by Dadasaheb Phalke.

2 ○ **Hindi was the only language in which Indian films of the time were made.**

3 ○ **Lithographs influenced the progress of photography in Indian cinema.**

4 ○ **Devika Rani owned Bombay Talkies studio but never acted in films.**

Solution:

Correct Answer : 3

Genre: Cultural Studies / Film and Culture

Word Count# 592

Option 1 – Raja Harischandra was a silent film as per the passage as Alam Ara was the first talkie film in India and it was made after Raja Harischandra released.

Option 2 – Can't be determined.

Option 3 - Refer to "The mass-produced lithographs of Raja Ravi Varma (1848–1906), often depicting Hindu gods and goddesses in naturalistic forms and settings, were also influential transitional works encouraging the adaptation of Indian visual traditions into the realistic media of early photography and film." So, lithographs did influence the development of photography. This is the best choice.

Option 4 – Refer to the line "…in 1940 Rai's widow and the studio's biggest female star, Devika Rani (1907–1994), took over the company." So, she clearly was an actor.

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Q.6
The author arranges his ideas in the passage by:

1 ○ introducing his topic and then explaining it by the help of facts.

2 ○ **subtly introducing his stance and then defending it with the help of data.**

3 ○ **explaining his aim of study and then doing an analysis of its impact.**

4 ○ **highlighting his view on the topic and then critiquing its nuances.**

Solution:
Correct Answer : 1
Genre: Cultural Studies / Film and Culture
Word Count# 592
The author maintains a neutral tone throughout the passage. S/he doesn't analyse, critique, or defend any viewpoint. In fact, the author doesn't give any strong conclusion or personal opinion in the passage. Hence, option 1 is the only possible answer.

🔖 **Bookmark**

🔍 **Answer key/Solution**

FeedBack

Directions for question 7: The passage given below is followed by four summaries. Choose the option that best captures the author's position.

Q.7
"Cynical people are going to use individual examples of women's bad behavior to argue that sexual harassment and assault are not part of structural misogyny, even that such abuses have no gender at all," tweeted the feminist writer Moira Donegan in response to the Argento news. "Ignore these people; they have little interest in justice." To some feminists, the question was not as unwelcome as one might expect. The #MeToo founder, Tarana Burke, asserted on Twitter that it is only through the kind of hard conversations that will be prompted by stories such as Argento's that the movement can actually succeed. "This movement is making space for possibility," Burke wrote. "But, it can only happen after we crack open the whole can of worms and get really comfortable with the uncomfortable reality that there is no one way to be a perpetrator … and there is no model survivor."

1 ○ **The #MeToo movement has given rise to many difficult questions which have to be answered before these women can be taken seriously.**

2 ○ **Cynicism has disrupted the #MeToo dialogue and cases like that of Argento can only derail the movement further.**

3 ○ **The question of some individual female bad behaviour can't be ignored and such discussions are important for the long term sustenance of an important movement like #MeToo.**

4 ○ **The cynicism with which men have attacked the #MeToo movement on the basis of a few individual female behaviours is a further sign that men have structured harassment and given it a concrete form.**

Solution:

Correct Answer : 3

The primary focus of the author is to state that the issue of a few individual women whose bad behaviours have given rise to some cynicism regarding the efficacy of #MeToo can't be ignored. In fact, this kind of dialogue is necessary if the movement is to achieve its goal. The author basically quotes some of the people associated with the movement to make these points.

Option 1 – 'These women are to be taken seriously' is a distortion. The author doesn't put any condition on when to take the voice of the women seriously.

Option 2 – This is too negative a summary to match the author's neutral tone.

Option 4 – This one unnecessarily focuses on blaming men for the problem in the movement.

Option 3 – This is the best choice.

FeedBack

Q.8

Directions for question 8: Five sentences related to a topic are given below. Four of them can be put together to form a meaningful and coherent short paragraph. Identify the odd one out.

1. Climatologists have long been warning of new atmospheric conditions which make freak events the new normal.

2. The latest by Jennifer Francis comes in the April edition of Scientific American which predicts massive coastal flooding within the next 20 years.

3. Climate change, bringing Arctic meltdown, has serious global effects which mean very much more than the extinction of polar bears.

4. In the short term, however, we should be concerned about the return of more "beast" events next month or even in May, when plant growth will be in full swing.

5. The beastly weather and climate catastrophe is scaring people all over the US.

Solution:

Correct Answer : 5

The correct sequence is 3124. 5 is the odd sentence out as it is centres around the US, however the others refer to global effects. Sentence 3 opens the paragraph as it introduces the topic- climate change having global effects.

1 and 2 create a mandatory pair as 1 mentions 'climatologists' and 2 names one- 'Jennifer Francis'. 2 talks about effects that will take place within the next 20 years, while 4 asks for a focus on short term effects, and thereby establishes a mandatory pair.

FeedBack

Q.9

Directions for question 9: The five sentences (labelled 1, 2, 3, 4, 5) given in this question, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a number. Decide on the proper order for the sentences and key in this sequence of five numbers as your answer.

1. The merger was traced to the galaxy NGC 4993, located 130 million light years from Earth.

2. The observations confirm that gamma-ray bursts shorter than about two seconds originate from neutron-star mergers.

3. The first direct observation of a merger of two neutron stars—the remnants of massive stars that died in a supernova—occurred on August 17.

4. The data indicate that some, and perhaps all, of these elements come from the rapid neutron capture process after such a merger.

5. The observation also resolved a question about the origin of elements heavier than iron, such as silver, gold, and platinum.

Solution:

Correct Answer : 31254

5 and 4 create a mandatory pair – 'these elements' in 4 refer to 'silver, gold, and platinum' in 5.

3 has to be the opening sentence as it defines 'the merger' mentioned in the other sentences.

3 and 1 is a mandatory pair – 'merger' in 3 and 'the merger' in 1.

Between 2 and 5, 2 comes before 5 as 5 has the word 'also' indicating its position as the logical successor of 2.

Hence, 31254 is the correct sequence.

> FeedBack

Directions for questions (10 to 12): The passage below is accompanied by a set of three questions. Choose the best answer to each question.

Why on earth (where evolution rules) should abstract truth be so important to us? Why should it be even comprehensible? Why on earth would it be to the advantage of a creature to care about the truth in abstract, or to have a grasp of logic, or mathematics? All these capacities had clearly evolved in us long before they were useful. In fact, in the case of mathematics, and of logical reasoning, you can still find earlier and more primitive versions a very short distance under the rational surface of our minds.

We make most of our decisions "irrationally", as we do most of our thinking, based on biased, short-cut heuristics, something which is only surprising in the light of some contemporary myths about rationality. What's really surprising is that we understand that there are other ways to think, and that these other ways – let's group them for a moment under "logical reasoning" – seem, so far as we can tell, to be timeless and objective truths. The laws of logic are there, and work to lead us to correct conclusions, whether we like them or not. They were all discovered, rather than invented. They are features of the universe, not social conventions like money. This also goes for the facts that scientific theories explain: the world could be mathematically described long before human beings existed, and longer still before Galileo, Kepler, and Newton.

Some people would argue that what seem like features of the universe are just helpful cognitive tricks that we have stumbled on and that we have been selected for those cognitive habits without reference to their wider truths. That's clearly how a lot of instincts work: fish, for example, are easily scared by things moving above them without necessarily having any concept of birds, or even people fishing. A footballer can kick a ball or an opponent without the intellectual equipment required of an artillery officer trying to make a shell land on target. But the kind of reasoning needed to reach logical or mathematical conclusions is different in kind from the implicit knowledge we draw on for most of our lives.

Q.10
As per the passage, which of the following leads us to identify correct conclusions?

1 ○ **Objective truths**

2 ○ **Laws of logic**

3 ○ **Our dislike for logical reasoning**

4 ○ **Scientific theories**

Solution:
Correct Answer : 2
Genre: Logic / Philosophy
Word Count# 355
Refer to the line, "The laws of logic are there, and work to lead us to correct conclusions, whether we like them or not." So, option 2 is the only possible answer.

🔖 **Bookmark**

🔍 Answer key/Solution

FeedBack

Directions for questions (10 to 12): The passage below is accompanied by a set of three questions. Choose the best answer to each question.

Why on earth (where evolution rules) should abstract truth be so important to us? Why should it be even comprehensible? Why on earth would it be to the advantage of a creature to care about the truth in abstract, or to have a grasp of logic, or mathematics? All these capacities had clearly evolved in us long before they were useful. In fact, in the case of mathematics, and of logical reasoning, you can still find earlier and more primitive versions a very short distance under the rational surface of our minds.

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Q.11
Why does the author give the example of the fish in the last paragraph?

1 ○ To show that most of the features of the universe are just helpful cognitive tricks

2 ○ To differentiate between logical and mathematical reasoning

3 ○ To talk about the role of instincts in reasoning processes

4 ○ To show that our instincts need the awareness of wider objective truths

Solution:
Correct Answer : 3
Genre: Logic / Philosophy
Word Count# 355
The author always gives examples to strengthen or further explain his main point.
Option 1 – This is a distorted option. The author mentions 'helpful cognitive tricks' in a rhetoric manner.
Option 2 – This goes beyond the scope of the passage.
Option 3 – This is the main idea of the paragraph where the example is given. So, it is the correct answer.
Option 4 – This is an out of context option.

🔖 **Bookmark**

🔍 **Answer key/Solution**

[FeedBack]

Directions for questions (10 to 12): The passage below is accompanied by a set of three questions. Choose the best answer to each question.

Why on earth (where evolution rules) should abstract truth be so important to us? Why should it be even comprehensible? Why on earth would it be to the advantage of a creature to care about the truth in abstract, or to have a grasp of logic, or mathematics? All these capacities had clearly evolved in us long before they were useful. In fact, in the case of mathematics, and of logical reasoning, you can still find earlier and more primitive versions a very short distance under the rational surface of our minds.

We make most of our decisions "irrationally", as we do most of our thinking, based on biased, short-cut heuristics, something which is only surprising in the light of some contemporary myths about rationality. What's really surprising is that we understand that there are other ways to think, and that these other ways – let's group them for a moment under "logical reasoning" – seem, so far as we can tell, to be timeless and objective truths. The laws of logic are there, and work to lead us to correct conclusions, whether we like them or not. They were all discovered, rather than invented. They are features of the universe, not social conventions like money. This also goes for the facts that scientific theories explain: the world could be mathematically described long before human beings existed, and longer still before Galileo, Kepler, and Newton.

Some people would argue that what seem like features of the universe are just helpful cognitive tricks that we have stumbled on and that we have been selected for those cognitive habits without reference to their wider truths. That's clearly how a lot of instincts work: fish, for example, are easily scared by things moving above them without necessarily having any concept of birds, or even people fishing. A footballer can kick a ball or an opponent without the intellectual equipment required of an artillery officer trying to make a shell land on target. But the kind of reasoning needed to reach logical or mathematical conclusions is different in kind from the implicit knowledge we draw on for most of our lives.

Q.12
What does the author imply when he states that "We make most of our decisions 'irrationally'"?

1 ○ S/he wants to lament the lack of any objective logical reasoning in our daily decision making process.

2 ○ S/he wants to highlight the fact that we inherently don't need abstract truths.

3 ○ S/he wants to showcase our unawareness of logical reasoning while taking decisions.

4 ○ S/he wants to show how we voluntarily choose a limited set of knowledge while making decisions.

Solution:

Correct Answer : 4

Genre: Logic / Philosophy

Word Count# 355

Refer to the entire second paragraph. What the author states is that we are aware of the existence of logical reasoning, a set of data which has proven to be true for quite long. However, we still take decisions based on limited existing contemporary knowledge. So, s/he wants to highlight this aspect of our rationalising process by calling it "irrational". S/he doesn't mean it literally.

Option 1 – The author says we take 'most decisions' in this way. We can't conclude that there isn't 'any logical reasoning' involved in our decision making process.

Option 2 – This is an out of context option. The concept of objective truth is raised in the first paragraph just to build the case of logical reasoning. It's not even part of the author's main point.

Option 3 – Refer to the line, "What's really surprising is that we understand that there are other ways to think, and that these other ways – let's group them for a moment under "logical reasoning" – seem..." It clearly shows that we are AWARE and not UNAWARE of the existence of logical reasoning. Hence, it is incorrect.

Option 4 – This, in a way, is the main idea of the entire paragraph. Hence, it is the correct answer.

FeedBack

Q.13

Directions for question 13: The passage given below is followed by four summaries. Choose the option that best captures the author's position.

Healthcare is a peculiar industry. Cars get cheaper but medical care doesn't. That is because a life saved from cancer is a life waiting to be killed by another disease, which needs treating, too. Survivors of cancer get heart attacks and survivors of heart attacks get cancer, and survivors of both get dementia. It's like a restaurant where you can't just pay for lunch - you also have to pay for breakfast and dinner and maybe a few samosas in between. But unlike eating, consumption of medical care is not guarded by satiety.

1 ○ Medical care is extremely costly because human beings tend to catch diseases sooner rather than later.

2 ○ Medical care can never be cheap like cars or other commodities since there is something new going on in the world of medicine every day.

3 ○ Medical care unlike other commodities has no benchmark when it comes to satisfaction and thus lacks a limiting factor.

4 ○ Medical care is never going to be cheap since one human being can get many diseases and healthcare anyway is a peculiar industry.

Solution:

Correct Answer : 3

The argument in the passage is that 'consumption of medical care is not guarded by satiety.' Thus, 3 is the correct choice.

Option 1 – The focus of the summary is unnecessarily on 'extremely costly' and the cause given is distorted.

Option 2 – The part after 'since' is alien to the context of the paragraph.

Option 4 – 'Healthcare is anyway a peculiar industry' is alien.

FeedBack

Q.14

Directions for question 14: Five sentences related to a topic are given below. Four of them can be put together to form a meaningful and coherent short paragraph. Identify the odd one out.

1. Dark matter's existence is inferred from its gravitational influence on visible objects, which suggests it dominates over ordinary matter by a ratio of 5:1.

2. Some of the clearest evidence comes from tracking stars in the outer regions of galaxies, which consistently appear to be orbiting faster than their escape velocity, the threshold speed at which they ought to break free of the gravitational binds holding them in place and slingshot into space.

3. Theories of the universe suggest that everywhere that ordinary matter is found, black holes are lurking.

4. A distant galaxy that appears completely devoid of dark matter has baffled astronomers and deepened the mystery of the universe's most elusive substance.

5. "Something like this has never been seen," said Prof Pieter van Dokkum, of Yale University, the study's senior author.

Solution:

Correct Answer : 3

4512 can be arranged into a meaningful paragraph which talks about a galaxy devoid of dark matter. 3 talks about a theories of the Universe and black holes. This paragraph focuses on dark matters. So, 3 is the odd one out.

FeedBack

Q.15

Directions for question 15: The five sentences (labelled 1, 2, 3, 4, 5) given in this question, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a number. Decide on the proper order for the sentences and key in this sequence of five numbers as your answer.

1. The plan to synthesize human and other genomes was drawn up by 130 scientists, entrepreneurs, and policy makers.
2. The authors say that the project will advance many fields; for instance, synthetic genomes could offer more control over tissues grown in the lab for organ transplants.
3. Still, the paper has been criticized for failing to frame ethical questions that are in need of public scrutiny before such a project is undertaken.
4. An ambitious and pioneering plan to synthesize genomes has been met with a call for ethical and regulatory scrutiny.
5. They also say it will promote technology development and drive down the cost of synthesizing DNA.

Solution:

Correct Answer : 41253

4 is the topic sentence. Notice the use of 'an ambitious and pioneering plan...' This is a typical way of introducing the topic sentence.

4 and 1 become a mandatory pair – 'Plan' and 'the plan'.

2 has the word 'the authors' which refers to the people mentioned in 1. So, 2 will come next.

5 has 'they also say'. So, it has to come after 2.

3 gives a mild contradiction to 2 and 5 with 'still'.

So the correct sequence is 41253.

FeedBack

Directions for questions (16 to 18): The passage below is accompanied by a set of three questions. Choose the best answer to each question.

The Swiss sociologist and anthropologist Bernard Crettaz writes of the imperative to liberate death from what he calls 'tyrannical secrecy' — tyrannical, presumably, because whatever we remain quiet about enslaves us to our fears. In his 2010 book, *Cafés Mortels: Sortir la Mort du Silence*, or 'bringing death out of silence', he addresses the shameful irony of how, in our modern, Western society of communication, 'people have secrets that bully'. Crettaz has been hosting *cafés mortels* — social gatherings that put death at the centre of conversation — since 2004, in salons, bistros and private houses across Switzerland and France. In 2011 they were imported to the UK by a British Buddhist called Jon Underwood, and renamed Death Cafés. Around 1,000 people have so far attended Death Cafés in England, Wales, the US, Canada, Australia and Italy.

'I come from a mountain background, where people start talking about death when they are just little children,' Crettaz told *The Boston Globe* in 2010. 'I wanted to reproduce that — but where? I'd prefer a public square, but then someone suggested the café. It was a place where people shared intimacies, but in a relaxed way.' In Death Cafés, conversation is driven by ideas and questions that people never dared express before. Although Death Cafés do not offer grief therapy, private losses are, inevitably, shared: people talk movingly about suicide, accidental deaths, miscarriages, stillbirths, abortions. Parents of disabled children admit they can no longer cope; a son reveals how he practises a funeral rite for his mother — even though she's still alive.

Yet *cafés mortels* are also vital places, often raucous with laughter. Speaking about death scrubs away our facades, brings us closer to who we really are. There's a sense of liberation in such honesty, compounded by the idea that in talking about death, one is somehow breaking a taboo. Crettaz says that death is 'a scandal, a ghost that lives with us. But the goal is to get creative and make it a non-destructive ghost'.

Q.16
Which of the following has not been mentioned by the author as a benefit of talking openly about death?

1 ○ Talking about death helps us get rid of bullies.

2 ○ Talking about death gives us some form of solace.

3 ○ Talking about death gives us a sense of freedom.

4 ○ Talking about death reveals the real us.

Solution:

Correct Answer : 1

Genre: Sociology

Word Count# 331

Option 2 – Refer to the lines, "Although Death Cafés do not offer grief therapy, private losses are, inevitably, shared: people talk movingly about suicide, accidental deaths, miscarriages, stillbirths, abortions. Parents of disabled children admit they can no longer cope; a son reveals how he practises a funeral rite for his mother — even though she's still alive." This is clearly true according to the passage. So, option 2 is the incorrect choice.

Options 3 and 4 – Refer to the lines, "Speaking about death scrubs away our facades, brings us closer to who we really are. There's a sense of liberation in such honesty, compounded by the idea that in talking about death, one is somehow breaking a taboo." So, these are true too. Hence, these two can be eliminated.

Option 1 – It's clearly distorted. The line "people have secrets that bully' in the first paragraph doesn't refer to bullies literally. Additionally, this line has nothing to do with the question under discussion. So, option 1 is the correct choice.

FeedBack

Directions for questions (16 to 18): The passage below is accompanied by a set of three questions. Choose the best answer to each question.

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Q.17

Which of the following can be inferred about cafés mortels as per the passage?

1 ⚪ **Jon Underwood became interested in the concept of death due to his background.**

2 ⚪ **Crettaz believes that cafés mortels can prove to be as effective as therapy sessions when it comes to coping with grief.**

3 ⚪ **Crettaz aims to make death more creative a taboo in future.**

4 ⚪ **It has brought some uncomfortable topic to the forefront of discussion.**

Solution:

Correct Answer : 4

Genre: Sociology

Word Count# 331

This question can be answered by the process of elimination.

Option 1 – This is clearly incorrect. The passage doesn't give any background information on Jon Underwood.

Option 2 – This is incorrect. There is no mention of what Crettaz believes regarding therapy. We can't conclude that he is looking at his cafes as a substitute for professional therapy.

Option 3 – 'Creative taboo' makes this option distorted. Crettaz, in fact, believes in breaking taboos.

Option 4 – It is the main aim behind introducing the concept. Refer to the lines, "' In Death Cafés, conversation is driven by ideas and questions that people never dared express before. Although Death Cafés do not offer grief therapy, private losses are, inevitably, shared: people talk movingly about suicide, accidental deaths, miscarriages, stillbirths, abortions. Parents of disabled children admit they can no longer cope; a son reveals how he practises a funeral rite for his mother — even though she's still alive." So, option 4 can be clearly inferred from the passage.

🔖 **Bookmark**

🔑 Answer key/Solution

FeedBack

Directions for questions (16 to 18): The passage below is accompanied by a set of three questions. Choose the best answer to each question.

The Swiss sociologist and anthropologist Bernard Crettaz writes of the imperative to liberate death from what he calls 'tyrannical secrecy' — tyrannical, presumably, because whatever we remain quiet about enslaves us to our fears. In his 2010 book, *Cafés Mortels: Sortir la Mort du Silence*, or 'bringing death out of silence', he addresses the shameful irony of how, in our modern, Western society of communication, 'people have secrets that bully'. Crettaz has been hosting *cafés mortels* — social gatherings that put death at the centre of conversation — since 2004, in salons, bistros and private houses across Switzerland and France. In 2011 they were imported to the UK by a British Buddhist called Jon Underwood, and renamed Death Cafés. Around 1,000 people have so far attended Death Cafés in England, Wales, the US, Canada, Australia and Italy.

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Q.18
Which of the following is the main aim of Crettaz in starting cafés mortels?

1 ○ **To make social taboos easier to break**

2 ○ **To make people more open in talking about death**

3 ○ **To offer people an outlet to pour out their innermost feelings**

4 ○ **To honour his childhood by talking about death openly**

Solution:
Correct Answer : 2
Genre: Sociology
Word Count# 331
This question requires elimination too.
Option 1 – He is not concerned about taboos in general. He simply wants to break one taboo, i.e. death.
Option 2 – This is the main idea of the passage. So, it is the correct answer.
Option 3 – Only talking about death doesn't equate with 'innermost feelings'. Some innermost feelings are surely expressed. But the main idea was still talking about death.
Option 4 – This is vague. He was inspired by his background. However, 'honouring his background' is not main aim.

Bookmark

Answer key/Solution

FeedBack

Q.19

Genoa has always felt a strangely English place, too. The city's flag is a St George's cross. It was here that Italy's oldest football team, still called Genoa Cricket and Football Club, was founded by an English doctor. It went on to win nine scudetti (championships) in the glory days of the early 20th century. The English were just one of many influences. Genoa has always been an integral part of the Mediterranean basin and there are traces of Arabic and Portuguese in the dialect. The city's music, especially that of "the Italian Bob Dylan", Fabrizio De André, often sounds far more sophisticated than bubblegum Italian pop.

1 ○ **Genoa offers a great amalgamation of Italian and Anglo culture.**

2 ○ **England's occupation of Genoa has helped this city to evolve.**

3 ○ **Genoa through the help of merchants has become a shining example of cosmopolitanism.**

4 ○ **Genoa offers the best of both Eurozone and the British culture.**

Solution:

Correct Answer : 1

The passage mentions how Genoa feels like an English place and describes why. It even gives an example of "Italian Bob Dylan" to emphasise the Anglo influences on the city. So, option 1 is the correct choice.

Option 2 – This option lacks the main idea of the paragraph.

Option 3 – This is too vague and out of scope.

Option 4 – 'Best of both Eurozones and British culture' is incorrect. The paragraph only talks about Italian and Anglo culture.

🔖 **Bookmark**
🔍 Answer key/Solution

FeedBack

Q.20

Directions for question 20: Five sentences related to a topic are given below. Four of them can be put together to form a meaningful and coherent short paragraph. Identify the odd one out.

1. And not just for women, but for anyone who might previously have struggled to be heard in public life.
2. But the growing willingness of women to opt in even when tradition allows them to duck out suggests a wider cultural shift.
3. A wedding is one of the few times even those genuinely terrified of public speaking can't decently get out of, a time-honoured trial of nerves for the self-conscious.
4. Some people are wary of being the person who loves the sound of their own voice, but I think that has become quite old-fashioned now.
5. To have a voice, to speak up rather than sit there mute, feels increasingly charged and significant.

Solution:

Correct Answer : 4

The correct order is 3251. However, we don't need to arrange the remaining sentences to identify the odd one. 1, 2, 3, and 5 talk about people who are afraid of public speaking and how they are overcoming those fears. 4 talks about people who are normally confident of public speaking. It simply says that such people may be wary of being perceived as self-centred. So, 4 is the odd sentence.

FeedBack

Q.21

Directions for question 21: The five sentences (labelled 1, 2, 3, 4, 5) given in this question, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a number. Decide on the proper order for the sentences and key in this sequence of five numbers as your answer.

1. A bizarre new theme park that claims to be designed for "selfie tourism" in Indonesia is causing consternation over accusations that it unashamedly rips off famous international works of art.
2. Additionally it markets itself as a destination for "selfie tourism" and its Instagram account, which includes the tagline "the way to more happiness" punctuated by a rabbit emoji, features dozens of its guests taking photos at its installations.
3. Rabbit Town, he suggested, should apologise and clarify the permissions status for the works.
4. International artworks that are said to have been copied include Chris Burden's lampposts installation Urban Light – at Rabbit Town it is called Love Light – and several rooms that bear uncanny resemblances to displays at the Museum of Ice Cream in Los Angeles.
5. Sunaryo, a celebrated artist and gallery owner in Bandung, first heard about Rabbit Town when it went viral on social media this week.

Solution:

Correct Answer : 14253

1 is clearly the topic sentence – 'A bizarre ...theme park...'
1 and 4 make a mandatory pair. 1 talks about the park being accused of plagiarism. 4 gives examples of the same.
2 continues to talk about the theme park. 'Additionally' at the beginning makes it a thematic successor to 4.
5 introduces a new person whose opinion of the theme park matters. It says 'social media' and 2 talked about the park marketing itself on Instagram. So, 5 follows 2.
5 and 3 make a mandatory pair – Sunaryo – he.
So, 14253 is the correct sequence.

FeedBack

Directions for questions (22 to 27): The passage below is accompanied by a set of six questions. Choose the best answer to each question.

Moths belong to the night. We often only see them when light sends them spiralling down to surfaces, where they land and sit still, beaming out messages like antennaed aliens: Greetings from the World of Darkness.

For many, their presence evokes fear; for some, wonder. For Emmet Gowin, who made the diversity of the order Lepidoptera in parts of Latin America a subject of his photography, meeting these visitors was an opportunity to learn something new.

Over 160 million years of evolution, some 200,000 species of moths have developed an array of colours, shapes, sizes and behaviours. The largest moths have wingspans of up to a foot. They are important pollinators and destructive pests.

It took Mr. Gowin, best known for the intimate, black and white images he made of his wife, Edith, about 20 years to make the acquaintance of the nearly 1,300 moths from Panama, Colombia, Bolivia and Ecuador that he photographed for his latest book, Mariposas Nocturnas: Moths of Central and South America, A Study in Beauty and Diversity, which will be released on Wednesday. A related exhibit opens at the Pace/MacGill Gallery in New York on Thursday.

Alive, in color and against assorted backdrops from art history, Mr. Gowin's moths portray an acceptance of uncertainty in scientific discovery, the creative process and life more generally. They also present an exchange of beauty, a childlike curiosity and an appreciation for the hidden ties between humans and moths.

In the 1970s, Mr. Gowin held an old cigar box full of dead insects his children had collected. He sprinkled them atop the crumbling pages of a salvaged book.

He took a photograph and set it aside. "It was nothing in a way," he said in an interview, "a book you can no longer read and insects that can no longer fly."

His photography remained focused on other subjects, ranging from family to the assorted effects of human activity on the planet.

In 1997, Mr. Gowin began shooting a series of aerial photographs of the Nevada Test Site, where the United States government detonated more than 1,000 nuclear bombs from 1951 to 1992. Before long, Mr. Gowin welcomed a change from a landscape he found tragic. He accepted a friend's invitation to Ecuador, hoping to learn about ecology and finally study insects, particularly moths.

"This must be tragic too," he recalled, "but it's a new tragedy I'd like to learn about."

Five years later, Mr. Gowin created a poster of 25 living specimens arranged in a grid for the lobby of the Smithsonian Tropical Research Institute in Panama. The moths were so varied that even the woman who framed the poster was surprised that the winged models all hailed from the same Panama she did.

Mr. Gowin eventually made 50 more of these indexes of moths. Many subjects in the portraits are uncommon, and at least one is so rarely seen that it only existed as a painting in a museum drawer.

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And in that way, you can create your own stories about the moths on each page, and allow it to develop and evolve as you turn to the next.

Q.22
All of the following are false, except:

1 ○ moths are afraid of the darkness.

2 ○ all moths are important pollinators and destructive pests.

3 ○ Gowin's photographs portrayed the effects of human life on the planet earth.

4 ○ Mariposas Nocturnas: Moths of Central and South America, A Study in Beauty and Diversity is the only book written by Gowin.

Solution:
Correct Answer : 3
Genre: Book Review / Abstract
Word Count# 533
Option 1 – It is clearly false. The author says that 'moths belong to the night.'
Option 2 – The author says that the large moths are destructive pets. So, it is false. The author doesn't say all moths are pollinators.
Option 3 - Refer to-"His photography remained focused on other subjects, ranging from family to the assorted effects of human activity on the planet." This makes option 3, the correct answer.
Option 4 – This may or may not be true. It says 'only book'. We can't determine its veracity from the passage.

FeedBack

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Mr. Gowin eventually made 50 more of these indexes of moths. Many subjects in the portraits are uncommon, and at least one is so rarely seen that it only existed as a painting in a museum drawer.

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And in that way, you can create your own stories about the moths on each page, and allow it to develop and evolve as you turn to the next.

Q.23
Which of the following makes Mr. Gowin's moths worth appreciating?

---

1 ○ **They form a link between human and other species.**

---

2 ○ **They project a sense of beauty and bridge the gap between human and moths.**

---

3 ○ **They understand human emotions and increases human curiosity thereby forming a link with the humans.**

---

4 ○ **They have given Gowen a platform to showcase his photography talent.**

Solution:
Correct Answer : 2
Genre: Book Review / Abstract
Word Count# 533
Refer to-"They also present an exchange of beauty, a childlike curiosity and an appreciation for the hidden ties between humans and moths". Hence, 2 is the correct answer. This is a direct fact-based question. The other options are not even close.

FeedBack

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And in that way, you can create your own stories about the moths on each page, and allow it to develop and evolve as you turn to the next.

Q.24
Mr. Gown was better known as:

1 ○ a black and white photographer.

2 ○ a photographer who captured intimate portraits.

3 ○ the one who captured black and white intimate portraits.

4 ○ the photographer who took some black and white photos of Edith.

Solution:
Correct Answer : 4
Genre: Book Review / Abstract
Word Count# 533
Refer to-"It took Mr. Gowin, best known for the intimate, black and white images he made of his wife, Edith…" This makes option 4 the correct answer.
Option 1 – It is close but not complete. Option 4 is a more complete answer.
Option 2 – It is distorted. We can't say that he was known for taking 'intimate portraits' in general.
Option 3 – It is distorted. Refer to the explanation for option 2.

FeedBack

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Q.25
Which of the following is definitely not true according to the passage?

1 ○ Moths are important pollinators, always conducive to creation.

2 ○ Moths like bats are creatures of the night.

3 ○ Gowin's moths show how life is uncertain.

4 ○ Gowin went to Ecuador through a friend.

Solution:
Correct Answer : 1
Genre: Book Review / Abstract
Word Count# 533

Bookmark

Answer key/Solution

Option 1 – It is wrong. In the passage it is stated that, 'They are important pollinators and destructive pests.' So, we can't say that 'they are always conducive to creation'.
Option 2 – This looks incorrect as 'bats' are not mentioned in the passage. However, we can't call it 'definitely not true'.
Option 3 - Refer to the lines, "Alive, in color and against assorted backdrops from art history, Mr. Gowin's moths portray an acceptance of uncertainty in scientific discovery, the creative process and life more generally." So, this option is true.
Option 4 – Refer to the lines, "He accepted a friend's invitation to Ecuador, hoping to learn about ecology and finally study insects, particularly moths." So, this option is true.

FeedBack

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Q.26
Why did Gowin want to go to Ecuador?

1 ○ To become closer to Nature and find inspiration

2 ○ To develop a new way to shoot insect which he earlier found to be lifeless

3 ○ To find an escape from a tragic landscape

4 ○ To spread awareness regarding moths by capturing their diversity

Solution:
Correct Answer : 3
Genre: Book Review / Abstract
Word Count# 533
Refer to the lines, "In 1997, Mr. Gowin began shooting a series of aerial photographs of the Nevada Test Site, where the United States government detonated more than 1,000 nuclear bombs from 1951 to 1992. Before long, Mr. Gowin welcomed a change from a landscape he found tragic. He accepted a friend's invitation to Ecuador, hoping to learn about ecology and finally study insects, particularly moths." Option 3 is the clear answer. The other options are not even close.

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Q.27
The passage is most likely taken from a/an:

1 ○ book on photography.

2 ○ science journal.

3 ○ newspaper column.

4 ○ exhibition manual.

Solution:

Correct Answer : 3

Genre: Book Review / Abstract

Word Count# 533

The source of a passage is determined by the language and the theme of the latter.

Option 1 – A book on photography will contain technical jargons related to the subject. It will also not focus on the photographer and his background.

Option 2 – A science journal will not discuss a person's background story.

Option 3 – A newspaper column can run a story on an individual and his book with emphasis on the back story of the book. So, this is the best choice.

Option 4 – A manual uses prescriptive language. So, this is irrelevant.

FeedBack

Q.28

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

1. Plagiarism is generally regarded as the most egregious form of academic misconduct, and those who crib others' words can get expelled.

2. Set aside the awkwardness of being accused of plagiarism in a speech about values.

3. Let's focus on one simple fact: plagiarizing is lying.

4. As a writing teacher at Boston University I can usually detect plagiarism.

5. When you read someone's writing week after week, sometimes all it takes is a suspiciously elegant turn of phrase or a sophisticated syntactical structure to raise a red flag.

Solution:

Correct Answer : 45123

The entire paragraph is in a first person narrative. So, sentence 4 is the best opening sentence. However, the trick to solving this question lies in our ability to identify mandatory pairs.

3 has to have a sentence before it. 2 and 3 follow the same kind of tone. So, 23 is a pair.

5 explains the 'ability of the teacher' mentioned in 4. So, 45 is a pair.

1 is a kind of conclusion about 4 and 5. It further expands the topic under discussion.

2 can't open the paragraph due to its slightly narrower scope.

So, 45123 is the correct sequence.

FeedBack

Directions for questions (29 to 34): The passage below is accompanied by a set of six questions. Choose the best answer to each question.

One thing that is not wrong is the Refugee Convention itself. Its definition ("a well founded fear of being persecuted" for discriminatory reasons) has proved wonderfully flexible, identifying new groups of fundamentally disfranchised persons unable to benefit from human rights protection in their own countries. At least as important, its catalogue of refugee-specific rights remains as valuable today as ever. The underlying theory of the Refugee Convention is emphatically not the creation of dependency by hand-outs. It guarantees the social and economic rights that refugees need to be able to get back on their feet after being forced away from their own national community (e.g., to access education, to seek work, and to start businesses).

It was patently obvious to the States that drafted the refugee treaty that refugees could not begin to look after themselves, much less to contribute to the well-being of their host communities, if they were caged up. For this reason, as soon as a refugee has submitted herself to the jurisdiction of the host country, satisfied authorities of her identity, and addressed any security-related concerns, the Refugee Convention requires that she be afforded not only freedom of movement, but the right to choose her place of residence – a right that continues until and unless the substance of her refugee claim is negatively determined. Respecting this legal guarantee of refugee mobility can dramatically change the policy outcomes of admitting refugees; indeed, a recent study shows that those countries that do facilitate refugee freedom of movement are often economically advantaged by the presence of refugees.

Why, then, do States not routinely liberate the productive potential of refugees? Part of the reason is that setting up refugee camps is an easy one size fits all answer that and many of its many humanitarian partners. When there is a political imperative to act, the establishment of camps is a concrete and visible sign of engagement. Indeed, even as the regional States receiving the overwhelming majority of Syrian refugees were largely ignored by the rest of the world, international donors stepped forward to finance the building and operation of refugee camps.

Most fundamentally, though, the detention of refugees is a strategy that appeals to States that would prefer to avoid their international duty to protect refugees. While not willing to accept the political cost of formally renouncing the treaty, States with the economic and practical wherewithal have for many years sought to ensure that refugees never arrive at their jurisdiction, at which point duties in here. The strategy of deterrence has, however, come under increasingly successful challenge, including before the European Court of Human Rights. Poorer States, as well as those with especially porous borders, have of course rarely been able to deter refugee arrivals at all. For States in either situation, restricting the mobility of refugees by detention or similar practices (often accompanied by other harsh treatment post-arrival) is seen as a second-best means for a State to send a signal that they are not open to the arrival of refugees.

Q.29
All the statements given below lay down the functions which the Refugee Convention serves EXCEPT:

1 ○ It lays down the duties of refugees.

2 ○ It lays down the rights of refugees.

3 ○ It lays down the modality to rehabilitate the refugees.

4 ○ It lays down the definition of refugees.

Solution:
Correct Answer : 1
Genre: Politics / International Law / Human Rights Studies
Word Count# 502
According to the passage the refugee convention does not contain the duties
of the refugees; therefore Option 1 is the correct answer.
Option 2, 3 and 4 are incorrect as the refugee convention contains the definition, rights and modality of
rehabilitation of the refugees.

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Q.30

Which of the following rights to refugees has been cited as a potential economic benefit for the host country?

1 ○ **Right to seek education**

2 ○ **Right to freedom of movement**

3 ○ **Right to freedom of work**

4 ○ **Right to reside**

Solution:

Correct Answer : 2

Genre: Politics / International Law / Human Rights Studies

Word Count# 502

Refer to the line, "indeed, a recent study shows that those countries that do facilitate refugee freedom of movement are often economically advantaged by the presence of refugees." So, according to the passage the host countries which provide refugees with the right to freedom of movement gain economic advantages by their presence, hence Option 2 is the correct answer. Option 1, 3 and 4 are incorrect as Right to seek education, work and a place to reside are guaranteed by the convention but they may not play a role in bringing economic advantage to the host nation.

🔖 **Bookmark**

🔍 Answer key/Solution

FeedBack

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Q.31
As per the author, why do host countries set up refugee camps in their territories?

1 ○ It liberates the productive potential of refugees.

2 ○ It provides the right to freedom of movement to refugees.

3 ○ It provides a visible proof of their attempt to help the nation with refugee crisis.

4 ○ It allures international donors to contribute for the welfare of refugees.

Solution:

Correct Answer : 3

Genre: Politics / International Law / Human Rights Studies

Word Count# 502

According to the passage the host nations set up refugee camps as it portrays that the host nation has engaged with the problem of refugees. Refer to the line, "When there is a political imperative to act, the establishment of camps is a concrete and visible sign of engagement." Hence Option 3 is the correct option.

Option 1 and 2 are incorrect as liberation of the productive potential of refugees and right to freedom of movement do not serve as reasons for the host countries to set up refugee camps.

Option 4 is incorrect as it is a distorted option.

Directions for questions (29 to 34): The passage below is accompanied by a set of six questions. Choose the best answer to each question.

One thing that is not wrong is the Refugee Convention itself. Its definition ("a well founded fear of being persecuted" for discriminatory reasons) has proved wonderfully flexible, identifying new groups of fundamentally disfranchised persons unable to benefit from human rights protection in their own countries. At least as important, its catalogue of refugee-specific rights remains as valuable today as ever. The underlying theory of the Refugee Convention is emphatically not the creation of dependency by hand-outs. It guarantees the social and economic rights that refugees need to be able to get back on their feet after being forced away from their own national community (e.g., to access education, to seek work, and to start businesses).

It was patently obvious to the States that drafted the refugee treaty that refugees could not begin to look after themselves, much less to contribute to the well-being of their host communities, if they were caged up. For this reason, as soon as a refugee has submitted herself to the jurisdiction of the host country, satisfied authorities of her identity, and addressed any security-related concerns, the Refugee Convention requires that she be afforded not only freedom of movement, but the right to choose her place of residence – a right that continues until and unless the substance of her refugee claim is negatively determined. Respecting this legal guarantee of refugee mobility can dramatically change the policy outcomes of admitting refugees; indeed, a recent study shows that those countries that do facilitate refugee freedom of movement are often economically advantaged by the presence of refugees.

Why, then, do States not routinely liberate the productive potential of refugees? Part of the reason is that setting up refugee camps is an easy one size fits all answer that and many of its many humanitarian partners. When there is a political imperative to act, the establishment of camps is a concrete and visible sign of engagement. Indeed, even as the regional States receiving the overwhelming majority of Syrian refugees were largely ignored by the rest of the world, international donors stepped forward to finance the building and operation of refugee camps.

Most fundamentally, though, the detention of refugees is a strategy that appeals to States that would prefer to avoid their international duty to protect refugees. While not willing to accept the political cost of formally renouncing the treaty, States with the economic and practical wherewithal have for many years sought to ensure that refugees never arrive at their jurisdiction, at which point duties in here. The strategy of deterrence has, however, come under increasingly successful challenge, including before the European Court of Human Rights. Poorer States, as well as those with especially porous borders, have of course rarely been able to deter refugee arrivals at all. For States in either situation, restricting the mobility of refugees by detention or similar practices (often accompanied by other harsh treatment post-arrival) is seen as a second-best means for a State to send a signal that they are not open to the arrival of refugees.

Q.32
Which of the following have rarely been able to deter refugee arrivals?

1 ○ **Developed states**

2 ○ **Developing states**

3 ○ **States that are party to the Refugee Convention**

4 ○ **States with porous borders**

Solution:

Correct Answer : 4

Genre: Politics / International Law / Human Rights Studies

Word Count# 502

According to the passage states with porous borders have rarely been able to deter refugee arrivals. Refer to the lines, "The strategy of deterrence has, however, come under increasingly successful challenge, including before the European Court of Human Rights. Poorer States, as well as those with especially porous borders, have of course rarely been able to deter refugee arrivals at all." Hence Option 4 is the correct answer.

Options 1 and 2 are distorted options.

Option 3 is incorrect as majority states are part of the refugee convention including those which are neither poor nor have a porous border and hence all states party to Refugee Convention do not fall within the ambit of the problem posed in the question.

FeedBack

One thing that is not wrong is the Refugee Convention itself. Its definition ("a well founded fear of being persecuted" for discriminatory reasons) has proved wonderfully flexible, identifying new groups of fundamentally disfranchised persons unable to benefit from human rights protection in their own countries. At least as important, its catalogue of refugee-specific rights remains as valuable today as ever. The underlying theory of the Refugee Convention is emphatically not the creation of dependency by hand-outs. It guarantees the social and economic rights that refugees need to be able to get back on their feet after being forced away from their own national community (e.g., to access education, to seek work, and to start businesses).

It was patently obvious to the States that drafted the refugee treaty that refugees could not begin to look after themselves, much less to contribute to the well-being of their host communities, if they were caged up. For this reason, as soon as a refugee has submitted herself to the jurisdiction of the host country, satisfied authorities of her identity, and addressed any security-related concerns, the Refugee Convention requires that she be afforded not only freedom of movement, but the right to choose her place of residence – a right that continues until and unless the substance of her refugee claim is negatively determined. Respecting this legal guarantee of refugee mobility can dramatically change the policy outcomes of admitting refugees; indeed, a recent study shows that those countries that do facilitate refugee freedom of movement are often economically advantaged by the presence of refugees.

Why, then, do States not routinely liberate the productive potential of refugees? Part of the reason is that setting up refugee camps is an easy one size fits all answer that and many of its many humanitarian partners. When there is a political imperative to act, the establishment of camps is a concrete and visible sign of engagement. Indeed, even as the regional States receiving the overwhelming majority of Syrian refugees were largely ignored by the rest of the world, international donors stepped forward to finance the building and operation of refugee camps.

Most fundamentally, though, the detention of refugees is a strategy that appeals to States that would prefer to avoid their international duty to protect refugees. While not willing to accept the political cost of formally renouncing the treaty, States with the economic and practical wherewithal have for many years sought to ensure that refugees never arrive at their jurisdiction, at which point duties in here. The strategy of deterrence has, however, come under increasingly successful challenge, including before the European Court of Human Rights. Poorer States, as well as those with especially porous borders, have of course rarely been able to deter refugee arrivals at all. For States in either situation, restricting the mobility of refugees by detention or similar practices (often accompanied by other harsh treatment post-arrival) is seen as a second-best means for a State to send a signal that they are not open to the arrival of refugees.

Q.33
The writer intends to reveal which of the following from the answer to 'Why, then, do States not routinely liberate the productive potential of refugees?'

1 ○ The inefficiency of the Refugee Convention to solve their problem

2 ○ The intention of host nations to show the world that they are unwelcoming towards the refugees

3 ○ The hidden agenda of states to portray themselves empathic to refugee crisis without taking any efficient step

4 ○ The loopholes in the rights guaranteed to the refugees

Solution:

Correct Answer : 3

Genre: Politics / International Law / Human Rights Studies

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Option 3 is the correct answer as the writer aims to portray that the setting up of camps by host nations is a way to show engagement on their part with the problem of refugees without any actual empathy on their part.

Option 1 is incorrect as the inefficacies of the Convention is not being discussed by the writer's answer.

Option 2 is incorrect as the unwelcoming attitude of the host nation is not shown by setting up of camps rather by their post arrival treatment as discussed in last paragraph.

Option 4 is redundant as the topic is not discussed in the passage.

FeedBack

Directions for questions (29 to 34): The passage below is accompanied by a set of six questions. Choose the best answer to each question.

One thing that is not wrong is the Refugee Convention itself. Its definition ("a well founded fear of being persecuted" for discriminatory reasons) has proved wonderfully flexible, identifying new groups of fundamentally disfranchised persons unable to benefit from human rights protection in their own countries. At least as important, its catalogue of refugee-specific rights remains as valuable today as ever. The underlying theory of the Refugee Convention is emphatically not the creation of dependency by hand-outs. It guarantees the social and economic rights that refugees need to be able to get back on their feet after being forced away from their own national community (e.g., to access education, to seek work, and to start businesses).

It was patently obvious to the States that drafted the refugee treaty that refugees could not begin to look after themselves, much less to contribute to the well-being of their host communities, if they were caged up. For this reason, as soon as a refugee has submitted herself to the jurisdiction of the host country, satisfied authorities of her identity, and addressed any security-related concerns, the Refugee Convention requires that she be afforded not only freedom of movement, but the right to choose her place of residence – a right that continues until and unless the substance of her refugee claim is negatively determined. Respecting this legal guarantee of refugee mobility can dramatically change the policy outcomes of admitting refugees; indeed, a recent study shows that those countries that do facilitate refugee freedom of movement are often economically advantaged by the presence of refugees.

Why, then, do States not routinely liberate the productive potential of refugees? Part of the reason is that setting up refugee camps is an easy one size fits all answer that and many of its many humanitarian partners. When there is a political imperative to act, the establishment of camps is a concrete and visible sign of engagement. Indeed, even as the regional States receiving the overwhelming majority of Syrian refugees were largely ignored by the rest of the world, international donors stepped forward to finance the building and operation of refugee camps.

Most fundamentally, though, the detention of refugees is a strategy that appeals to States that would prefer to avoid their international duty to protect refugees. While not willing to accept the political cost of formally renouncing the treaty, States with the economic and practical wherewithal have for many years sought to ensure that refugees never arrive at their jurisdiction, at which point duties in here. The strategy of deterrence has, however, come under increasingly successful challenge, including before the European Court of Human Rights. Poorer States, as well as those with especially porous borders, have of course rarely been able to deter refugee arrivals at all. For States in either situation, restricting the mobility of refugees by detention or similar practices (often accompanied by other harsh treatment post-arrival) is seen as a second-best means for a State to send a signal that they are not open to the arrival of refugees.

Q.34
Which of the following will be the most suitable title to the passage?

1 ○ Refugee Convention – A losing battle

2 ○ Refugee crisis and the host nations

3 ○ Rights and duties of refugees

4 ○ The global refugee crisis

Solution:

Correct Answer : 2

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The main idea of the passage is to talk about the refugee convention and its salient features with respect to the host nations.

Option 1 – The tone is negative. But the author uses a neutral and analytical tone in the passage. So, this is incorrect.

Option 2 – This is the correct choice.

Option 3 – The focus of the passage is not on the 'rights or duties' of refugees.

Option 4 – This is a very broad option.

FeedBack

Sec 2

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

Three friends Amit, Bhaskar and Chimpu are playing a game. Initially they have some sticks with them. Now first Amit will pick a number of sticks which is one of first 10 natural numbers but not 2. Then second Bhaskar will pick a number of sticks which is one of first 3 non-prime numbers. Then third Chimpu will pick a number of sticks which is one of the first 4 non composite numbers. Then Amit, Bhaskar and Chimpu will keep picking number of sticks as mentioned above in the same order until there is no stick left. If Amit picks the last stick he will win the game and will get 100 Rs. whereas if anyone of Bhaskar or Chimpu picks the last stick they both would be declared winner and will get 50 Rs. each. Assume all three of them play intelligently and want to win money.

Q.35

If there are 100 sticks in the beginning, then what can be the maximum number of sticks Amit will pick at the beginning to ensure a win?

Solution:

Correct Answer : 4

As per the conditions given, the number of sticks that each of them can pick in a chance can be as:

Amit: 1, 3, 4, 5, 6, 7, 8, 9, 10

Bhaskar: 1, 4, 6

Chimpu: 1, 2, 3, 5

So after every turn of Amit, the total number of sticks that Bhaskar and Chimpu can pick before Amit's next turn is 2, 3, 4, 5, 6, 7, 8, 9 or 11.

If we observe these numbers carefully, we can see that for any combination of number of sticks picked by Bhaskar and Chimpu, Amit can pick a number such that the sum becomes 12. So, whatever Bhaskar and Chimpu pick together, Amit can always pick the 12th stick after that.

Hence if there are 12 sticks or a multiple of 12 sticks remaining and it's Bhaskar's turn, then Amit will surely win. Hence, if Amit wants to win, he will either leave a multiple of 12 sticks after his turn.

Whereas, if there are 12 sticks remaining in the end and if it is Amit's turn, Bhaskar and Chimpu are going to win as they will always be able to make 12 whatever Amit picks.

If there are 100 sticks in the beginning, Amit will pick 4 sticks such that the remaining number of sticks is 96 (i.e, 12k)

FeedBack

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

Three friends Amit, Bhaskar and Chimpu are playing a game. Initially they have some sticks with them. Now first Amit will pick a number of sticks which is one of first 10 natural numbers but not 2. Then second Bhaskar will pick a number of sticks which is one of first 3 non-prime numbers. Then third Chimpu will pick a number of sticks which is one of the first 4 non composite numbers. Then Amit, Bhaskar and Chimpu will keep picking number of sticks as mentioned above in the same order until there is no stick left. If Amit picks the last stick he will win the game and will get 100 Rs. whereas if anyone of Bhaskar or Chimpu picks the last stick they both would be declared winner and will get 50 Rs. each. Assume all three of them play intelligently and want to win money.

Q.36

If there are 'n' sticks in the beginning, then for how many values of n, where 50 < n < 100, Amit will surely win?

Solution:

Correct Answer : 41

As per the conditions given, the number of sticks that each of them can pick in a chance can be as:

Amit: 1, 3, 4, 5, 6, 7, 8, 9, 10

Bhaskar: 1, 4, 6

Chimpu: 1, 2, 3, 5

So after every turn of Amit, the total number of sticks that Bhaskar and Chimpu can pick before Amit's next turn is 2, 3, 4, 5, 6, 7, 8, 9 or 11.

If we observe these numbers carefully, we can see that for any combination of number of sticks picked by Bhaskar and Chimpu, Amit can pick a number such that the sum becomes 12. So, whatever Bhaskar and Chimpu pick together, Amit can always pick the 12th stick after that.

Hence if there are 12 sticks or a multiple of 12 sticks remaining and it's Bhaskar's turn, then Amit will surely win. Hence, if Amit wants to win, he will either leave a multiple of 12 sticks after his turn.

Whereas, if there are 12 sticks remaining in the end and if it is Amit's turn, Bhaskar and Chimpu are going to win as they will always be able to make 12 whatever Amit picks.

Amit will lose whenever the number of sticks already is a multiple of 12 as in that case he won't be able to leave a multiple of 12 and he will lose whenever the number of sticks are in a multiple of 12k+2, as Amit cannot pick 2 and so again he won't be able to leave a multiple of 12. So he will lose when n = 60,62, 72,74, 84, 86, 96 or 98. Hence he will win for 49 − 8 = 41 values of n.

FeedBack

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

Three friends Amit, Bhaskar and Chimpu are playing a game. Initially they have some sticks with them. Now first Amit will pick a number of sticks which is one of first 10 natural numbers but not 2. Then second Bhaskar will pick a number of sticks which is one of first 3 non-prime numbers. Then third Chimpu will pick a number of sticks which is one of the first 4 non composite numbers. Then Amit, Bhaskar and Chimpu will keep picking number of sticks as mentioned above in the same order until there is no stick left. If Amit picks the last stick he will win the game and will get 100 Rs. whereas if anyone of Bhaskar or Chimpu picks the last stick they both would be declared winner and will get 50 Rs. each. Assume all three of them play intelligently and want to win money.

Q.37

If there are 60 sticks in the beginning and Amit picks 5 sticks in the first move followed by Bhaskar who picks 4 then how many sticks should Chimpu pick to ensure a loss for Amit?

1 ○ **1**

2 ○ **3**

3 ○ **5**

4 ○ **Cannot be determined**

Solution:

Correct Answer : 2

As per the conditions given, the number of sticks that each of them can pick in a chance can be as:

Amit: 1, 3, 4, 5, 6, 7, 8, 9, 10

Bhaskar: 1, 4, 6

Chimpu: 1, 2, 3, 5

So after every turn of Amit, the total number of sticks that Bhaskar and Chimpu can pick before Amit's next turn is 2, 3, 4, 5, 6, 7, 8, 9 or 11.

If we observe these numbers carefully, we can see that for any combination of number of sticks picked by Bhaskar and Chimpu, Amit can pick a number such that the sum becomes 12. So, whatever Bhaskar and Chimpu pick together, Amit can always pick the 12th stick after that.

Hence if there are 12 sticks or a multiple of 12 sticks remaining and it's Bhaskar's turn, then Amit will surely win. Hence, if Amit wants to win, he will leave a multiple of 12 sticks after his turn.

Whereas, if there are 12 sticks remaining in the end and if it is Amit's turn, Bhaskar and Chimpu are going to win as they will always be able to make 12 whatever Amit picks.

Chimpu and Bhaskar together will always make a total of 12 so he must pick 3 sticks such that the remaining sticks are a multiple of 12 and hence Amit will lose.

FeedBack

Three friends Amit, Bhaskar and Chimpu are playing a game. Initially they have some sticks with them. Now first Amit will pick a number of sticks which is one of first 10 natural numbers but not 2. Then second Bhaskar will pick a number of sticks which is one of first 3 non-prime numbers. Then third Chimpu will pick a number of sticks which is one of the first 4 non composite numbers. Then Amit, Bhaskar and Chimpu will keep picking number of sticks as mentioned above in the same order until there is no stick left. If Amit picks the last stick he will win the game and will get 100 Rs. whereas if anyone of Bhaskar or Chimpu picks the last stick they both would be declared winner and will get 50 Rs. each. Assume all three of them play intelligently and want to win money.

Q.38

If 20 sticks are remaining in the end and it is Chimpu's turn, then how many sticks should he pick to win?

1 ⚪ **2**

2 ⚪ **3**

3 ⚪ **5**

4 ⚪ **he can never win**

Solution:

Correct Answer : 4

As per the conditions given, the number of sticks that each of them can pick in a chance can be as:

Amit: 1, 3, 4, 5, 6, 7, 8, 9, 10

Bhaskar: 1, 4, 6

Chimpu: 1, 2, 3, 5

So after every turn of Amit, the total number of sticks that Bhaskar and Chimpu can pick before Amit's next turn is 2, 3, 4, 5, 6, 7, 8, 9 or 11.

If we observe these numbers carefully, we can see that for any combination of number of sticks picked by Bhaskar and Chimpu, Amit can pick a number such that the sum becomes 12. So, whatever Bhaskar and Chimpu pick together, Amit can always pick the 12th stick after that.

Hence if there are 12 sticks or a multiple of 12 sticks remaining and it's Bhaskar's turn, then Amit will surely win. Hence, if Amit wants to win, he will leave a multiple of 12 sticks after his turn.

Whereas, if there are 12 sticks remaining in the end and if it is Amit's turn, Bhaskar and Chimpu are going to win as they will always be able to make 12 whatever Amit picks.

If there are 20 sticks in the end and it is Chimpu's turn then he cannot win as whatever he picks, Amit will pick some sticks such that the remaining sticks are 12.

FeedBack

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

Four friends namely Sandeep, Ravi, Laxman and Vikas, each of whom has a different coloured car from among black, white, violet and red, not necessarily in the same order, belong to three categories of persons (at least one from each category) – truth teller, alternator and liar. A truth teller always speaks the truth; an alternator makes a true statement followed by a false one or vice versa; and a liar always speaks a lie. It is known that out of the four, two are alternators. When these four persons were enquired regarding the colors of their cars, each of them made two statements, the details of which are as follows:

Laxman : The color of my car is either black or white. The black colored car is either Sandeep's or mine.

Vikas : The color of my car is neither black nor white. The red colored car is neither Ravi's nor mine.

Sandeep : The color of Vikas's car is red. Ravi is a truth teller.

Ravi : The color of my car is red. The color of Sandeep's car is not violet.

Q.39

Who among the following cannot be a truth teller?

1 ○ Vikas

2 ○ Sandeep

3 ○ Ravi

4 ○ Laxman

Solution:

Correct Answer : 2

Sandeep cannot be a truth teller, in that case, Vikas and Ravi both will have Red car, which is not possible. Also, if Laxman's 2nd statement is true then, 1st will also be true.

If Sandeep's first statement is false and 2nd is true then, other conditions will be contradictory. If Sandeep's 1st statement is true and 2nd is false, then Ravi's 1st statement and Vikas's 2nd statement will be false. If Ravi's 2nd statement is true, then Vikas has to be a liar, in which case he will have either Black or White car, which is false. So Ravi will be a liar if Sandeep is an alternator. So Sandeep will have Violet car, and from Vikas's 1st statement he will have Red car. Laxman will be the truth teller and hence he will have a Black car, from his 2nd statement.

Sandeep can be a liar. If Ravi's 1st statement is truth then other conditions will be contradictory. So Ravi's 1st statement will be false and 2nd will be true. Then Vikas's 2nd statement will be true. Now two cases are possible in this as well –
i)   If Vikas's 1st statement is true then he will have Violet car. Then Laxman's 2nd statement will be false and 1st true, and hence he will have a White car.
ii)   If Vikas's 1st statement is false then Laxman will be a truth teller. Laxman will have a Black car and Vikas will have a White car. Sandeep will have Red and Ravi will have Violet. Sandeep cannot be a truth teller, in that case, Vikas and Ravi both will have Red car, which is not possible. Also if Laxman's 2nd statement is true then 1st will also be true.

	Case I	Case II	Case III	Case IV	Case V
Laxman	TT, Black	Alt, White	TT, Black	Alt, Violet	Alt, Red
Vikas	Alt, Red	TT, Violet	Alt, White	L, White	TT, Violet
Sandeep	Alt, Violet	L, Red	L, Red	Alt, Black	L, Black
Ravi	L, White	Alt, Black	Alt, Violet	TT, Red	Alt, White

(Note: TT is truth teller, Alt is alternator, L is liar)

Sandeep cannot be truth teller.

FeedBack

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

Four friends namely Sandeep, Ravi, Laxman and Vikas, each of whom has a different coloured car from among black, white, violet and red, not necessarily in the same order, belong to three categories of persons (at least one from each category) – truth teller, alternator and liar. A truth teller always speaks the truth; an alternator makes a true statement followed by a false one or vice versa; and a liar always speaks a lie. It is known that out of the four, two are alternators. When these four persons were enquired regarding the colors of their cars, each of them made two statements, the details of which are as follows:

Laxman : The color of my car is either black or white. The black colored car is either Sandeep's or mine.
Vikas : The color of my car is neither black nor white. The red colored car is neither Ravi's nor mine.
Sandeep : The color of Vikas's car is red. Ravi is a truth teller.
Ravi : The color of my car is red. The color of Sandeep's car is not violet.

Q.40
If the color of Vikas's car is white, then the color of whose car is violet?

1 ○ **Ravi**

2 ○ **Laxman**

3 ○ **Sandeep**

4 ○ **Cannot be determined**

Solution:

Correct Answer : 4

Sandeep cannot be a truth teller, in that case, Vikas and Ravi both will have Red car, which is not possible. Also, if Laxman's 2nd statement is true then, 1st will also be true.

If Sandeep's first statement is false and 2nd is true then, other conditions will be contradictory. If Sandeep's 1st statement is true and 2nd is false, then Ravi's 1st statement and Vikas's 2nd statement will be false. If Ravi's 2nd statement is true, then Vikas has to be a liar, in which case he will have either Black or White car, which is false. So Ravi will be a liar if Sandeep is an alternator. So Sandeep will have Violet car, and from Vikas's 1st statement he will have Red car. Laxman will be the truth teller and hence he will have a Black car, from his 2nd statement.

Sandeep can be a liar. If Ravi's 1st statement is truth then other conditions will be contradictory. So Ravi's 1st statement will be false and 2nd will be true. Then Vikas's 2nd statement will be true. Now two cases are possible in this as well -
i)   If Vikas's 1st statement is true then he will have Violet car. Then Laxman's 2nd statement will be false and 1st true, and hence he will have a White car.
ii)   If Vikas's 1st statement is false then Laxman will be a truth teller. Laxman will have a Black car and Vikas will have a White car. Sandeep will have Red and Ravi will have Violet. Sandeep cannot be a truth teller, in that case, Vikas and Ravi both will have Red car, which is not possible. Also if Laxman's 2nd statement is true then 1st will also be true.

	Case I	Case II	Case III	Case IV	Case V
Laxman	TT, Black	Alt, White	TT, Black	Alt, Violet	Alt, Red
Vikas	Alt, Red	TT, Violet	Alt, White	L, White	TT, Violet
Sandeep	Alt, Violet	L, Red	L, Red	Alt, Black	L, Black
Ravi	L, White	Alt, Black	Alt, Violet	TT, Red	Alt, White

(Note: TT is truth teller, Alt is alternator, L is liar)

If the colour of Vikas's car is white, then either Laxman's or Ravi's car is violet.

[FeedBack]

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

Four friends namely Sandeep, Ravi, Laxman and Vikas, each of whom has a different coloured car from among black, white, violet and red, not necessarily in the same order, belong to three categories of persons (at least one from each category) – truth teller, alternator and liar. A truth teller always speaks the truth; an alternator makes a true statement followed by a false one or vice versa; and a liar always speaks a lie. It is known that out of the four, two are alternators. When these four persons were enquired regarding the colors of their cars, each of them made two statements, the details of which are as follows:

Laxman : The color of my car is either black or white. The black colored car is either Sandeep's or mine.
Vikas : The color of my car is neither black nor white. The red colored car is neither Ravi's nor mine.
Sandeep : The color of Vikas's car is red. Ravi is a truth teller.
Ravi : The color of my car is red. The color of Sandeep's car is not violet.

Q.41
If the color of Laxman's car is black, then the color of whose car is red?

1 ○ **Vikas**

2 ○ **Ravi**

3 ○ **Sandeep**

4 ○ **Cannot be determined**

Solution:
Correct Answer : 4

Sandeep cannot be a truth teller, in that case, Vikas and Ravi both will have Red car, which is not possible. Also, if Laxman's 2nd statement is true then, 1st will also be true.

If Sandeep's first statement is false and 2nd is true then, other conditions will be contradictory. If Sandeep's 1st statement is true and 2nd is false, then Ravi's 1st statement and Vikas's 2nd statement will be false. If Ravi's 2nd statement is true, then Vikas has to be a liar, in which case he will have either Black or White car, which is false. So Ravi will be a liar if Sandeep is an alternator. So Sandeep will have Violet car, and from Vikas's 1st statement he will have Red car. Laxman will be the truth teller and hence he will have a Black car, from his 2nd statement.

Sandeep can be a liar. If Ravi's 1st statement is truth then other conditions will be contradictory. So Ravi's 1st statement will be false and 2nd will be true. Then Vikas's 2nd statement will be true. Now two cases are possible in this as well -

i)   If Vikas's 1st statement is true then he will have Violet car. Then Laxman's 2nd statement will be false and 1st true, and hence he will have a White car.

ii)   If Vikas's 1st statement is false then Laxman will be a truth teller. Laxman will have a Black car and Vikas will have a White car. Sandeep will have Red and Ravi will have Violet. Sandeep cannot be a truth teller, in that case, Vikas and Ravi both will have Red car, which is not possible. Also if Laxman's 2nd statement is true then 1st will also be true.

	Case I	Case II	Case III	Case IV	Case V
Laxman	TT, Black	Alt, White	TT, Black	Alt, Violet	Alt, Red
Vikas	Alt, Red	TT, Violet	Alt, White	L, White	TT, Violet
Sandeep	Alt, Violet	L, Red	L, Red	Alt, Black	L, Black
Ravi	L, White	Alt, Black	Alt, Violet	TT, Red	Alt, White

(**Note:** TT is truth teller, Alt is alternator, L is liar)

Case I and Case III, in both cases Laxman has black car. Red car can be with Vikas or Sandeep.

[FeedBack]

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

Four friends namely Sandeep, Ravi, Laxman and Vikas, each of whom has a different coloured car from among black, white, violet and red, not necessarily in the same order, belong to three categories of persons (at least one from each category) – truth teller, alternator and liar. A truth teller always speaks the truth; an alternator makes a true statement followed by a false one or vice versa; and a liar always speaks a lie. It is known that out of the four, two are alternators. When these four persons were enquired regarding the colors of their cars, each of them made two statements, the details of which are as follows:

Laxman : The color of my car is either black or white. The black colored car is either Sandeep's or mine.
Vikas : The color of my car is neither black nor white. The red colored car is neither Ravi's nor mine.
Sandeep : The color of Vikas's car is red. Ravi is a truth teller.
Ravi : The color of my car is red. The color of Sandeep's car is not violet.

  Q.42
Who among the following cannot be the liar?

1 ○ **Sandeep**

2 ○ **Vikas**

3 ○ **Ravi**

4 ○ **Laxman**

Solution:

Correct Answer : 4

Sandeep cannot be a truth teller, in that case, Vikas and Ravi both will have Red car, which is not possible. Also, if Laxman's 2nd statement is true then, 1st will also be true.

If Sandeep's first statement is false and 2nd is true then, other conditions will be contradictory. If Sandeep's 1st statement is true and 2nd is false, then Ravi's 1st statement and Vikas's 2nd statement will be false. If Ravi's 2nd statement is true, then Vikas has to be a liar, in which case he will have either Black or White car, which is false. So Ravi will be a liar if Sandeep is an alternator. So Sandeep will have Violet car, and from Vikas's 1st statement he will have Red car. Laxman will be the truth teller and hence he will have a Black car, from his 2nd statement.

Sandeep can be a liar. If Ravi's 1st statement is truth then other conditions will be contradictory. So Ravi's 1st statement will be false and 2nd will be true. Then Vikas's 2nd statement will be true. Now two cases are possible in this as well -
i)   If Vikas's 1st statement is true then he will have Violet car. Then Laxman's 2nd statement will be false and 1st true, and hence he will have a White car.
ii)   If Vikas's 1st statement is false then Laxman will be a truth teller. Laxman will have a Black car and Vikas will have a White car. Sandeep will have Red and Ravi will have Violet. Sandeep cannot be a truth teller, in that case, Vikas and Ravi both will have Red car, which is not possible. Also if Laxman's 2nd statement is true then 1st will also be true.

	Case I	Case II	Case III	Case IV	Case V
Laxman	TT, Black	Alt, White	TT, Black	Alt, Violet	Alt, Red
Vikas	Alt, Red	TT, Violet	Alt, White	L, White	TT, Violet
Sandeep	Alt, Violet	L, Red	L, Red	Alt, Black	L, Black
Ravi	L, White	Alt, Black	Alt, Violet	TT, Red	Alt, White

(**Note:** TT is truth teller, Alt is alternator, L is liar)

Laxman is not the liar in any of the case.

FeedBack

Directions for questions 43 to 46: Answer the questions on the basis of the information given below.
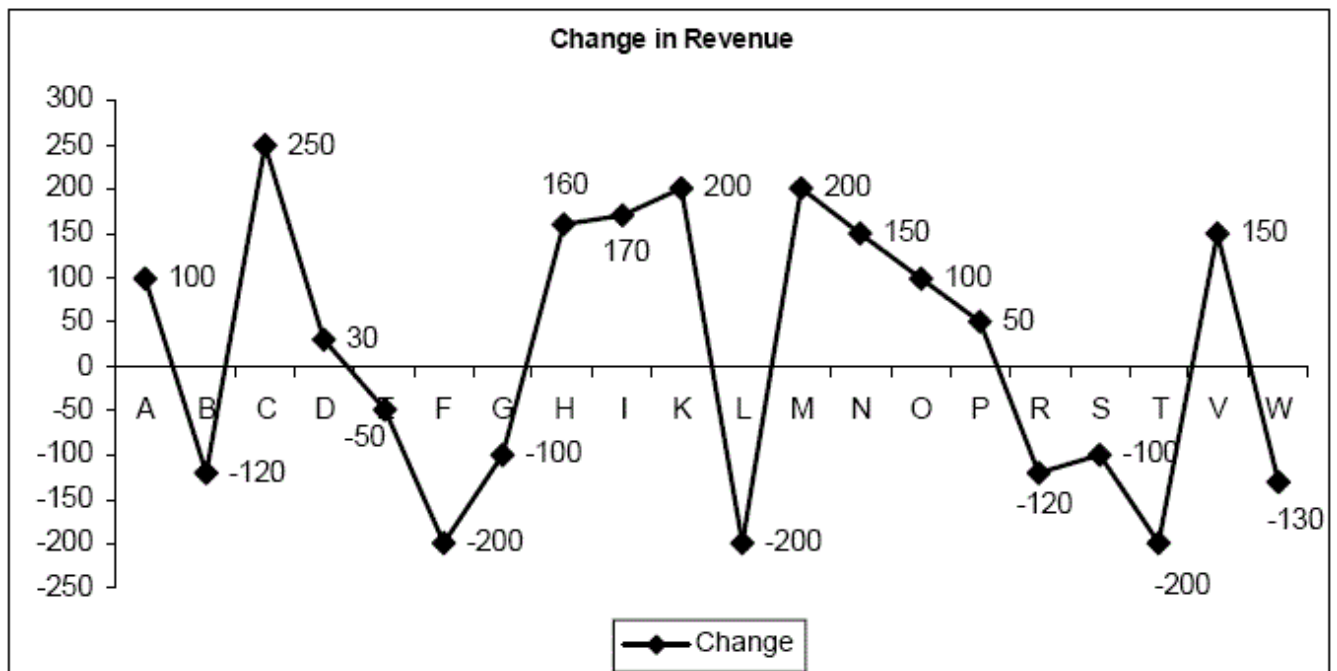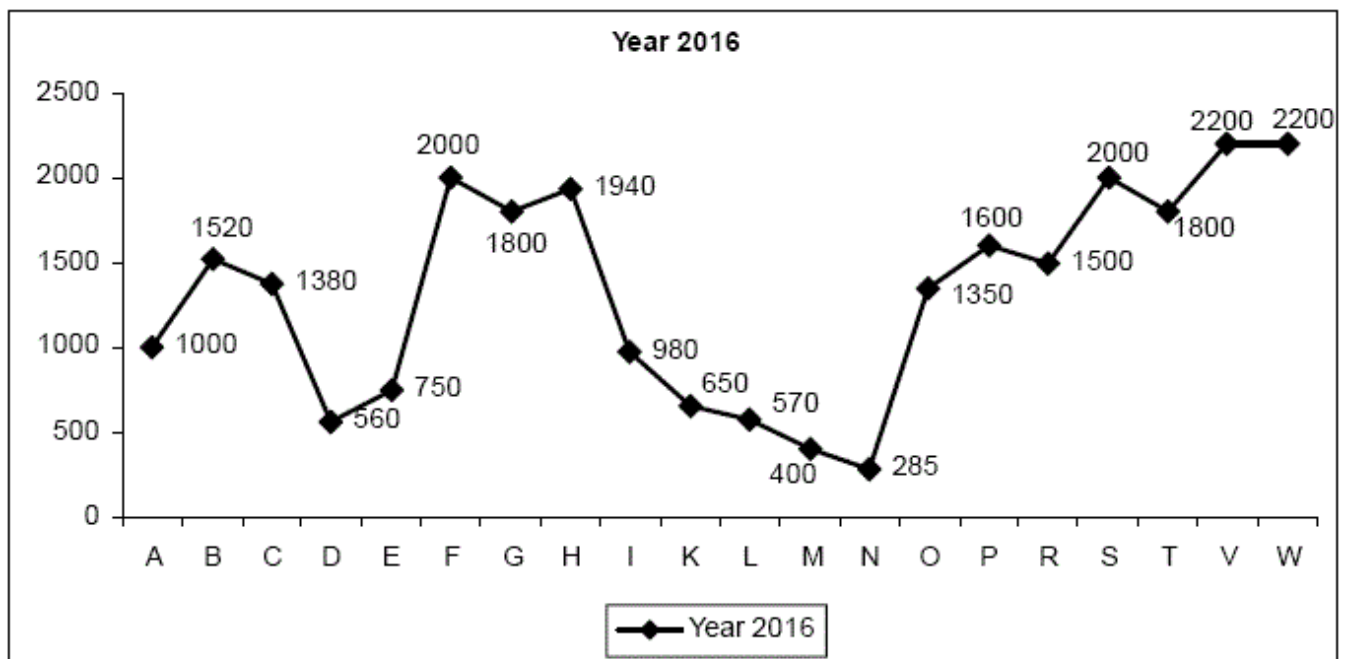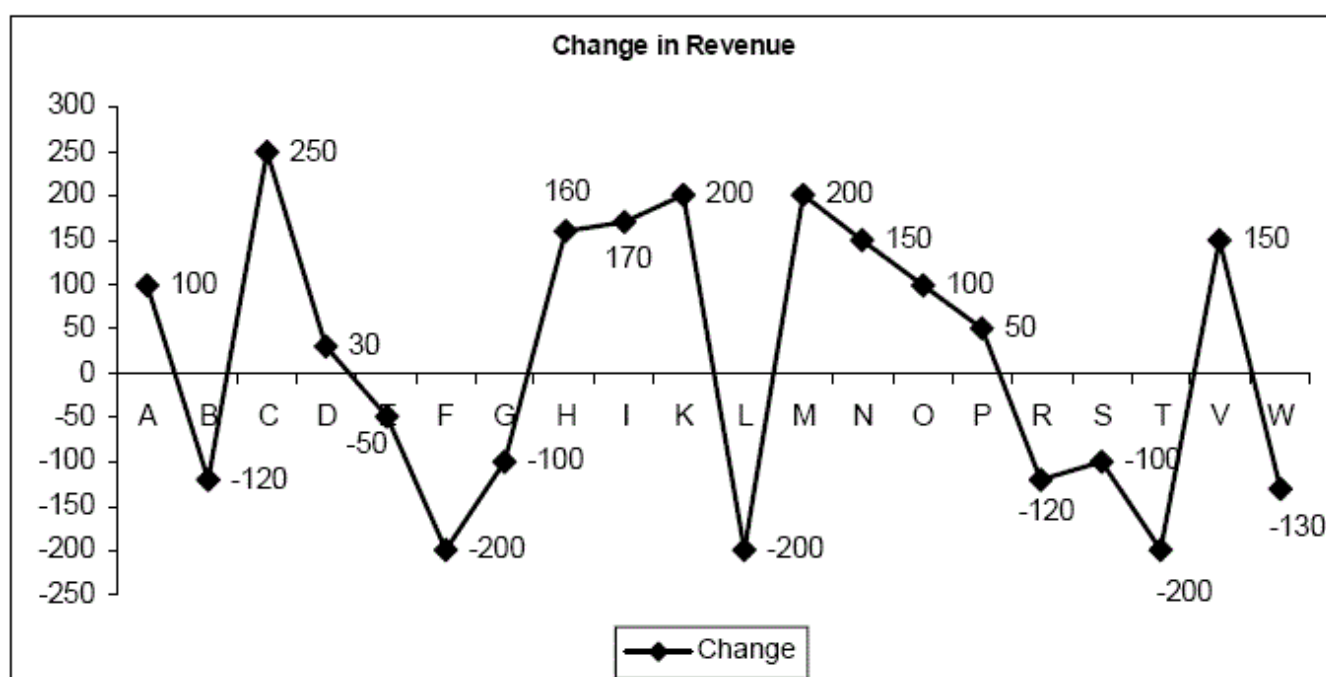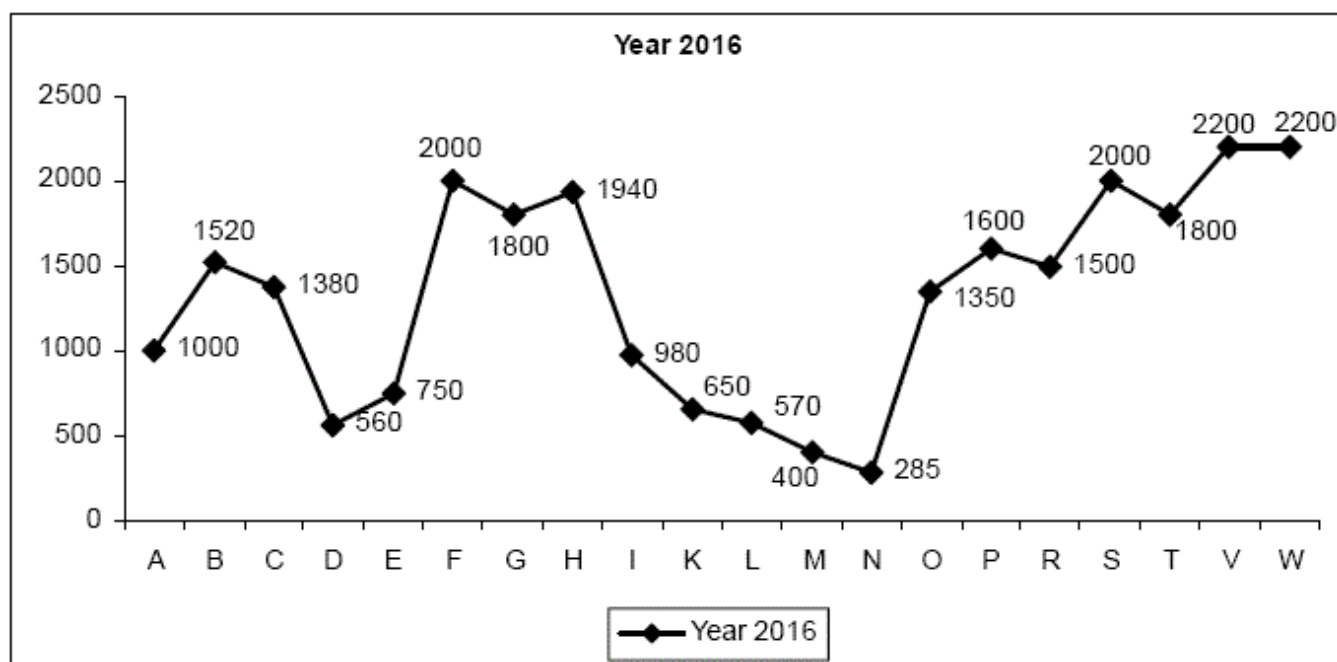
Hindustan lever promoted various companies namely A, B, C, D, E, F, G, H, I, K, L, M, N, O, P, R, S, T, V and W, and they have categorized the companies for their review mechanism as - Long Term, Valuable, No need to interfere, Struggling and Need immediate attention - category. All the companies are divided under a category initially at the start of the year and reviewed exactly after one year. The graphs below provide the details of the company
– The first graph shows the revenue (in millions) of different companies for the year 2016 whereas
- The second graph provides the data to calculate the revenue of companies for the year 2017 as it gives the value (in millions) by which the revenue of the companies from the year 2016 would have changed in 2017.
For example, for company A, revenue is 1000 million in 2016, so it will become 1000 + 100 = 1100 million in 2017.
Similarly, for company B, revenue is 1520 million in 2016, so it will become 1520 − 120 = 1400 million in 2017.

Year 2016

Change in Revenue

The table given below categorizes the companies based on their revenue value. For example, the company having revenue value in the range of 501 – 1000 will be categorized under 'Struggling' category.

Category	Range of Company Revenue (in millions)
Long term	2000+
Valuable	1501-2000
No need to interfere	1001-1500
Struggling	501-1000
Need Immediate Attention	0-500

Q.43
How many companies were categorized as Valuable in 2017?

1 ⃝ **5**

2 ⃝ **6**

3 ⃝ **7**

4 ⃝ **8**

Solution:

Correct Answer : 2

🔖 **Bookmark**

🔍 **Answer key/Solution**

Using the graph given for the revenue value and change value we can calculate the ravenue for 2017 also for the given companies. The following table comes out to be the revenue value for 2017 using 2016.

Company	2016	2017
A	1000	1100
B	1520	1400
C	1380	1630
D	560	590
E	750	700
F	2000	1800
G	1800	1700
H	1940	2100
I	980	1150
K	650	850
L	570	370
M	400	600
N	285	435
O	1350	1450
P	1600	1650
R	1500	1380
S	2000	1900
T	1800	1600
V	2200	2350
W	2200	2070

Category	2016	2017	Change in category
Long term	V,W	V,W,H	H
Valuable	B,F,G,H,P,S,T	C,F,G,P,S,T	C
No need to interfere	C,O,R	A,B,I,O,R,	A,B,I
Struggling	A,D,E,I,K,L	D,E,K,M,	M
Need Immediate Attention	N,M	N,L	L

There are 6 brands which were categorized as valuable in 2017.

FeedBack

Directions for questions 43 to 46: Answer the questions on the basis of the information given below.
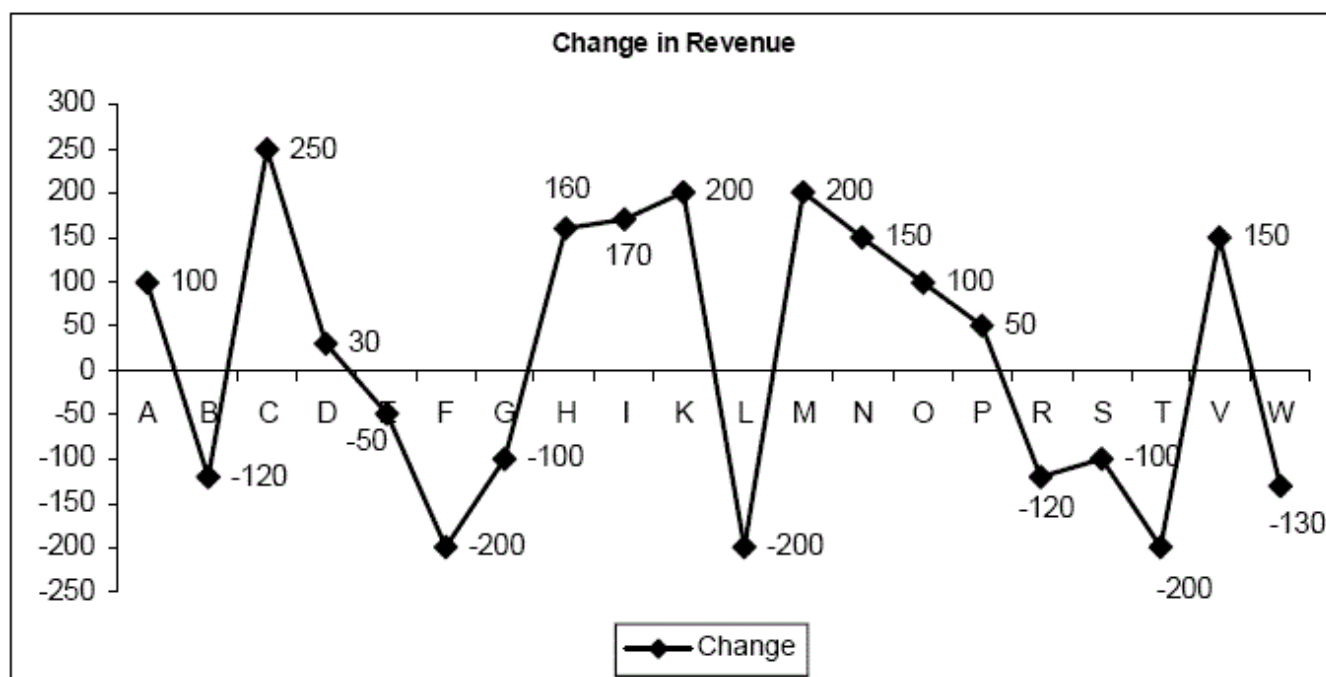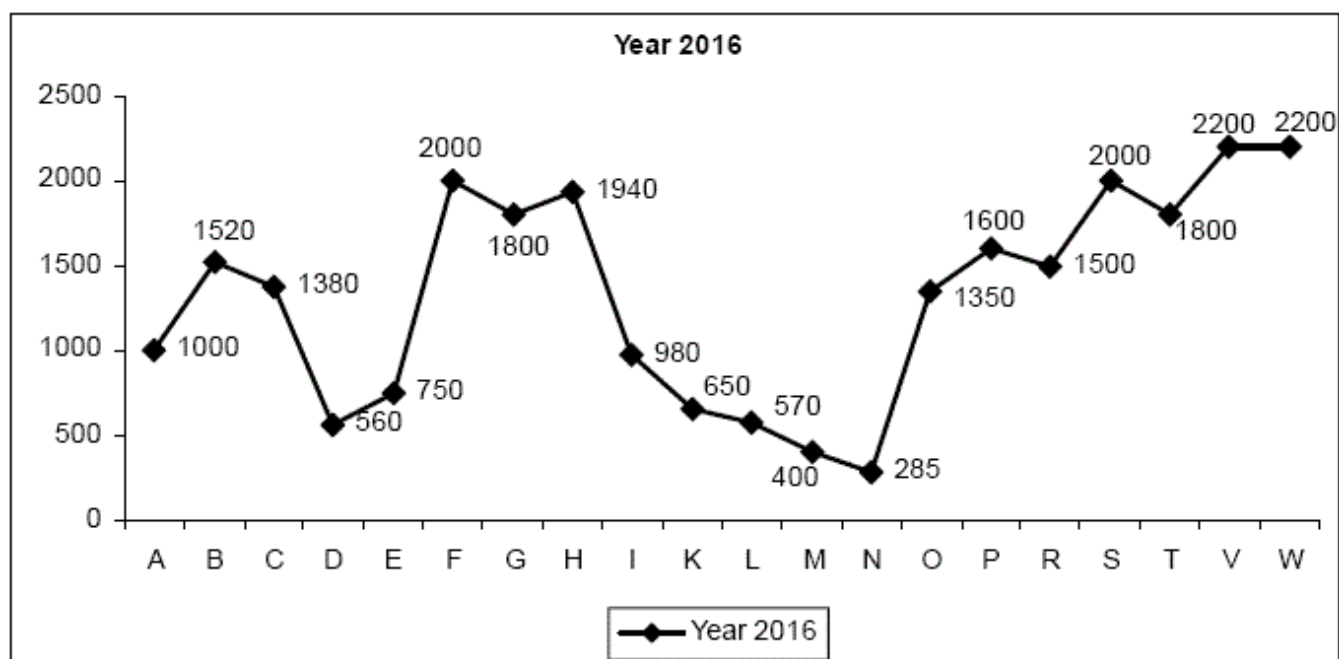
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– The first graph shows the revenue (in millions) of different companies for the year 2016 whereas

- The second graph provides the data to calculate the revenue of companies for the year 2017 as it gives the value (in millions) by which the revenue of the companies from the year 2016 would have changed in 2017.

For example, for company A, revenue is 1000 million in 2016, so it will become 1000 + 100 = 1100 million in 2017.

Similarly, for company B, revenue is 1520 million in 2016, so it will become 1520 − 120 = 1400 million in 2017.

The table given below categorizes the companies based on their revenue value. For example, the company

having revenue value in the range of 501 – 1000 will be categorized under 'Struggling' category.

Category	Range of Company Revenue (in millions)
Long term	2000+
Valuable	1501-2000
No need to interfere	1001-1500
Struggling	501-1000
Need Immediate Attention	0-500

Q.44

How many companies were shifted from one category to another during the given period?

Solution:

Correct Answer : 7

Using the graph given for the revenue value and change value we can calculate the ravenue for 2017 also for the given companies. The following table comes out to be the revenue value for 2017 using 2016.

Company	2016	2017
A	1000	1100
B	1520	1400
C	1380	1630
D	560	590
E	750	700
F	2000	1800
G	1800	1700
H	1940	2100
I	980	1150
K	650	850
L	570	370
M	400	600
N	285	435
O	1350	1450
P	1600	1650
R	1500	1380
S	2000	1900
T	1800	1600
V	2200	2350
W	2200	2070

Category	2016	2017	Change in category
Long term	V,W	V,W,H	H
Valuable	B,F,G,H,P,S,T	C,F,G,P,S,T	C
No need to interfere	C,O,R	A,B,I,O,R,	A,B,I
Struggling	A,D,E,I,K,L	D,E,K,M,	M
Need Immediate Attention	N,M	N,L	L

7 companies shifted their category.

FeedBack

Directions for questions 43 to 46: Answer the questions on the basis of the information given below.
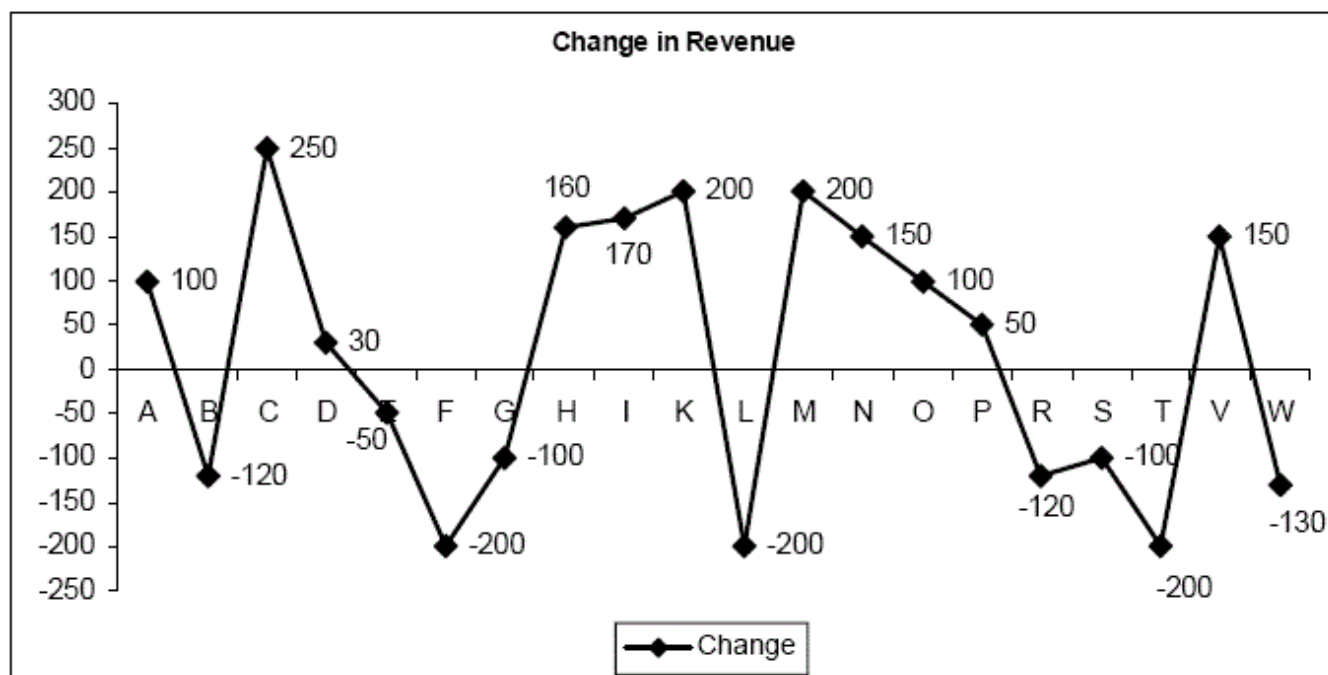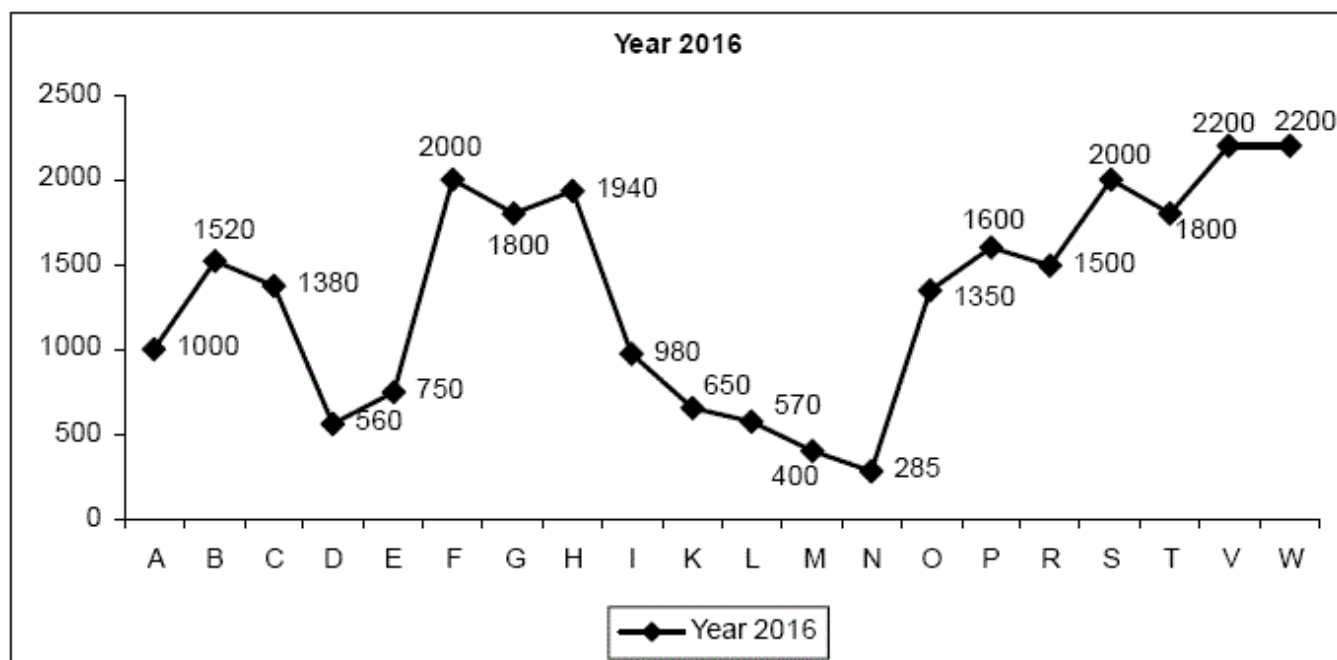
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For example, for company A, revenue is 1000 million in 2016, so it will become 1000 + 100 = 1100 million in 2017.
Similarly, for company B, revenue is 1520 million in 2016, so it will become 1520 − 120 = 1400 million in

2017.

Year 2016

Change in Revenue

The table given below categorizes the companies based on their revenue value. For example, the company having revenue value in the range of 501 – 1000 will be categorized under 'Struggling' category.

Category	Range of Company Revenue (in millions)
Long term	2000+
Valuable	1501-2000
No need to interfere	1001-1500
Struggling	501-1000
Need Immediate Attention	0-500

Q.45

Companies with more than 1000 million revenue in 2016 would be considered as a promising future brand in 2017 if the increase in their revenue would have been more than 100 million. How many companies were promising future brand in 2017?

1 ○ **2**

2 ○ **3**

3 ○ **4**

4 ○ **5**

Solution:

Correct Answer : 2

Using the graph given for the revenue value and change value we can calculate the ravenue for 2017 also for the given companies. The following table comes out to be the revenue value for 2017 using 2016.

Company	2016	2017
A	1000	1100
B	1520	1400
C	1380	1630
D	560	590
E	750	700
F	2000	1800
G	1800	1700
H	1940	2100
I	980	1150
K	650	850
L	570	370
M	400	600
N	285	435
O	1350	1450
P	1600	1650
R	1500	1380
S	2000	1900
T	1800	1600
V	2200	2350
W	2200	2070

Category	2016	2017	Change in category
Long term	V,W	V,W,H	H
Valuable	B,F,G,H,P,S,T	C,F,G,P,S,T	C
No need to interfere	C,O,R	A,B,I,O,R,	A,B,I
Struggling	A,D,E,I,K,L	D,E,K,M,	M
Need Immediate Attention	N,M	N,L	L

From the table we can conclude C, H and V has revenue of more than 1000 million in 2016 with the increase of more than 100 million in 2017.

FeedBack

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

Hindustan lever promoted various companies namely A, B, C, D, E, F, G, H, I, K, L, M, N, O, P, R, S, T, V and W, and they have categorized the companies for their review mechanism as - Long Term, Valuable, No need to interfere, Struggling and Need immediate attention - category. All the companies are divided under a category initially at the start of the year and reviewed exactly after one year. The graphs below provide the details of the company
– The first graph shows the revenue (in millions) of different companies for the year 2016 whereas
- The second graph provides the data to calculate the revenue of companies for the year 2017 as it gives

the value (in millions) by which the revenue of the companies from the year 2016 would have changed in 2017.

For example, for company A, revenue is 1000 million in 2016, so it will become 1000 + 100 = 1100 million in 2017.

Similarly, for company B, revenue is 1520 million in 2016, so it will become 1520 − 120 = 1400 million in 2017.

The table given below categorizes the companies based on their revenue value. For example, the company having revenue value in the range of 501 − 1000 will be categorized under 'Struggling' category.

Category	Range of Company Revenue (in millions)
Long term	2000+
Valuable	1501-2000
No need to interfere	1001-1500
Struggling	501-1000
Need Immediate Attention	0-500

Q.46

Which of the following company has shown the maximum percentage change in 2017?

1 ◯ **M**

2 ◯ **N**

3 ◯ **L**

4 ◯ **K**

Solution:
Correct Answer : 2

🔖 **Bookmark**

🔑 **Answer key/Solution**

Using the graph given for the revenue value and change value we can calculate the ravenue for 2017 also for the given companies. The following table comes out to be the revenue value for 2017 using 2016.

Company	2016	2017
A	1000	1100
B	1520	1400
C	1380	1630
D	560	590
E	750	700
F	2000	1800
G	1800	1700
H	1940	2100
I	980	1150
K	650	850
L	570	370
M	400	600
N	285	435
O	1350	1450
P	1600	1650
R	1500	1380
S	2000	1900
T	1800	1600
V	2200	2350
W	2200	2070

Category	2016	2017	Change in category
Long term	V,W	V,W,H	H
Valuable	B,F,G,H,P,S,T	C,F,G,P,S,T	C
No need to interfere	C,O,R	A,B,I,O,R,	A,B,I
Struggling	A,D,E,I,K,L	D,E,K,M,	M
Need Immediate Attention	N,M	N,L	L

The maximum percentage change is for company N.

FeedBack

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

In a box there are some candies. Each candy is either spherical or oval in shape, is either sweet or salty, is either red or green. Hence there are 8 different combinations according to shape, taste and colour. Further it is known that:

1. $3/5^{th}$ of the candies in the box are spherical in shape.
2. $2/7^{th}$ of the oval candies are red and $3/7^{th}$ of the red candies are spherical in shape.
3. $3/8^{th}$ of the oval shaped candies are sweet whereas $2/5^{th}$ of the sweet candies are oval shaped.
4. $1/8^{th}$ of the number of green salty candies is equal to red sweet candies. Also, $1/8^{th}$ of the red candies are sweet and oval in shape.

Q.47
What can be the minimum number of candies in the box?

Solution:

Correct Answer : 280

Let the total number of candies be X. Using statement 1, 3X/5 candies are spherical and hence 2X/5 candies are oval. Using statement 2, 2/7th of 2X/5 are red i.e. 4X/35 candies are oval and red. Hence, 2X/5 – 4X/35 i.e. 2X/7 candies are oval and green. Also, 3/7th of the red candies are spherical so 4/7th of the red candies must be oval which is equal to 4X/35. Hence, 3X/35 candies are spherical and red and hence 3X/5 – 3X/35 i.e. 18X/35 candies are spherical and green.

Using statement 4, 1/8th of the red candies are sweet and oval i.e. 1/8th of (4X/35 + 3X/35) = X/40 candies are red, oval and sweet. So, 5X/56 candies are red, oval and salty. Similarly using the other statements we reach the following table:

Total candies = X	Oval = 2X/5	Red = 4X/35	Sweet = X/40
			Salty = 5X/56
		Green = 2X/7	Sweet = X/8
			Salty = 9X/56
	Spherical = 3X/5	Red = 3X/35	Sweet = X/40
			Salty = 17X/280
		Green = 18X/35	Sweet = 65X/280
			Salty = 79X/280

Number of candies must be a multiple of 280.

FeedBack

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

In a box there are some candies. Each candy is either spherical or oval in shape, is either sweet or salty, is either red or green. Hence there are 8 different combinations according to shape, taste and colour. Further it is known that:

1. $3/5^{th}$ of the candies in the box are spherical in shape.
2. $2/7^{th}$ of the oval candies are red and $3/7^{th}$ of the red candies are spherical in shape.
3. $3/8^{th}$ of the oval shaped candies are sweet whereas $2/5^{th}$ of the sweet candies are oval shaped.
4. $1/8^{th}$ of the number of green salty candies is equal to red sweet candies. Also, $1/8^{th}$ of the red candies are sweet and oval in shape.

Q.48
Which of the following can be the number of red spherical candies?

1 ○ **15**

2 ○ **24**

3 ○ **30**

4 ○ **36**

Solution:

Correct Answer : 2

Let the total number of candies be X. Using statement 1, 3X/5 candies are spherical and hence 2X/5 candies are oval. Using statement 2, 2/7ᵗʰ of 2X/5 are red i.e. 4X/35 candies are oval and red. Hence, 2X/5 − 4X/35 i.e. 2X/7 candies are oval and green. Also, 3/7ᵗʰ of the red candies are spherical so 4/7ᵗʰ of the red candies must be oval which is equal to 4X/35. Hence, 3X/35 candies are spherical and red and hence 3X/5 − 3X/35 i.e. 18X/35 candies are spherical and green.

Using statement 4, 1/8ᵗʰ of the red candies are sweet and oval i.e. 1/8ᵗʰ of (4X/35 + 3X/35) = X/40 candies are red, oval and sweet. So, 5X/56 candies are red, oval and salty. Similarly using the other statements we reach the following table:

Total candies = X	Oval = 2X/5	Red = 4X/35	Sweet = X/40
			Salty = 5X/56
		Green = 2X/7	Sweet = X/8
			Salty = 9X/56
	Spherical = 3X/5	Red = 3X/35	Sweet = X/40
			Salty = 17X/280
		Green = 18X/35	Sweet = 65X/280
			Salty = 79X/280

The red spherical candies are 3X/35 and X is a multiple of 280. Hence, 3X/35 is definitely a multiple of 24.

FeedBack

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

In a box there are some candies. Each candy is either spherical or oval in shape, is either sweet or salty, is either red or green. Hence there are 8 different combinations according to shape, taste and colour. Further it is known that:

1. $3/5^{th}$ of the candies in the box are spherical in shape.
2. $2/7^{th}$ of the oval candies are red and $3/7^{th}$ of the red candies are spherical in shape.
3. $3/8^{th}$ of the oval shaped candies are sweet whereas $2/5^{th}$ of the sweet candies are oval shaped.
4. $1/8^{th}$ of the number of green salty candies is equal to red sweet candies. Also, $1/8^{th}$ of the red candies are sweet and oval in shape.

Q.49

Which of the following is largest in number?

1 ○ Spherical green salty candies

2 ○ Spherical red sweet candies

3 ○ Oval red salty candies

4 ○ Oval green salty candies

Solution:

Correct Answer : 1

Let the total number of candies be X. Using statement 1, 3X/5 candies are spherical and hence 2X/5 candies are oval. Using statement 2, 2/7ᵗʰ of 2X/5 are red i.e. 4X/35 candies are oval and red. Hence, 2X/5 − 4X/35 i.e. 2X/7 candies are oval and green. Also, 3/7ᵗʰ of the red candies are spherical so 4/7ᵗʰ of the red candies must be oval which is equal to 4X/35. Hence, 3X/35 candies are spherical and red and hence 3X/5 − 3X/35 i.e. 18X/35 candies are spherical and green.

Using statement 4, 1/8ᵗʰ of the red candies are sweet and oval i.e. 1/8ᵗʰ of (4X/35 + 3X/35) = X/40 candies are red, oval and sweet. So, 5X/56 candies are red, oval and salty. Similarly using the other statements we reach the following table:
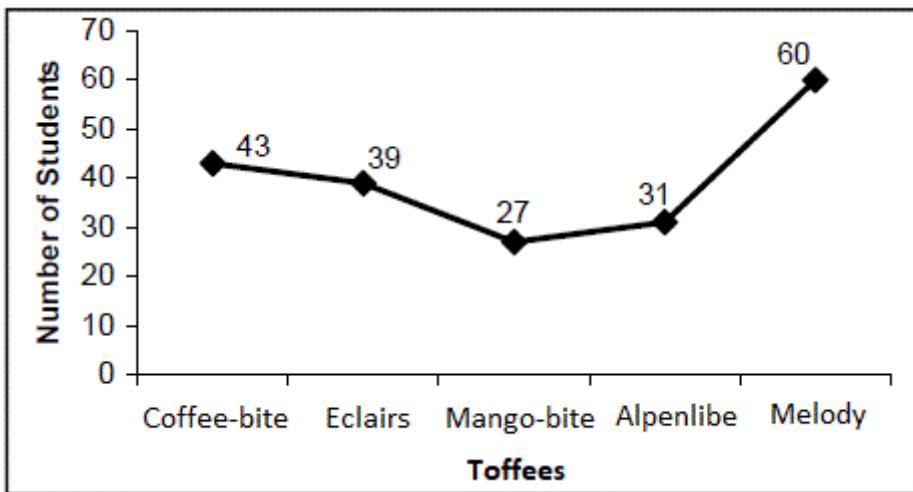
Total candies = X	Oval = 2X/5	Red = 4X/35	Sweet = X/40
			Salty = 5X/56
		Green = 2X/7	Sweet = X/8
			Salty = 9X/56
	Spherical = 3X/5	Red = 3X/35	Sweet = X/40
			Salty = 17X/280
		Green = 18X/35	Sweet = 65X/280
			Salty = 79X/280

Spherical green salty candies are largest in number.

FeedBack

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

In a box there are some candies. Each candy is either spherical or oval in shape, is either sweet or salty, is either red or green. Hence there are 8 different combinations according to shape, taste and colour. Further it is known that:

1. 3/5ᵗʰ of the candies in the box are spherical in shape.
2. 2/7ᵗʰ of the oval candies are red and 3/7ᵗʰ of the red candies are spherical in shape.
3. 3/8ᵗʰ of the oval shaped candies are sweet whereas 2/5ᵗʰ of the sweet candies are oval shaped.
4. 1/8ᵗʰ of the number of green salty candies is equal to red sweet candies. Also, 1/8ᵗʰ of the red candies are sweet and oval in shape.

Q.50
How many of the following statements is definitely a multiple of 5?

I. Oval red salty candies
II. Oval green salty candies
III. Oval green sweet candies

Solution:

Correct Answer : 3

Let the total number of candies be X. Using statement 1, 3X/5 candies are spherical and hence 2X/5 candies are oval. Using statement 2, 2/7th of 2X/5 are red i.e. 4X/35 candies are oval and red. Hence, 2X/5 – 4X/35 i.e. 2X/7 candies are oval and green. Also, 3/7th of the red candies are spherical so 4/7th of the red candies must be oval which is equal to 4X/35. Hence, 3X/35 candies are spherical and red and hence 3X/5 – 3X/35 i.e. 18X/35 candies are spherical and green.

Using statement 4, 1/8th of the red candies are sweet and oval i.e. 1/8th of (4X/35 + 3X/35) = X/40 candies are red, oval and sweet. So, 5X/56 candies are red, oval and salty. Similarly using the other statements we reach the following table:

Total candies = X	Oval = 2X/5	Red = 4X/35	Sweet = X/40
			Salty = 5X/56
		Green = 2X/7	Sweet = X/8
			Salty = 9X/56
	Spherical = 3X/5	Red = 3X/35	Sweet = X/40
			Salty = 17X/280
		Green = 18X/35	Sweet = 65X/280
			Salty = 79X/280

All of them will be a multiple of 5.

FeedBack

In a class of 200 students, 200 toffees, belonging to five different brands namely Coffee-bite, Eclairs, Mango-bite, Alpenlibe and Melody, were distributed such that each student got exactly 1 toffee. The following line graph provides information about the number of students who received a coffee-bite, an eclairs, a mango-bite, an alpenlibe and a melody.

The students exchanged the toffees among themselves and after the completion of exchanges, it was noted that no child had the same brand of toffee that he/she had earlier, and each student has exactly one toffee. After the completion of exchanges, the following observations were made:

. Out of the students who initially had a coffee-bite, the number of students who ended up with an eclairs, a mango-bite, an alpenlibe and a melody was 8, 11, 13 and 11 respectively.

. Out of the students who initially had a mango-bite, the number of students who ended up with a coffee-bite and an eclairs was 3 and 16 respectively.

. Out of the students who initially had an alpenlibe, the number of students who ended up with a coffee-bite was 8.

. Out of the students who initially had a melody, the number of students who ended up with an alpenlibe was also 8.

Q.51
After the completion of exchanges, out of the students who initially had a melody, at least how many students must have a coffee-bite eventually?

Solution:

Correct Answer : 21

As per the information given in the question about the exchange and for remaining using the variables, we can form the following table about the number of toffees exchanged between students from one brand to another:

	Coffee-bite	Eclairs	Mango-bite	Alpenlibe	Melody	Total
Coffee-bite	0	8	11	13	11	43
Eclairs	w	0	z	$10 - y$	$29+y-w-z$	39
Mango-bite	3	16	0	y	$8 - y$	27
Alpenlibe	8	x	$11-w-z-x$	0	$12 + w + z$	31
Melody	$32 - w$	$15 - x$	$5 + w + x$	8	0	60
Total	43	39	27	31	60	

From the table we get the following inequalities for the variables, as number of toffees has to be positive:

$0 \le w \le 11$
$0 \le x \le 11$
$0 \le y \le 8$
$0 \le z \le 11$
$x + w + z \le 11$
$w + z - y \le 29$

From the above table, out of the students that originally had a melody, the number of students now having a coffee-bite is '$32 - w$'. Now, maximum possible value of w is 11.

Therefore, minimum possible value of $32 - w = 32 - 11 = 21$.

FeedBack

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

In a class of 200 students, 200 toffees, belonging to five different brands namely Coffee-bite, Eclairs, Mango-bite, Alpenlibe and Melody, were distributed such that each student got exactly 1 toffee. The following line graph provides information about the number of students who received a coffee-bite, an eclairs, a mango-bite, an alpenlibe and a melody.

The students exchanged the toffees among themselves and after the completion of exchanges, it was noted that no child had the same brand of toffee that he/she had earlier, and each student has exactly one toffee. After the completion of exchanges, the following observations were made:
. Out of the students who initially had a coffee-bite, the number of students who ended up with an eclairs, a mango-bite, an alpenlibe and a melody was 8, 11, 13 and 11 respectively.
. Out of the students who initially had a mango-bite, the number of students who ended up with a coffee-bite and an eclairs was 3 and 16 respectively.
. Out of the students who initially had an alpenlibe, the number of students who ended up with a coffee-bite was 8.
. Out of the students who initially had a melody, the number of students who ended up with an alpenlibe was also 8.

Q.52
After the completion of exchanges, if out of the students who initially had an eclairs, the number of students who ended up with a melody was the maximum possible, then at most how many of those students who had a mango-bite after exchanges had a melody initially?

Solution:

Correct Answer : 16

As per the information given in the question about the exchange and for remaining using the variables, we can form the following table about the number of toffees exchanged between students from one brand to another:

	Coffee-bite	Eclairs	Mango-bite	Alpenlibe	Melody	Total
Coffee-bite	0	8	11	13	11	43
Eclairs	w	0	z	10 – y	29+y–w–z	39
Mango-bite	3	16	0	y	8 – y	27
Alpenlibe	8	x	11–w–z–x	0	12 + w + z	31
Melody	32 – w	15 – x	5 + w + x	8	0	60
Total	43	39	27	31	60	

From the table we get the following inequalities for the variables, as number of toffees has to be positive:

$0 \le w \le 11$
$0 \le x \le 11$
$0 \le y \le 8$
$0 \le z \le 11$
$x + w + z \le 11$
$w + z - y \le 29$

Out of the students that originally had eclairs, the number of students now having a melody is $29 + y - w - z$.
Maximum possible value of $29 + y - w - z$ is 37 when y = 8, w = z = 0.
Out of the students that now have an mango-bite, the number of students that originally had a melody is $5 + w + x$.
Maximum possible value, i.e. at x = 11, of $5 + w + x$ is 16.

FeedBack

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

In a class of 200 students, 200 toffees, belonging to five different brands namely Coffee-bite, Eclairs, Mango-bite, Alpenlibe and Melody, were distributed such that each student got exactly 1 toffee. The following line graph provides information about the number of students who received a coffee-bite, an eclairs, a mango-bite, an alpenlibe and a melody.

The students exchanged the toffees among themselves and after the completion of exchanges, it was noted that no child had the same brand of toffee that he/she had earlier, and each student has exactly one toffee. After the completion of exchanges, the following observations were made:
. Out of the students who initially had a coffee-bite, the number of students who ended up with an eclairs, a mango-bite, an alpenlibe and a melody was 8, 11, 13 and 11 respectively.
. Out of the students who initially had a mango-bite, the number of students who ended up with a coffee-bite and an eclairs was 3 and 16 respectively.
. Out of the students who initially had an alpenlibe, the number of students who ended up with a coffee-bite was 8.
. Out of the students who initially had a melody, the number of students who ended up with an alpenlibe was also 8.

Q.53
After the completion of exchanges, if out of the students who initially had an eclairs, 7 have a mango-bite, then what was the maximum number of students who initially had a melody and end up with a mango-bite?

1 ○ **9**

2 ○ **8**

3 ○ **10**

4 ○ **6**

As per the information given in the question about the exchange and for remaining using the variables, we can form the following table about the number of toffees exchanged between students from one brand to another:

	Coffee-bite	Eclairs	Mango-bite	Alpenlibe	Melody	Total
Coffee-bite	0	8	11	13	11	43
Eclairs	w	0	z	10 – y	29+y–w–z	39
Mango-bite	3	16	0	y	8 – y	27
Alpenlibe	8	x	11–w–z–x	0	12 + w + z	31
Melody	32 – w	15 – x	5 + w + x	8	0	60
Total	43	39	27	31	60	

From the table we get the following inequalities for the variables, as number of toffees has to be positive:

$0 \le w \le 11$

$0 \le x \le 11$

$0 \le y \le 8$

$0 \le z \le 11$

$x + w + z \le 11$

$w + z - y \le 29$

By the question, z = 7.

Required to find:

Maximum value of 5 + w + x

From the afore-mentioned inequalities $w + x + z \le 11$

$\Rightarrow w + x \le 4$

∴ Required value = 5 + 4 = 9.

FeedBack

In a class of 200 students, 200 toffees, belonging to five different brands namely Coffee-bite, Eclairs, Mango-bite, Alpenlibe and Melody, were distributed such that each student got exactly 1 toffee. The following line graph provides information about the number of students who received a coffee-bite, an eclairs, a mango-bite, an alpenlibe and a melody.

The students exchanged the toffees among themselves and after the completion of exchanges, it was noted that no child had the same brand of toffee that he/she had earlier, and each student has exactly one toffee. After the completion of exchanges, the following observations were made:
. Out of the students who initially had a coffee-bite, the number of students who ended up with an eclairs, a mango-bite, an alpenlibe and a melody was 8, 11, 13 and 11 respectively.
. Out of the students who initially had a mango-bite, the number of students who ended up with a coffee-bite and an eclairs was 3 and 16 respectively.
. Out of the students who initially had an alpenlibe, the number of students who ended up with a coffee-bite was 8.
. Out of the students who initially had a melody, the number of students who ended up with an alpenlibe was also 8.

Q.54
Out of the students who initially had an eclairs, what was the maximum number of students who ended up with either a coffee-bite or a mango-bite after the exchange?

1 ○ 10

2 ○ 11

3 ○ 8

4 ○ 7

Solution:

Correct Answer : 2

As per the information given in the question about the exchange and for remaining using the variables, we can form the following table about the number of toffees exchanged between students from one brand to another:

	Coffee-bite	Eclairs	Mango-bite	Alpenlibe	Melody	Total
Coffee-bite	0	8	11	13	11	43
Eclairs	w	0	z	10 – y	29+y–w–z	39
Mango-bite	3	16	0	y	8 – y	27
Alpenlibe	8	x	11–w–z–x	0	12 + w + z	31
Melody	32 – w	15 – x	5 + w + x	8	0	60
Total	43	39	27	31	60	

From the table we get the following inequalities for the variables, as number of toffees has to be positive:

$0 \leq w \leq 11$
$0 \leq x \leq 11$
$0 \leq y \leq 8$
$0 \leq z \leq 11$
$x + w + z \leq 11$
$w + z - y \leq 29$

The question asks for maximum value of $w + z$
From the afore-mentioned inequalities $w + x + z \leq 11$
If $x = 0$, then $w + z \leq 11$.
Thus, maximum value of $w + z = 11$.

FeedBack

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

Each of the seven siblings – Ananya, Bheem, Chitra, Daman, Ekansh, Firoz and Geeta – went to a Diwali Mahautsav organized by their housing society and participated in a different activity from among - Treasure hunt(TH), Dance on beat(DB), Fashion Walk(FW), Eat Unlimited(EU), Cook delicious(CD), Sing Bindass(SB) and Colour Canvas(CC), not necessarily in the same order. It is also known that:

(i) There is exactly one pair of twins among the seven and none of the twins participated in CC.
(ii) Bheem participated in SB and Ananya participated in EU.
(iii) Those who participated in DB, FW and CD are younger than Daman, who is not the eldest among the seven.
(iv) Ekansh is younger than Chitra, who is younger than Firoz.
(v) The eldest and the youngest of the siblings participated in FW and EU, in no particular order.
(vi) The one who participated in TH has exactly four siblings elder to him/her and the one who participated in CC has exactly four siblings younger than him/her.
Note: Twins to be considered equal in age.

Q.55
In which of the following activities did Firoz definitely not participate?

1 ○ **FW**

2 ○ **CD**

3 ○ **DB**

---

4 ○ **None of these**

Solution:

Correct Answer : 1

By statement (vi), positions of TH and CC can be fixed in the terms of age

Activity
	← Eldest
CC
TH
	← Youngest

From statement (iii), those who participated in FW, DB, and CD must be younger than Daman and hence, the remaining positions in the activity column will be occupied by SB and EU. Therefore, Daman must have participated in CC.

From statement (v), the eldest and the youngest of the siblings participated in FW and EU. Since FW is younger than Daman hence the one who participated in FW is youngest and the one who participated in EU is eldest.

Activity	Siblings (Case I)	Siblings (Case II)	Siblings (Case III)		
EU	Ananya	Ananya	Ananya	←	Eldest
SB	Bheem	Bheem	Bheem		
CC	Daman	Daman	Daman		
DB/CD	Firoz	Firoz	Firoz/Geeta		
TH	Geeta/Chitra	Chitra	Geeta/Firoz		
CD/DB	Chitra/Geeta	Ekansh/Geeta	Chitra		
FW	Ekansh	Geeta/Ekansh	Ekansh	←	Youngest

FW

FeedBack

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

Each of the seven siblings – Ananya, Bheem, Chitra, Daman, Ekansh, Firoz and Geeta – went to a Diwali Mahautsav organized by their housing society and participated in a different activity from among - Treasure hunt(TH), Dance on beat(DB), Fashion Walk(FW), Eat Unlimited(EU), Cook delicious(CD), Sing Bindass(SB) and Colour Canvas(CC), not necessarily in the same order. It is also known that:

(i) There is exactly one pair of twins among the seven and none of the twins participated in CC.
(ii) Bheem participated in SB and Ananya participated in EU.
(iii) Those who participated in DB, FW and CD are younger than Daman, who is not the eldest among the seven.
(iv) Ekansh is younger than Chitra, who is younger than Firoz.
(v) The eldest and the youngest of the siblings participated in FW and EU, in no particular order.
(vi) The one who participated in TH has exactly four siblings elder to him/her and the one who participated in CC has exactly four siblings younger than him/her.
Note: Twins to be considered equal in age.

Q.56
Who among the following is one of the twins?

---

1 ○ **Ekansh**

---

2 ○ **Firoz**

---

3 ○ **Geeta**

---

4 ○ **Daman**

Solution:

Correct Answer : 3

By statement (vi), positions of TH and CC can be fixed in the terms of age

Activity
CC
TH

← Eldest

← Youngest

From statement (iii), those who participated in FW, DB, and CD must be younger than Daman and hence, the remaining positions in the activity column will be occupied by SB and EU. Therefore, Daman must have participated in CC.

From statement (v), the eldest and the youngest of the siblings participated in FW and EU. Since FW is younger than Daman hence the one who participated in FW is youngest and the one who participated in EU is eldest.

Activity	Siblings (Case I)	Siblings (Case II)	Siblings (Case III)		
EU	Ananya	Ananya	Ananya	←	Eldest
SB	Bheem	Bheem	Bheem		
CC	Daman	Daman	Daman		
DB/CD	Firoz	Firoz	Firoz/Geeta		
TH	Geeta/Chitra	Chitra	Geeta/Firoz		
CD/DB	Chitra/Geeta	Ekansh/Geeta	Chitra		
FW	Ekansh	Geeta/Ekansh	Ekansh	←	Youngest

Geeta

FeedBack

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

Each of the seven siblings – Ananya, Bheem, Chitra, Daman, Ekansh, Firoz and Geeta – went to a Diwali Mahautsav organized by their housing society and participated in a different activity from among - Treasure hunt(TH), Dance on beat(DB), Fashion Walk(FW), Eat Unlimited(EU), Cook delicious(CD), Sing Bindass(SB) and Colour Canvas(CC), not necessarily in the same order. It is also known that:

(i) There is exactly one pair of twins among the seven and none of the twins participated in CC.
(ii) Bheem participated in SB and Ananya participated in EU.
(iii) Those who participated in DB, FW and CD are younger than Daman, who is not the eldest among the seven.
(iv) Ekansh is younger than Chitra, who is younger than Firoz.
(v) The eldest and the youngest of the siblings participated in FW and EU, in no particular order.
(vi) The one who participated in TH has exactly four siblings elder to him/her and the one who participated in CC has exactly four siblings younger than him/her.
Note: Twins to be considered equal in age.

Q.57
Who participated in CC?

1 ○ **Geeta**

2 ○ **Ekansh**

3 ○ **Chitra**

4 ○ **Daman**

Solution:

Correct Answer : 4

By statement (vi), positions of TH and CC can be fixed in the terms of age

Activity
CC
TH

← Eldest

← Youngest

From statement (iii), those who participated in FW, DB, and CD must be younger than Daman and hence, the remaining positions in the activity column will be occupied by SB and EU. Therefore, Daman must have participated in CC.

From statement (v), the eldest and the youngest of the siblings participated in FW and EU. Since FW is younger than Daman hence the one who participated in FW is youngest and the one who participated in EU is eldest.

Activity	Siblings (Case I)	Siblings (Case II)	Siblings (Case III)		
EU	Ananya	Ananya	Ananya	←	Eldest
SB	Bheem	Bheem	Bheem		
CC	Daman	Daman	Daman		
DB/CD	Firoz	Firoz	Firoz/Geeta		
TH	Geeta/Chitra	Chitra	Geeta/Firoz		
CD/DB	Chitra/Geeta	Ekansh/Geeta	Chitra		
FW	Ekansh	Geeta/Ekansh	Ekansh	←	Youngest

Daman

FeedBack

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

Each of the seven siblings – Ananya, Bheem, Chitra, Daman, Ekansh, Firoz and Geeta – went to a Diwali Mahautsav organized by their housing society and participated in a different activity from among - Treasure hunt(TH), Dance on beat(DB), Fashion Walk(FW), Eat Unlimited(EU), Cook delicious(CD), Sing Bindass(SB) and Colour Canvas(CC), not necessarily in the same order. It is also known that:

(i) There is exactly one pair of twins among the seven and none of the twins participated in CC.
(ii) Bheem participated in SB and Ananya participated in EU.
(iii) Those who participated in DB, FW and CD are younger than Daman, who is not the eldest among the seven.
(iv) Ekansh is younger than Chitra, who is younger than Firoz.
(v) The eldest and the youngest of the siblings participated in FW and EU, in no particular order.
(vi) The one who participated in TH has exactly four siblings elder to him/her and the one who participated in CC has exactly four siblings younger than him/her.
Note: Twins to be considered equal in age.

Q.58
If the present age of Daman is 18 years, then which of the following can be the present age of Bheem?

1 ○ **20 years**

2 ○ **17 years**

3 ○ **15 years**

4 ○ **Cannot be determined**

Solution:

Correct Answer : 1

By statement (vi), positions of TH and CC can be fixed in the terms of age

Activity
CC
TH

← Eldest

← Youngest

From statement (iii), those who participated in FW, DB, and CD must be younger than Daman and hence, the remaining positions in the activity column will be occupied by SB and EU. Therefore, Daman must have participated in CC.

From statement (v), the eldest and the youngest of the siblings participated in FW and EU. Since FW is younger than Daman hence the one who participated in FW is youngest and the one who participated in EU is eldest.

Activity	Siblings (Case I)	Siblings (Case II)	Siblings (Case III)		
EU	Ananya	Ananya	Ananya	←	Eldest
SB	Bheem	Bheem	Bheem		
CC	Daman	Daman	Daman		
DB/CD	Firoz	Firoz	Firoz/Geeta		
TH	Geeta/Chitra	Chitra	Geeta/Firoz		
CD/DB	Chitra/Geeta	Ekansh/Geeta	Chitra		
FW	Ekansh	Geeta/Ekansh	Ekansh	←	Youngest

Since Bheem is elder than Daman, therefore the possible age could be 20 years.

FeedBack

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

Three pairs of twins, each consisting of a girl and a boy, joined a gym. Their names were M, N, O, P, Q and R, in no particular order. Mr. Swasth, a trainer at the gym, observed that the six persons had distinct heights and distinct weights. He decided to rank them on the two parameters in two different lists. The heaviest of the six was ranked 1, the second heaviest ranked 2 and so on. Similarly, the tallest of the six was ranked 1, the second tallest ranked 2 and so on. It is also known that:

(i) In exactly one of the three pairs, the girl was heavier than her brother.

(ii) Exactly two persons were taller than O.

(iii) The shortest person among the six was also the heaviest.

(iv) The only person shorter than Q was her brother.

(v) Only one person got the same rank in the two lists.

(vi) The ranks of M and his sister R got interchanged in the two lists.

(vii) P was heavier than at least two persons. P, a female, was not N's sister.

Q.59

Who got the same rank in the two lists?

1 ⚪ **N**

2 ⊙ O

3 ⊙ Q

4 ⊙ Cannot be determined

Solution:

Correct Answer : 3

From statements (iv), (vi) and (vii), it can be concluded that M, N and O were brothers of R, Q and P respectively. From statement (iv), Q's height-wise rank was 5 and that of N was 6. Now, from statement (iii), N's weight-wise rank was 1. From statement (ii), O's height-wise rank was 3.

The conclusions drawn so far can be tabulated as shown below.

Rank	1	2	3	4	5	6
Height-wise			O		Q	N
Weight-wise	N					

From statement (vi), the ranks of M and R must have been 2 and 4 in the two parameters, not necessarily in that order. From statement (vii), the weight-wise rank of P must have been 3. From statement (v), only one person got the same rank in the two parameters, and it is possible only for Q. Therefore, Q's rank in both the parameters must have been 5. Hence, O's weight-wise rank must have been 6.

From statement (i), M's weight-wise rank must have been 2 and that of R was 4. Hence, the height-wise ranks of M and R must have been must have been 4 and 2 respectively.

The final arrangement can be tabulated as shown below.

Rank	1	2	3	4	5	6
Height-wise	P	R	O	M	Q	N
Weight-wise	N	M	P	R	Q	O

Q got the same rank on the two lists.

FeedBack

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

Three pairs of twins, each consisting of a girl and a boy, joined a gym. Their names were M, N, O, P, Q and R, in no particular order. Mr. Swasth, a trainer at the gym, observed that the six persons had distinct heights and distinct weights. He decided to rank them on the two parameters in two different lists. The heaviest of the six was ranked 1, the second heaviest ranked 2 and so on. Similarly, the tallest of the six was ranked 1, the second tallest ranked 2 and so on. It is also known that:

(i) In exactly one of the three pairs, the girl was heavier than her brother.
(ii) Exactly two persons were taller than O.
(iii) The shortest person among the six was also the heaviest.
(iv) The only person shorter than Q was her brother.
(v) Only one person got the same rank in the two lists.
(vi) The ranks of M and his sister R got interchanged in the two lists.
(vii) P was heavier than at least two persons. P, a female, was not N's sister.

Q.60
Who was the lightest among the six persons?

1 ○ O

2 ○ M

3 ○ Q

4 ○ Cannot be determined

Solution:
Correct Answer : 1

From statements (iv), (vi) and (vii), it can be concluded that M, N and O were brothers of R, Q and P respectively. From statement (iv), Q's height-wise rank was 5 and that of N was 6. Now, from statement (iii), N's weight-wise rank was 1. From statement (ii), O's height-wise rank was 3.
The conclusions drawn so far can be tabulated as shown below.

Rank	1	2	3	4	5	6
Height-wise			O		Q	N
Weight-wise	N					

From statement (vi), the ranks of M and R must have been 2 and 4 in the two parameters, not necessarily in that order. From statement (vii), the weight-wise rank of P must have been 3. From statement (v), only one person got the same rank in the two parameters, and it is possible only for Q. Therefore, Q's rank in both the parameters must have been 5. Hence, O's weight-wise rank must have been 6.
From statement (i), M's weight-wise rank must have been 2 and that of R was 4. Hence, the height-wise ranks of M and R must have been must have been 4 and 2 respectively.

The final arrangement can be tabulated as shown below.

Rank	1	2	3	4	5	6
Height-wise	P	R	O	M	Q	N
Weight-wise	N	M	P	R	Q	O

O is the lightest among the six.

> FeedBack

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

Three pairs of twins, each consisting of a girl and a boy, joined a gym. Their names were M, N, O, P, Q and R, in no particular order. Mr. Swasth, a trainer at the gym, observed that the six persons had distinct heights and distinct weights. He decided to rank them on the two parameters in two different lists. The heaviest of the six was ranked 1, the second heaviest ranked 2 and so on. Similarly, the tallest of the six was ranked 1, the second tallest ranked 2 and so on. It is also known that:
(i) In exactly one of the three pairs, the girl was heavier than her brother.
(ii) Exactly two persons were taller than O.
(iii) The shortest person among the six was also the heaviest.
(iv) The only person shorter than Q was her brother.
(v) Only one person got the same rank in the two lists.
(vi) The ranks of M and his sister R got interchanged in the two lists.
(vii) P was heavier than at least two persons. P, a female, was not N's sister.

Q.61

What was the weight-wise rank of M?

Solution:

Correct Answer : 2

From statements (iv), (vi) and (vii), it can be concluded that M, N and O were brothers of R, Q and P respectively. From statement (iv), Q's height-wise rank was 5 and that of N was 6. Now, from statement (iii), N's weight-wise rank was 1. From statement (ii), O's height-wise rank was 3.

The conclusions drawn so far can be tabulated as shown below.

Rank	1	2	3	4	5	6
Height-wise			O		Q	N
Weight-wise	N					

From statement (vi), the ranks of M and R must have been 2 and 4 in the two parameters, not necessarily in that order. From statement (vii), the weight-wise rank of P must have been 3. From statement (v), only one person got the same rank in the two parameters, and it is possible only for Q. Therefore, Q's rank in both the parameters must have been 5. Hence, O's weight-wise rank must have been 6.

From statement (i), M's weight-wise rank must have been 2 and that of R was 4. Hence, the height-wise ranks of M and R must have been must have been 4 and 2 respectively.

The final arrangement can be tabulated as shown below.

Rank	1	2	3	4	5	6
Height-wise	P	R	O	M	Q	N
Weight-wise	N	M	P	R	Q	O

Weight-wise rank of M was 2.

FeedBack

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

Three pairs of twins, each consisting of a girl and a boy, joined a gym. Their names were M, N, O, P, Q and R, in no particular order. Mr. Swasth, a trainer at the gym, observed that the six persons had distinct heights and distinct weights. He decided to rank them on the two parameters in two different lists. The heaviest of the six was ranked 1, the second heaviest ranked 2 and so on. Similarly, the tallest of the six was ranked 1, the second tallest ranked 2 and so on. It is also known that:

(i) In exactly one of the three pairs, the girl was heavier than her brother.
(ii) Exactly two persons were taller than O.
(iii) The shortest person among the six was also the heaviest.
(iv) The only person shorter than Q was her brother.
(v) Only one person got the same rank in the two lists.
(vi) The ranks of M and his sister R got interchanged in the two lists.
(vii) P was heavier than at least two persons. P, a female, was not N's sister.

Q.62

Who was the tallest among them?

1 ⚪ P

2 ⚪ R

3 ○ O

4 ○ M

Solution:

Correct Answer : 1

From statements (iv), (vi) and (vii), it can be concluded that M, N and O were brothers of R, Q and P respectively. From statement (iv), Q's height-wise rank was 5 and that of N was 6. Now, from statement (iii), N's weight-wise rank was 1. From statement (ii), O's height-wise rank was 3.

The conclusions drawn so far can be tabulated as shown below.

Rank	1	2	3	4	5	6
Height-wise			O		Q	N
Weight-wise	N					

From statement (vi), the ranks of M and R must have been 2 and 4 in the two parameters, not necessarily in that order. From statement (vii), the weight-wise rank of P must have been 3. From statement (v), only one person got the same rank in the two parameters, and it is possible only for Q. Therefore, Q's rank in both the parameters must have been 5. Hence, O's weight-wise rank must have been 6.

From statement (i), M's weight-wise rank must have been 2 and that of R was 4. Hence, the height-wise ranks of M and R must have been must have been 4 and 2 respectively.

The final arrangement can be tabulated as shown below.

Rank	1	2	3	4	5	6
Height-wise	P	R	O	M	Q	N
Weight-wise	N	M	P	R	Q	O

P is the tallest among the six.

FeedBack

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

A scientist is trying to find a cure for the common cold using four ingredients. He can choose from the stable chemicals - Tween 80, PEGs, and PVP - and the unstable chemicals – Borate, TRIS, Phosphate, and Citrate. In order for the formula not to explode, there must be two stable chemicals in it. Also, certain chemicals cannot be mixed because of their reaction together. Chemical PEGs cannot be mixed with chemical Borate. Chemical PVP cannot be mixed with Chemical Phosphate. Chemical Phosphate cannot be mixed with Chemical Citrate.

Q.63
If the scientist calculated that Phosphate is the most important chemical and must be used in the formula, then which other ingredients must be a part of the cure?

1 ○ Tween 80, PEGs and Citrate

2 ○ PEGs, PVP and TRIS

3 ○ Tween 80, PEGs and Borate

4 ○ Tween 80, PEGs and TRIS

Solution:

Correct Answer : 4

If Phosphate is included → exclude Citrate and PVP.

Now, PEGs is present → exclude Borate. We have : Phosphate + (TRIS, Tween 80, PEGs)

FeedBack

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

A scientist is trying to find a cure for the common cold using four ingredients. He can choose from the stable chemicals - Tween 80, PEGs, and PVP - and the unstable chemicals – Borate, TRIS, Phosphate, and Citrate. In order for the formula not to explode, there must be two stable chemicals in it. Also, certain chemicals cannot be mixed because of their reaction together. Chemical PEGs cannot be mixed with chemical Borate. Chemical PVP cannot be mixed with Chemical Phosphate. Chemical Phosphate cannot be mixed with Chemical Citrate.

Q.64

The scientist rejected chemical PEGs because of its possible side effects but decided to use chemical Citrate. Which is a possible combination of the four ingredients in the formula?

1 ○ **Tween 80, Borate, Phosphate, and Citrate**

2 ○ **Tween 80, PVP, Borate, and Citrate**

3 ○ **Tween 80, Borate, TRIS, and Citrate**

4 ○ **Tween 80, TRIS, Phosphate and Citrate**

Solution:

Correct Answer : 2

Since PEGs is rejected → Tween 80 and PVP included

Since PVP is used → Phosphate excluded

Thus, we can have : Tween 80 and PVP + (Any 2 from borate, TRIS, Citrate)

FeedBack

Q.65
Which of the following combinations of chemicals is impossible?
I. Using chemical Phosphate and Borate together.
II. Using chemical PEGs and PVP together.
III. Using chemical Borate, TRIS, and Citrate together.

1 ○ III only

2 ○ I and III only

3 ○ I only

4 ○ II only

Solution:

Correct Answer : 2

I → If Phosphate and Borate are used → PEGs and PVP are not used → only Tween 80 from Ist group is used.
It is not possible since two stable chemical had to be their
III → Here number of ingredients are turning out to be 5 but only 4 must be used so it is impossible.

🔖 **Bookmark**

🔑 Answer key/Solution

[FeedBack]

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

A scientist is trying to find a cure for the common cold using four ingredients. He can choose from the stable chemicals - Tween 80, PEGs, and PVP - and the unstable chemicals – Borate, TRIS, Phosphate, and Citrate. In order for the formula not to explode, there must be two stable chemicals in it. Also, certain chemicals cannot be mixed because of their reaction together. Chemical PEGs cannot be mixed with chemical Borate. Chemical PVP cannot be mixed with Chemical Phosphate. Chemical Phosphate cannot be mixed with Chemical Citrate.

Q.66
Which of the following can never be true?
I. If chemical PVP is used, chemical Citrate is added.
II. If chemical PEGs is not used, chemical Phosphate is added.
III. If chemical PVP is used, chemical Borate is added.

1 ○ III only

2 ○ I and II only

3 ○ I, II and III

4 ○ II only

Solution:

Correct Answer : 4

II → If PEGs is not used then Tween 80 and PVP are used but PVP cannot be mixed with chemical phosphate.

FeedBack

Sec 3

Q.67

If PR and QT intersect each other at X, where PQRST is a regular pentagon, then what is the measure (in degree) of ∠TXR?

1 ○ **98**

2 ○ **90**

3 ○ **72**

4 ○ **108**

Solution:

Correct Answer : 4
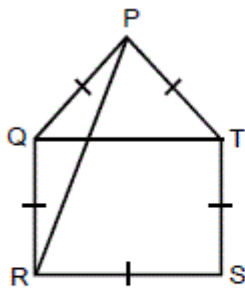
As PQRST is a regular pentagon and we know that the sum of the interior angle of a polygon having n sides = $(2n - 4)90°$.

∴ Total sum of the interior angles of pentagon = 540°

Each interior angle = $\dfrac{540}{5} = 108°$.

⇒ ∠PQR = 108°.

As PQ = QR

⇒ ∠QPR = $\dfrac{180 - 108}{2} = 36°$.

Now, in ΔPQT,

∠QPT = 108°

PQ = PT

∴ ∠PQT = $\dfrac{180 - 108}{2} = 36°$

∴ ∠PXT = 72° [Exterior angle of ΔP × Q]

∴ ∠TXR = 180 – 72° = 108° {∵ PXR is a straight line}

FeedBack

Q.68

Dipin's score is 15% more than that of Rafi and Rafi's score is 10% less than that of Chandar. If the difference between the scores of Dipin and Chandar is 14, then what is the score of Rafi?

Solution:

Correct Answer : 360

Dipin's score = $\frac{115}{100}$ × Rafi's score

Rafi's score = $\frac{90}{100}$ × Chandar's score

Let Chandar's score be X

$\therefore \frac{115}{100} \times \frac{90}{100}X - X = 14$

$\frac{207}{200}X - X = 14$

$7X = 14 \times 200$

$X = 400$

Rafi's score = $\frac{90}{100} \times 400 = 360$

FeedBack

Q.69

If A = 4 + √15 and B has a value such that AB = 1, then what is the value of $1/A^2 + 1/B^2$?

1 ○ **64**

2 ○ **62**

3 ○ **70**

4 ○ **Cannot be determined**

Solution:

Correct Answer : 2

$A = 4 + \sqrt{15}$ and AB = 1

$\Rightarrow B = 4 - \sqrt{15}$

$\therefore \frac{1}{A^2} + \frac{1}{B^2} = \frac{A^2 + B^2}{(AB)^2} = \frac{(A+B)^2 - 2AB}{(AB)^2} = \frac{(8)^2 - 2}{1} = 62.$

FeedBack

Q.70

"I am three times as old as you were when I was as old as you are now", said a mother to his son. If the sum of the present ages of the mother and the son is 120 years, then what is the present age (in years) of the mother?

Solution:

Correct Answer : 72

Present age : Mother x and Son y
When mother was y' years old
i.e. (x − y) years before, at that time son's age was y − (x − y) = (2y − x) years
∴ x = 3(2y − x)

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

If x = 3k, y = 2k
∴ 3k + 2k = 120
⇒ k = 24
⇒ Present age of mother is 3 × 24 = 72 years.

FeedBack

Q.71

Two articles are sold, each at a price of Rs. 4950, one at 10% profit and other at 10% loss. Find the overall loss amount (in Rs.).

1 ○ **1000**

2 ○ **0**

3 ○ **100**

4 ○ **300**

Solution:

Correct Answer : 3

S.P. of 1st article = SP of 2nd article = Rs. 4950
Profit = 10%

$$\therefore \text{ C.P. of 1st article} = \frac{100}{110} \times 4950 = Rs.4500$$

There is loss on other article

$$\therefore \text{ C.P. of 2nd article} = \frac{100}{90} \times 4950 = Rs.5500$$

∴ Total C.P. = 4500 + 5500 = Rs. 10000
∴ Total S.P. = 4950 × 2 = Rs. 9900
∴ Overall loss amount = Rs.(10000 − 9900) = Rs. 100.

FeedBack

Q.72

If Naresh has 5 different shirts and 7 different pants, then how many different combinations of shirt and pant can he wear?

Solution:

Correct Answer : 35

Five different shirts = S_1, S_2, S_3, S_4 and S_5
Seven different pants = P_1, P_2, P_3, P_4 and P_5
He can wear S_1 shirt with any one of the given 7 pants i.e. total 7 combinations.
Similarly, he can wear S2 shirt with any one of the 7 pants, again total 7 combinations.
Hence, we will get 7 combinations with each of the remaining shirts.
∴ Total combinations = 7 × 5 = 35.

FeedBack

Q.73

In a triangle ABC, AD divides BC in two equal parts. If BE divides AD in the ratio of 1 : 2 such that AE:ED =1:2 and is further extended to meet AC at F, then the area of triangle AEB is what percent of the area of quadrilateral DEFC?

1 ○ **36%**

2 ○ **35.7%**

3 ○ **42.84%**

4 ○ **44.44%**

Solution:

Correct Answer : 2
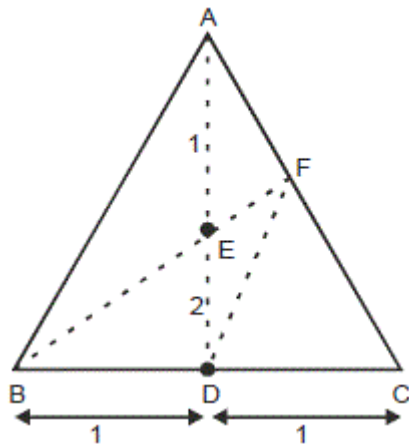
Let Ar ΔABC = 120 sq. unit.
Ar ΔADB = Ar ΔADC = 60 sq. units
Ar ΔAEB = 20 Ar ΔBED = 40 sq. units
Let Ar ΔAEF = x, Ar ΔDEF = 2x
Ar ΔBDF = Ar ΔDFC = 40 + 2x
Ar ΔAEF + Ar ΔEFD + Ar ΔDFC = Ar ΔADC
x + 2x + 2x + 40 = 60
$\quad$ 5x = 20
$\quad$ x = 4
Ar ΔAEB = 20 sq. units
Ar quadrilateral DEFC = 48 + 8 = 56 sq. units

Required % = $\dfrac{20}{56} \times 100 = \dfrac{5}{14} \times 100$ = 35.7%.

FeedBack

Q.74

Fresh grapes contain 84% water while raisins contain 20% water. How many kilograms of raisins can be made from 80 kg of fresh grapes?

1 ○ **16**

2 ○ **18**

3 ○ **20**

4 ○ **22**

Solution:

Correct Answer : 1

Raisins are made from fresh grapes and percentage of water is different in both.
But the percentage of pulp will remain same.
In 80 kg of lunch grapes, percentage of water is 84%
∴ Pulp % = 16%
In raisins, water is 20% so, pulp is 80%

$$\Rightarrow \frac{16}{100} \times 80 = \frac{80}{100} \times y \quad \text{(where y is the amount of raisins made from 80 kg of fresh grapes)}$$

$\Rightarrow$ y = 16 kg.

FeedBack

Q.75

A certain proper fraction, greater than 0, when expressed in its simplest form has its numerator 14 less than thrice its denominator. If the value of the fraction is the least possible, then what is its denominator?

Solution:

Correct Answer : 5

Let the denominator be 'a'

∴ fraction = $\dfrac{3a - 14}{a}$

the fraction is +ve only if a ≥ 5.
∴ Possible fractions are 1/5, 4/6, for a = 5, 6, 7 in which the least value is 1/5.
∴ Possible denominator = 5.

FeedBack

Q.76

ABC is a right-angled triangle where ∠A = 90° and ∠B = 60°. What is the ratio of the circumradius of the triangle to the side AC?

1 ○ **2 : √3**

2 ○ **1 : √3**

3 ○ **1 : 2**

4 ○ **2 : 3**

Solution:

Correct Answer : 2
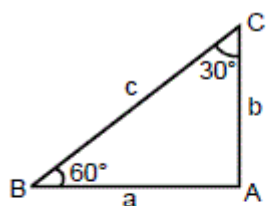
Using sine rule: $\dfrac{\sin 90°}{c} = \dfrac{\sin 60°}{b} = \dfrac{\sin 30°}{a} \Rightarrow \dfrac{1}{c} = \dfrac{\sqrt{3}}{2b} = \dfrac{1}{2a} \Rightarrow a:b:c = 1:\sqrt{3}:2$

Now, circumradius of right angled triangle BAC $= \dfrac{c}{2}$

$\therefore \dfrac{\text{Circumradius}}{AC} = \dfrac{c}{2b} = \dfrac{2}{2 \times \sqrt{3}} = 1:\sqrt{3}$

FeedBack

Q.77

Kumar plays a game in which a fair dice is rolled by him. Whenever 1 shows up on the dice he receives Rs. 50, when 3 shows up he receives Rs. 75 and when 5 shows up he has to pay Rs. 30 to the other player. For the game, he rolled the dice for 10 times and every time he rolled, only 1, 3 or 5 showed up. If he initially had no money and had a total of Rs. 360 at the end of the game, then find the number of times he received Rs. 75.

1 ○ **2**

2 ○ **4**

3 ○ **3**

4 ○ **1**

Solution:

Correct Answer : 2

Let one, three, five occur x, y, z times respectively

∴ x + y + z = 10   ...(1)

& 50x + 75y − 30z = 360

i.e. 10x + 15y − 6z = 72   ...(2)

eliminating z from (1) & (2) we get,

10x + 15y − 6(10 − x − y) = 72   ...(3)

16x + 21y = 132

$\text{Rem}\left(\dfrac{132}{16}\right) = 4$

$\therefore \text{Rem}\left(\dfrac{54}{16}\right) = 4$

i.e. 54 = 16y_1 + 4

$\text{Rem} = \dfrac{y_1}{5} = 1$

y_1 = 1, 6, 11...   &   y = 4, 20, 36, ...

when y = 4 we get x = 3 & z = 3

Kumar received Rs.75   4 times

Alternative method:

Let one, three, five occur x, y, z time respectively.

Put x = 3, y = 4, z = 3

Then the total amount he had at the end of the game = 3 × 50 + 4 × 75 − 3 × 30 = 360

Hence, he received Ra. 75, 4 times.

> FeedBack

Q.78

P, Q and R started a business with investing Rs. 10 lacs, Rs. 15 lacs and Rs. 20 lacs respectively. They decided that they would share the 60% of the profit equally among themselves and the rest would be divided in the ratio of their investments. If the difference between the profits of Q and R is Rs.12000, then find the total share (in Rs.) of P in the profit.

1 ○ **0.78 lacs**

2 ○ **1 lacs**

3 ○ **1.5 lacs**

4 ○ **0.92 lacs**

Solution:

Correct Answer : 1

As P, Q and R share 60% of profit in equal proportion so everyone will receive 20% of profit. Further they will receive some interest as per their capital. So, the difference of share of Q and R is 12000.

So $\frac{a}{100} \times 20L - \frac{a}{100}15L = 12000$

$\frac{a}{100} \times 5L = 12000$

$a = \frac{12000 \times 1001}{500000} = 2.4\%.$

So, the total interest share will be $(10 + 15 + 20) \times \frac{2.4}{100} = 84000.$

So 84000 is 40% of profit

Total profit = $T \times \frac{40}{100} = 84000$

T = 2.1 Lacs.

Alternative method:

	P	Q	R
Capital :	10	15	20
	2 :	3 :	4

60% of the profit will be equally divided among them and rest 40% will be divided in the ratio of their investment.

$\therefore \frac{40}{100} \times (2x + 3x + 4x) = \frac{18x}{5}.$

⟹ Difference between profits of Q and R is Rs. 12000

$\therefore \frac{4}{9} \times \frac{18x}{5} - \frac{3}{9} \times \frac{18x}{5} = 12000 \Rightarrow x = 30,000$

$\therefore$ Total profit earned by P = $\frac{2}{9} \times \frac{18x}{5} + \frac{9x}{5}$

(∵ 60% of the profit i.e. $\frac{60}{100} \times 9x = \frac{27x}{5}$ would be divided equally, so each gets $\frac{9x}{5}$)

$= \frac{13x}{5} = \frac{13}{5} \times 30,000 = 78000$ or 0.78 lacs.

FeedBack

Q.79

If $\log_{2\sqrt{10}} (x^2 - 6x + 45) = 2$, then which of the following is the value of x?

1 ○ **1**

2 ○ **4**

3 ○ **2**

4 ○ **Both (1) and (2)**

Solution:

Correct Answer : 1

$$\log_{2\sqrt{10}}(x^2 - 6x + 45) = 2$$

$$\log_{2\sqrt{10}}(x^2 - 6x + 45) = 2\log_{2\sqrt{10}} 2\sqrt{10} = \log_{2\sqrt{10}} = \log_{2\sqrt{10}}(2\sqrt{10})^2$$

$$\Rightarrow \quad x^2 - 6x + 45 = 40$$
$$x^2 - 6x + 5 = 0$$
$$\Rightarrow \quad x = 1, 5.$$

FeedBack

Q.80

How many 3-digit factors of A, where A = $2^6 \times 3^7 \times 5^8$, are multiple of 120?

Solution:

Correct Answer : 7

3-digit multiples of 120 are :
120 × 1
120 × 2
120 × 3
120 × 4
120 × 5
120 × 6
120 × 7
120 × 8
Out of the 8 multiples, only (120 × 7) is not a factor of A. Hence there are 7 factors of 3-digits.

Ans : ⑦

FeedBack

Q.81

Five men and 2 women can finish a job in 8 days while two men and one woman can finish the same job in 18 days. In how many days can nine men finish the same work?

Solution:

Correct Answer : 8

Let each man and woman do m and w units/day respectively.
(5m + 2w) 8 = (2 m + w) 18
w = 2m
As 5 men and 2 women can do a job in 8 days which is same as 9 men. Hence,
in 8 days they will finish the work.

FeedBack

Q.82

If $P = x^2 + 5y^2 - 4xy + 6y + 29$ where x and y are integers such that $-8 \le y \le 1$ and $-3 \le x \le 2$, then which of the following is always true?

1 ○ P can never be more than 270

2 ○ P can never be more than 301

3 ○ P can never be less than 29

4 ○ P can never be less than 22

Solution:

Correct Answer : 4

$P = x^2 + 5y^2 - 4xy + 6y + 29$
$= (x - 2y)^2 + (y + 3)^2 + 20$
For minimum value of P, put $y = -2$ & $x = -3 \Rightarrow P_{min} = 22$
For maximum value of P, put $y = -8$ & $x = 2 \Rightarrow P_{max} = 369$

FeedBack

🔖 Bookmark

🔍 Answer key/Solution

Q.83

What is the maximum number of coins that can be placed on squares in an 8x8 chessboard such that each row, each column, and each long diagonal contains at most 4 coins? (Note: Only 1 coin is allowed per square.)

1 ○ 16

2 ○ 28

3 ○ 31

4 ○ 32

Solution:

Correct Answer : 4

Since at most 4 coins can be in each of 8 rows, there can't be more than 8 × 4 = 32 stones on the board. Thus, if we can show that 32 coins is possible, then 32 must be the maximum number of coins possible.
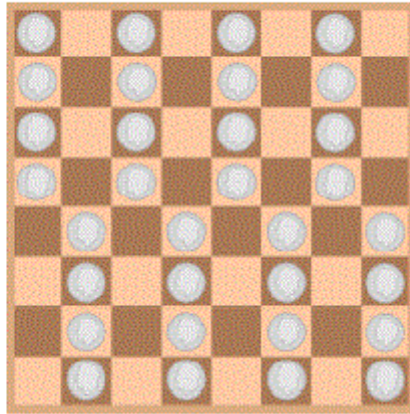
FeedBack

Q.84

A student started writing all Natural numbers starting with 1 on the blackboard and wrote upto 671. Which digit did he write for the minimum number of times?

1 ○ **7**

2 ○ **8**

3 ○ **9**

4 ○ **None of these**

Solution:

Correct Answer : 4

He wrote the digit 0 (Zero) least number of times. In every hundred numbers, zero is the only digit written least number of times.

FeedBack

Q.85

If x, y and z are positive real numbers, then which of the following is true?

1 ○ $x^2 + y^2 + z^2 \geq xy + yz + zx$

2 ○ $(x + y)(y + z)(z + x) \geq 8xyz$

3 ◯ (1/x) + (x/xy) > 2/(x + y)

4 ◯ All of the above

Solution:

Correct Answer : 4

AM ≥ Gm ≥ HM

Option (1):

$$\frac{x^2+y^2}{2} \ge \sqrt{x^2y^2}$$

$$\therefore x^2 + y^2 \ge 2xy$$

Similarly, we have $x^2 + z^2 \ge 2zx$

$y^2 + z^2 \ge 2yz$

Adding these 3 identities

we get $2(x^2 + y^2 + z^2) \ge 2(xy + yz + zx)$

$\therefore x^2 + y^2 + z^2 \ge xy + yz + zx$

$\therefore$ (1) is true

Option (2):

$$\frac{x+y}{2} \ge \sqrt{xy}$$

$$x+y \ge 2\sqrt{xy}$$

$$\Rightarrow z+y \ge 2\sqrt{yz}$$

$$z+x \ge 2\sqrt{zx}$$

On multiplying these 3, we get $(x + y)(y + z)(z + x) \ge 8x \cdot y \cdot z$

$\therefore$ (2) is also true

Option (3):

$x^2 + y^2 > 0$

$$\frac{x+y}{xy} > \frac{2}{x+y}$$

i.e. $\dfrac{1}{x}+\dfrac{1}{y} > \dfrac{2}{x+y}$

$\therefore$ (3) is correct.

Hence, all of the above options are correct.

FeedBack

Q.86

Ranbir started travelling from Delhi to Jaipur at 10 am and Deepika started at 1 pm from Jaipur to Delhi. They met at 2 pm in between and reached their respective destination at the same time. At what time did they reach their destination?
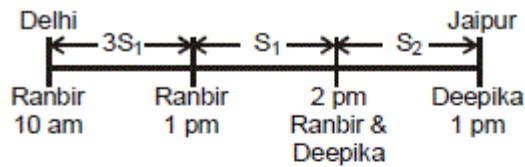
1 ◯ 3 pm

2 ◯ 4 pm

3 ◯ 5 pm

4 ◯ 6 pm

Solution:

Correct Answer : 2

```
Delhi                          Jaipur
 ⊢← 3S₁ →⊬← S₁ →⊬← S₂ →⊣
Ranbir      Ranbir    2 pm      Deepika
10 am       1 pm      Ranbir &  1 pm
                      Deepika
```

Let speed of Ranbir and Deepika be S_1 and S_2 respectively. After meeting at 2 pm, they will take equal time to reach their respective destination as they reached at the same time.

$$\frac{S_2}{S_1} = \frac{4S_1}{S_2}$$

$$\frac{S_2^2}{S_1^2} = \frac{4}{1} \Rightarrow \frac{S_2}{S_1} = \frac{2}{1}$$

Further, time taken to reach after 2 pm is 2 hrs. They will arrive at 4 pm.

FeedBack

Q.87

A, B, C, D and E takes 30 days, 20 days, 15 days, 12 days and 60 days respectively to do the same amount of work. They are divided into 2 groups such that one group took twice the amount of time taken by the other group, to do the same amount of work. How many such pairs of groups are possible?

1 ○ **1**

2 ○ **2**

3 ○ **3**

4 ○ **4**

Solution:

Correct Answer : 3

Let work = LCM (30, 20, 15, 12, 60) units = 60 units
A → 2 units/day
B → 3 units/day
C → 4 units/day
D → 5 units/day
E → 1 unit/day
Total → 15 units/day
If one group takes twice the amount of time taken by the other group, that means the ratio of their efficiencies is 1 : 2 i.e

Group I	Group II
5 Units/day	10 Units/day
A & B	C, D & E
C & E	A, B, C & D
D	A, B, C and E

Ans : (3) ‭3 pairs‬

FeedBack

Q.88

A ball was dropped from a height of 36 m above the ground. The ball rebounds to 1/3rd of the height from where it falls. If it continues to rebound in this manner, then find the distance covered by the ball.

Solution:

Correct Answer : 72

The height to which ball rebonds after first fall $= 36\left(\dfrac{1}{3}\right)$ = 12m, the second times it falls from 12m

∴ Distance covered after 2nd fall

$36\left(\dfrac{1}{3}\right)\left(\dfrac{1}{3}\right) = 4m$

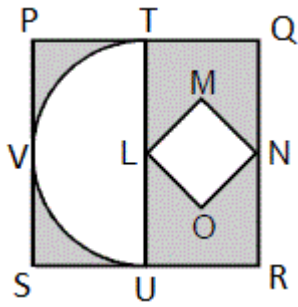∴ Total dist = 36 + 12 + 12 + 4 + 4 + ... + ∞
= (36 + 12 + 4 + ...∞) + (12 + 4 + ...∞)

$= \dfrac{36}{1-\dfrac{1}{3}} + \dfrac{12}{1-\dfrac{1}{3}} = 72m$

FeedBack

Q.89

In the figure given below, PQRS is a square of side 28 units. T and U are mid-points of sides PQ and RS respectively. TVU is a semicircle whose diameter is TU. If LMNO is a square, then what is the area (in square units) of the shaded region?

1 ○ **392**

2 ○ **378**

3 ○ **406**

4 ○ **196**

Solution:

Correct Answer : 2

🔖 **Bookmark**

🔍 **Answer key/Solution**

TVU is a semi-circle whose diameter is TV.
∴ Radius = TL = LU = VL = 14 units.
⇒ LN, diagonal of a square = 14 units.
$\sqrt{2}s = 14$ ('s' is the side of the square LMNO)

s = $7\sqrt{2}$ units
∴ Area of the shaded region = Area of the square PQRS – (Area of semicircle TVU + Area of the square LMNO)

$= (28)^2 - \dfrac{22}{7 \times 2} \times (14)^2 - (7\sqrt{2})^2$ = 784 – 308 – 98 = 378.

FeedBack

Q.90

If f(x) = mx + n and f(f(f(x))) = 8(x + 7), then find the value of (3m + 2n).

1 ○ **20**

2 ○ **35**

3 ○ **22**

4 ○ **30**

Solution:

Correct Answer : 3

f(x) = mx + n
f(f(x)) = m(mx + n) + n = m^2x + mn + n
f(f(f(x))) = m(m^2x + mn + n) + n = 8(x + 7)
⟹ m^3x + m^2n + mn + n = 8x + 56
Comparing both sides, we get
m^3 = 8 and m^2n + mn + n = 56
⟹ m = 2, n = 8
∴ The value of 3m + 2n = 3 × 2 + 2 × 8 = 22

FeedBack

Q.91

If $x : y = 2 : 5$ find the value of $\left(\dfrac{3x^2 + xy}{y^2 - x^2} \right)$

1 ○ **21/22**

2 ○ **22/21**

3 ○ **44/41**

4 ○ **None of these**

Solution:

Correct Answer : 2

Put x = 2 and y = 5

$\therefore \dfrac{3x^2 + xy}{y^2 - x^2} = \dfrac{3x(2)^2 + 2 \times 5}{5^2 - 2^2} = \dfrac{22}{21}$.

FeedBack

Q.92
If the average of 36 numbers is 25, then how many minimum numbers from the set {47, 48, 49, ..., 77, 78} should be added so that the average moves to 30?

1 ○ **7**

2 ○ **6**

3 ○ **5**

4 ○ **4**

Solution:

Correct Answer : 4

Sum of 36 numbers is 36 × 25 = 900.

to make the average 30, I have to add x more numbers so (36 + x) × 30 = 1080 + 30x

so sum of rest should carry 180 extra value other than their average i.e. 30. To make it by minimum numbers we have to add values with maximum increase in average.

So we add 78(48 + 30), 77(47 + 30), 76(46 + 30) and 69(39 + 30) with 4 values.

FeedBack

Q.93

What is the sum of all two-digit numbers that gives a remainder of 3 when divided by 7?

Solution:

Correct Answer : 676

The number series will be 10, 17, 24, 31, ... 94. It will be an arithmetic progression series.
Formula : S_n = n/2[first term + last term]
S_n = 13/2[10 + 94] = 676.

FeedBack

Q.94

If P and Q are two points on the graph of the function |x| + 2|y| = 15, then what is the maximum possible value of the distance between P and Q?
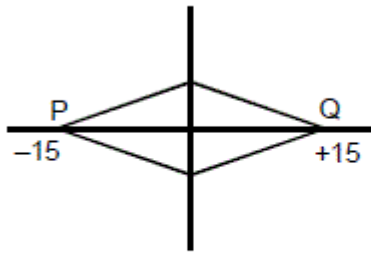
1 ○ **15**

2 ○ **35**

3 ○ **25**

4 ○ **30**

Solution:

Correct Answer : 4

The graph of the following function is:

$|x| + 2|y| = 15$

At $y = 0$, $-15 \leq x \leq 15$

∴ Maximum possible distance between P and Q from the figure is $15 + 15 = 30$

FeedBack

Q.95

Two runners start running on a circular track at the same time from the same point endlessly. Which of the following can be the ratio of their speed such that the point which is diametrically opposite to the starting point is one of their meeting points?

1 ○ **2 : 7**

2 ○ **3 : 11**

3 ○ **5 : 8**

4 ○ **3 : 8**

Solution:

Correct Answer : 2

If the two runners run on a circular track and of the points at which they meet is diametrically opposite to the starting point, then the sum or difference of the values of the ratio of their speed should be even depending they are running in opposite direction or same direction. Only in option (2), the sum of $3 + 11 = 14$ is even.

FeedBack

Q.96

If in a GP, the 5th term is 8 times the second term, and sum of its 1st, 3rd and 6th terms is 111, then what is the 7th term.

1 ○ **192**

2 ○ **208**

3 ○ **224**

4 ○ **216**

Solution:

Correct Answer : 1

$t_n = ar^{n-1}$
$ar^4 = 8(ar)$
$\Rightarrow r^3 = 8$
$\Rightarrow r = 2$ ...(1)
$a + ar^2 + ar^5 = 111$
$a(1 + r^2 + r^5) = 111$ ...(2)
Putting r = 2, we get a = 3
$\therefore t_7 = ar^6 = 3(2^6) = 192$.

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🔍 Answer key/Solution

Q.97

If 3 lies between the roots of the quadratic equation $x^2 - ax + a^2 - a - 14 = 0$, then for how many integral values of a does this holds true?
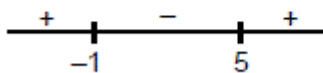
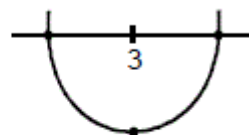1 ○ **4**

2 ○ **more than 4**

3 ○ **2**

4 ○ **1**

Solution:

Correct Answer : 2

At x = 3, the given equation is less than zero
$\therefore (3)^2 - a(3) + a^2 - a - 14 < 0$
$9 - 3a + a^2 - a - 14 < 0$
$a^2 - 4a - 5 < 0$
$(a - 5)(a + 1) < 0$

So, for more than four values of a; they given condition holds true.

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🔍 Answer key/Solution

Q.98

M, the manufacturer makes as many toys as the price per toy everyday and sells all his toys at a profit of Rs. 10 per toy thereby making a profit of 5% at the end of the day. Find the number of toys he makes per day.

1 ○ **100**

2 ○ **200**

3 ○ **300**

4 ○ **150**

Solution:

Correct Answer : 2

Let him make x toys per day,
C.P = Rs. x per toy,
∴ Total CP = x² & SP = x + 10 per toy
∴ Total SP = x(x + 10)

$$\therefore \% \text{ profit} = \frac{SP - CP}{CP} \times 100$$

$$= \frac{x(x+10) - x^2}{x^2} \times 100 = 5$$

$$x = \frac{100 \times 10}{5} = 200$$

∴ x = 200.

[FeedBack]

Q.99

A sum of money amount to Rs. 12000 in 5 years and Rs. 13000 in 7 years when invested under SI. Find the amount (in Rs.) invested.

Solution:

Correct Answer : 9500

Two years SI = 1000 so of 1 year = 500
For 5 years, SI = 2500
Amount after 5 years = 12000
Principal = 12000 − 2500 = Rs. 9500.

[FeedBack]

Q.100

Which is more likely?

A: You roll two dice 5 times and, every time, one of the two comes up as 1 and the other as 6.
B: You roll 10 dice all at once. 5 come up as 2s and the other 5 come up as 5s.
C: You roll 1 dice ten times, and 3 come up five times and 4 come up the remaining five times.

Assume the dice are standard, six-sided, and fair.

1 ○ **Situation A**

2 ○ **Situation B**

3 ○ **Situations B and C are equally likely**

4 ○ **All situations are equally likely**

Solution:

Correct Answer : 3

A: $\{(1/6) \times (1/6) \times 2!\}^5 = 32/6^{10}$
B: $^{10}C_5 \times (1/6)^{10} = 252/6^{10}$
C: $^{10}C_5 \times (1/6)^{10} = 252/6^{10}$
Clearly, B and C are equally likely.

FeedBack

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🔍 **Answer key/Solution**