Pabitra Sir Classes

Dream, Aim, Achieve

Personal guidance center for CAT, GMAT preparation

XAT 2020 Question with Answer key

Contact

www.pabitrasirclasses.com 9851078349

www.test.pabitrasirclasses.com 7003948466

XAT 2020 English

Q. A map is a useful metaphor for our brain when talking about _____ because at its most basic level our brain_____to be our atlas of sorts, a system of routes_____to navigate us toward just one destination: staying alive! From the options below, choose the set that MOST appropriately fills up the blanks.

1. Perception, evolved, designed
2. Understanding, progressed, shaped
3. Connections, changed, molded
4. Design, developed, shaped
5. Comprehension, metamorphosed, designed

Answer: A

Q._____, medicine has been operated by trial and error, in other words,_____. We know by now that there can be entirely_____connections between symptoms and treatment, and some medications succeed in medical trials for mere random reasons. From the options below, choose the one that MOST appropriately fills up the blanks.

1. Formerly, randomly, accidental
2. Traditionally, analytically, casual
3. Initially, statistically, unexpected
4. Periodically, logically, arbitrary
5. Historically, arbitrarily, fortuitous

Answer: E

Q. Read the following sentences and answer the question that follows:
1. I have good knowledge of German.

2. Except for Rajiv, everybody was there.
3. Whole Delhi was celebrating Independence Day.
4. Neither the dog, nor is the cat responsible for this mess.
5. He knows to swim.
6. I look forward to seeing you.

Which of the above are grammatically INCORRECT?

A. 2,4,6
B. 4,5,6
C. 1,3,5
D. 3,5,6
E. 1,2,5

Answer: C

Q. Which of the following is a grammatically CORRECT sentence?

A. You had better told her everything, or else you will lose a friend.
B. You had better told her everything, or else you would lose a friend.
C. You had better tell her everything, or else you will lose a friend.
D. You better had tell her everything, or else you will lose a friend.
E. You better had tell her everything, or else you would lose a friend.

Answer: C

Once, during a concert of cathedral organ music, as I sat getting gooseflesh amid that tsunami of sound, I was struck with a thought: for a medieval peasant, this must have been the loudest human-made sound they ever experienced, awe-inspiring in now-unimaginable ways. No wonder they signed up for the religion being proffered. And now we are constantly pummeled with sounds that dwarf quaint organs. Once, hunter-gatherers might chance upon honey from a beehive and thus briefly satisfy a hardwired food craving. And now we have hundreds of carefully designed commercial foods that supply a burst of sensation unmatched by some lowly natural food. Once, we had lives that, amid considerable privation, also offered numerous subtle, hard-won pleasures. And now we have drugs that cause spasms of pleasure and dopamine release a thousandfold higher than anything stimulated in our old drug-free world.

An emptiness comes from this combination of over-the-top nonnatural sources of reward and the inevitability of habituation; this is because unnaturally strong explosions of synthetic experience and sensation and pleasure evoke unnaturally strong degrees of habituation. This has two consequences. First, soon we barely notice the fleeting whispers of pleasure caused by leaves in autumn, or by the lingering glance of the right person, or by the promise of reward following a difficult, worthy task. And the other consequence is that we eventually habituate to even those artificial deluges of intensity. If we were designed by engineers, as we consumed more, we'd desire less. But our frequent human tragedy is that the more we consume, the hungrier we get. More and faster and stronger. What was an unexpected pleasure yesterday is what we feel entitled to today, and what won't be enough tomorrow.

Question 1
Which of the following options BEST reflects the author's understanding of human perception of pleasure?

A. Pleasure comes from whatever we are exposed to for the first time
B. Pleasure comes from what we are deprived of
C. Pleasure comes from what appears to be a valuable discovery or invention
D. Pleasure comes from what is perceived to be extraordinary
E. Pleasure comes from what we are accustomed to

Answer: D

Question 2
Going by the author, which of the following options BEST answers the question "how can one sustain the pleasure derived from any experience?"

A. Training to appreciate sweet whispers and fleeting moments of joy to sustain pleasure
B. Periodic displeasure with synthetic experiences leads to sustaining pleasure
C. The harder to replicate, the more sustainable the pleasure from that experience
D. The closer the experience is to nature, the more sustainable it is
E. Awareness of a habituation moment helps sustain pleasure

Answer: C

Question 3
Which of the following options BEST describes "emptiness" as described in the passage?

A. A feeling, evoked by the carefully designed commercial foods, alluring us to them
B. A feeling of absence of sources of pleasure when extant sources are in abundance
C. Yearning for newer sources of pleasure when extant sources are in abundance
D. A feeling of weariness around extant sources of pleasure that are in abundance
E. The inevitability of habituation that one gets from repeated consumption of man-made foods or drugs

Answer: B

Q. "People who work in law, hotel and food services, and technology were found the most likely to skip breakfast daily, according to a recent study. As for people who do eat breakfast and prefer a savoury type (like an egg), the study found they tend to make more money, be night owls and prefer cats over dogs. If you prefer a sweet breakfast like a donut you tend to be a morning person, like romcoms and are a dog person".
Which of the following can be BEST inferred based on the above paragraph?

A. IT professionals, who eat eggs for breakfast, are more likely to make more money than their counterparts who eat donuts for breakfast.
B. Lawyers, who eat savory breakfast daily, make more money than those lawyers who have early breakfast daily.
C. Hoteliers who eat regular breakfast are more likely to make more money than those who watch romcoms regularly.
D. Among regular breakfast eaters, early risers have more sugar in their breakfast than late risers.
E. A preference for cats as pets over dogs, usually, is a result of eating eggs for breakfast daily.

Answer: A

Some say the world will end in fire, Some say in ice.
From what I've tasted of desire I hold with those who favor fire. But, if it had to perish twice,
I think I know enough of hate To know that for destruction ice Is also great And would suffice.
Question 1
Which of the following statements will the poet agree with the MOST?

A. Greed can destroy one's world
B. Both desire and hate can create self-doubt.
C. Hatred destroys what desire cannot.
D. Desire overpowers hatred to control humans.
E. Ambition is more powerful than envy.

Answer: A

Question 2
Which is the MOST UNSUITABLE title of the poem?

A. The Annihilation Hypothesis
B. Love and Detest- A Tale of Destruction
C. How the World Ends
D. Destruction by Fire and Ice
E. Emotional Destruction of the World

Answer: E

Q. In a 2017 survey of 3,915 American workers, my colleagues and I found that workers report experiencing a sizable "voice gap" at work — that is, a gap between how much say or influence they feel they ought to have and how much they actually have — on topics such as wages, working conditions, fair treatment, and input into how they do their work.
And now a second study, I have just completed with a new team, finds that today's workers want forms of voice and representation that go well beyond traditional unions.
Based on the above paragraph, which of the following options would you agree

with the MOST?

A. The first study defines the concept and the second study uses the concept in a specific context.
B. The first study shows the intensity of the problem and the second study shows limitations of the existing solutions
C. The first study shows the frustration of the American workers and the second study shows the inability of unions in addressing them.
D. The first study focuses on the need for fair representation and the second study discusses forms of representation.
E. The first study highlights the existence of the problem and the second study highlights the need for new ways of solving it.

Answer: E

There is nothing spectacularly new in the situation. Most old-societies-turned-young-nation-states learn to live in a world dominated by the psychology and culture of exile. For some, the twentieth century has been a century of refugees. Others like Hannah Arendt have identified refugees as virtually a new species of human being who have come to symbolize the distinctive violence of our time. Refugees as contemporary symbols, however, proclaim something more than a pathology of a global nation-state system. They also represent a state of mind, a form of psychological displacement that has become endemic to modernizing societies. One does not even have to cross national frontiers to become a refugee; one can choose to be seduced by the 'pull' of self-induced displacement rather than be 'pushed' by an oppressive or violent system at home. It is this changed status of territoriality in human life that explains why, in immigrant societies like the United States, the metaphor of exile is now jaded. Some have already begun to argue that human beings need not have a 'home' as it has been traditionally understood in large parts of the world, that the idea itself is a red herring. While the idea of exile begins to appear trite in intellectual circles, an increasingly large proportion of the world is getting reconciled to living with the labile sense of self. Exile no longer seems a pathology or an affliction. Displacement and the psychology of exile are in; cultural continuities and settled communities are out; there is a touch of ennui about them.

Question 1

Which of the following options is CLOSEST to the meaning of the phrase "labile sense of self"?

A. History does not confine the self.
B. Humans are not meant to be shunted around.
C. The self adapts to a new geography.
D. Geography does not imprison the self.
E. The self does not belong to a particular geography.

Answer: C

Question 2
Based on the passage, which of the following will the author DISAGREE the MOST with?

A. One does not have to cross frontiers to become a refugee
B. Intellectuals find the notion of exile irrelevant.
C. Refugees symbolize exploitation and abuse of our times.
D. Being a refugee is a state of mind.
E. A feeling of alienation in modernizing societies is a common phenomenon.

Answer: C

Question 3
Project Affected Families (PAF) are those that are physically displaced due to construction of a large project (dam, factory etc.) in an area where the PAF traditionally resided.
With insights from the passage, what would a project proponent, dealing with PAF, reading the following options agree the MOST with?

A. PAF as a concept is irrelevant since human displacement is a historical phenomenon.
B. Industry and government should care equally about profits and people.
C. Don't worry about PAF, they will eventually resettle and rehabilitate
D. Emotional estrangement of PAF is not an area of concern.
E. PAF do not have a labile sense of self.

Answer: D

Q. In Australia, jellyfish are most common between November and May. In Hawaii, jellyfish often show up on south-facing beaches eight days after a full moon. In the Mediterranean, blooms usually appear in the summer. Unfortunately for travellers, there is no worldwide database for recent jellyfish sightings, and tourism officials are sometimes reluctant to publicize jellyfish swarms out of fear that such news will scare off visitors.
Which of the following can be BEST concluded from the above paragraph?

A. Celestial bodies have an influence on jellyfish sightings.
B. Economic interests influence security advisories.
C. Tourism officials hide the truth about jellyfish sightings.
D. Seasonal variations in the marine temperature impact jellyfish sightings.
E. Tourists visiting north-facing beaches in Hawaii do not spot jellyfish.

Answer: A

Q. Global surface temperatures in 2019 are on track to be either the second or third warmest since records began in the mid-1800s, behind only 2016 and possibly 2017. On top of the long-term warming trend, temperatures in 2019 have been buoyed by a moderate El Niño event that is likely to persist through the rest of the year.
Which of the following statements can be BEST inferred based on the above paragraph?

A. El Niño event causes global surface temperatures to rise in the long-term.
B. A moderate El Niño event increases temperature more than a weak El Niño event.
C. El Niño event did not affect temperatures in 2016 and 2017.
D. The long-term trend of global surface temperatures is unrelated to El Niño.
E. Global surface temperatures are increasing at a constant rate for three years.

Answer: D

Q. If we can send a human to the Moon, why can't we build sustainable cities? Defeat cancer? Tackle climate change? So, go the rallying cries inspired by one of humanity's greatest achievements, the US effort that put Neil Armstrong and Buzz Aldrin on the Moon on 20 July 1969.
Which of the following statements, if true, BEST communicates the intent of the

paragraph?

A. America's moonshot was more about race to the moon and less about solving problems.
B. America's moonshot initiative was mainly a response to USSR's competing initiative
C. The reason we celebrate 1969 moonshot is precisely because nothing significant has been done in that domain since then.
D. Moonshot has a definitive ownership, whereas creating sustainable cities and curing cancer are public-good problems.
E. The complexity of developing sustainable cities and curing cancer is far more than sending a human to the moon.

Answer: E

Q. When asked what the politician will do for the nation's economy, he attacked the opponent by saying, "Look at that face! Would anyone vote for that? I mean, she's a woman, and I'm not supposed to say bad things, but really, folks, come on. Are we serious? Nevertheless, we're going to defeat ISIS. ISIS happened a number of years ago in a vacuum that was left because of bad judgment. And I will tell you, I will take care of ISIS."
Which of the following statements BEST describes the politician's intent?

A. To make an emotional appeal to the voters
B. To appeal to the macho voters and use fear as a tool to lure voters
C. To divert attention towards ISIS as compared to the economy
D. To make a sexist remark and share his concern about an important issue
E. To digress and argue that security is more important than economy

Answer: A

The nature of knowledge cannot survive unchanged within this context of general transformation. It can fit into the new channels, and become operational, only if learning is translated into quantities of information. We can predict that anything in the constituted body of knowledge that is not translatable in this way will be abandoned and that the direction of new research will be dictated by the possibility of its eventual results being translatable into computer language. The "producers" and users of knowledge must know, and will have to, possess the means of translating into these languages whatever

they want to invent or learn. Research on translating machines is already well advanced. Along with the hegemony of computers comes a certain logic, and therefore a certain set of prescriptions determining which statements are accepted as "knowledge" statements. We may thus expect a thorough exteriorisation of knowledge with respect to the "knower," at whatever point he or she may occupy in the knowledge process. The old principle that the acquisition of knowledge is indissociable from the training (Bildung) of minds, or even of individuals, is becoming obsolete and will become ever more so. The relationships of the suppliers and users of knowledge to the knowledge they supply and use is now tending, and will increasingly tend, to assume the form already taken by the relationship of commodity producers and consumers to the commodities they produce and consume – that is, the form of value. Knowledge is and will be produced in order to be sold, it is and will be consumed in order to be valorised in a new production: in both cases, the goal is exchange.
Knowledge ceases to be an end in itself, it loses its "use-value."

Question 1

Which of the following statements BEST captures the essence of the passage?

A. Knowledge shall no longer be evaluated by its truth but its commercial value.
B. Translation of knowledge into machine language exteriorises it.
C. Suppliers and users of knowledge have become its producers and consumers.
D. Knowledge shall be exclusively produced to be sold.
E. Market forces have taken over the process of knowledge production.

Answer: A

Question 2

Based on the passage, which of the following statements can be BEST inferred?

A. For knowledge to acquire an exchange-value, it should cease to have a use-value.
B. Acquisition of knowledge need no longer transform its recipient.
C. The locus of creation and accumulation of knowledge has shifted.
D. Knowledge as a transactional commodity is indispensable to productive power
E. Mental discipline is not necessary for learning anymore

Answer: B

Question 3

Which of the following options will the author agree the MOST with?

A. A daughter of a lawyer must become a lawyer.
B. A person with no passion for singing, if trained, will sing perfectly.
C. To get promoted, an unempathetic manager can learn to display empathy
D. To teach poetry, one must not be a poet.
E. MBA program has a high exchange-value but zero use-value.

Answer: C

It's as if someone were out there making up pointless jobs just for the sake of keeping us all working. And here, precisely, lies the mystery. In capitalism, this is precisely what is not supposed to happen. Sure, in the old inefficient socialist states like the Soviet Union, where employment was considered both a right and a sacred duty, the system made up as many jobs as it had to. (This is why in Soviet department stores it took three clerks to sell a piece of meat.) But, of course, this is the very sort of problem market competition is supposed to fix. According to economic theory, at least, the last thing a profit-seeking firm is going to do is shell out money to workers they don't really need to employ. Still, somehow, it happens. While corporations may engage in ruthless downsizing, the layoffs and speed-ups invariably fall on that class of people who are actually making, moving, fixing, and maintaining things. Through some strange alchemy no one can quite explain, the number of salaried paper pushers ultimately seems to expand, and more and more employees find themselves—not unlike Soviet workers, actually—working forty- or even fifty-hour weeks on paper but effectively working fifteen hours just as Keynes predicted, since the rest of their time is spent organizing or attending motivational seminars, updating their Facebook profiles, or downloading TV box sets. The answer clearly isn't economic: it's moral and political. The ruling class has figured out that a happy and productive population with free time on their hands is a mortal danger. (Think of what started to happen when this even began to be approximated in the sixties.) And, on the other hand, the feeling that work is a moral value in itself, and that anyone not willing to submit themselves to some kind of intense work discipline for most of their waking hours deserves nothing, is extraordinarily convenient for them.

Question 1

Which of the following options, if true, BEST makes the author's assertion on pointless jobs erroneous?

A. Workers who carry out pointless jobs are more loyal to the organization than others
B. Pointless jobs add less value to the organization than the jobs of those who are making or fixing things.
C. Pointless jobs decrease the efficiency of the organization since they replace those who are making, fixing and moving things.
D. Organizations with a higher number of pointless jobs are more profitable than those with less.
E. Even though the rate of increase in pointless jobs is higher, their absolute number on an average is lower than that of meaningful jobs.

Answer: D

Question 2
Which of the following can be BEST inferred from the passage?

A. The ruling class abhors leisure so much that they encourage organizations to create unwanted jobs.
B. Keeping people employed for longer hours serves the plans of the ruling class.
C. Work as a moral right is the design of the ruling class to cut down on leisure
D. For political reasons, profit-making firms sometimes indulge in non-profitable decisions.
E. Pointless jobs are here to stay, regardless of whether they are necessary or not.

Answer: B

Question 3
Which of the following statements will BEST explain the principle underlying the theme of the passage?

A. Organizations that create more jobs are rewarded by the government for protecting political values.
B. Work is a moral value in itself.
C. People unwilling to submit to an intense work discipline deserve nothing.
D. Keynes predicted that a happy and productive workforce is a force for the good.
E. Peace and order in society require humans to be engaged in some activity most of the time, regardless of its meaninglessness.

Answer: E

Q. Go through the statements below and answer the question that follows:
P. Fast food intake for more than three times a week is associated with greater odds of atopic disorders such as asthma, eczema or rhinitis. Thus, it should be definitely and strictly controlled in children as it does no good.
Q. Regular junk food intake can lead to physical and psychological issues among children.
R. Lack of Vitamins such as A and C, and minerals such as magnesium and calcium, encourage the development of deficiency diseases and osteoporosis, as well as dental caries due to higher intake.
S. Junk food, which are rich in energy with lots of fat and sugar, are relatively low in other important nutrients such as protein, fiber, vitamins and minerals.
T. Emotional and self-esteem problems, along with chronic illnesses in later life due to obesity, are the issues associated with the junk food.
Which of the following combinations is the MOST logically ordered?

A. QSRTP
B. QRSPT
C. TQSRP
D. TSQRP
E. RSQPT

Answer: A

Q. Go through the statements below and answer the question that follows:
P. Surabhi's Instagram profile has 1.4 million followers. It is filled with pictures of her posing in different settings.
Q. In India, reports suggest that WhatsApp (Much more than Facebook or Twitter) is the primary tool for the dissemination of political communication.
R. Political campaigns pay social media companies to promote their content.
S. Political advertising on social media comes in many forms and remains underexamined in India.
T. Social media influencers are used for the dissemination of content. Which of the following combinations is the MOST logically ordered?

A. SQRTP

B. QRTPS
C. QRSTP
D. SRQTP
E. PRSTQ

Answer: D

Decision Making

Read the situation below and answer the 3 associated questions:
Vindhya, Shabnam and Amala are interning at a software organization as part of the requirement of their B-school curriculum. The organization has allotted each of them a project based on their area of specialization. In the first meeting with the HR head, they are informed of a PPO possibility (pre-placement offer, i.e., an offer to join the company after their MBA), based on their performance. All of them are eager to convert their internship into a job offer.
Each of them is assigned a mentor who evaluates the intern's performance along with the HR head.
Question 1
In the second week of her eight-week internship, Amala realizes that the project requires inputs from subjects she studied in her third trimester. However, during the third trimester, Amala was significantly distracted by an inter-college sports meet, affecting her grasp of the subjects.
Which of the following is the MOST appropriate way forward for Amala?

A. Amala should request her mentor to allocate a different project because of her limited familiarity with the inputs required.
B. Amala should disclose to the mentor her limited understanding of the required inputs and seek his suggestions.
C. Amala should seek Shabnam's help who performed well in the third trimester
D. Amala should realize that she may not get a PPO and so focus on networking with the experienced talent in the organization.
E. Amala, after studying the organization for a week, should design her own project and pitch it to her mentor.

Answer: B

Question 2
Vindhya's project is about understanding employee perception regarding the organization's HR policies. Against her own instinct, she is suggested by her mentor to interview only the good performers identified by his office because poor performers, he believes, usually crib against the policies.
Which of the following courses of action will BEST enable Vindhya to provide the organization with a complete picture?

A. Vindhya should completely comply with her mentor's suggestion
B. Vindhya should ignore her mentor's directive, collect data from all, but compile reports separately for the good performers and the poor performers.
C. Vindhya should report this restraint to the HR head requesting her immediate intervention in the project.
D. Vindhya should request the HR Head to allot her another mentor without divulging the reason
E. Vindhya should meet only those identified by her mentor, but also collect information from them as why their other colleagues are disgruntled.

Answer: E

Question 3
Shabnam, who is working on sales executives' work-life balance, has collected the following details about their frequent travels:

1. Frequent meetings help strengthen relationships with key customers.
2. Travelling has no effect on the personal lives of the sales executives as most of them are single
3. Travel enhances the financial health of the sales executives since their fixed salaries are low.
4. Frequent travel has no significant impact on market budget, given the current high margins from sales.
5. The sales executives have the autonomy to decide the frequency of their travel. Shabnam thinks that the frequency of travel is higher than required.

Which of the following combinations of the above reasons can enable Shabnam BEST

substantiate her thinking?

A. 1, 2 and 4
B. 2, 3 and 4
C. 3, 4 and 5
D. 2, 3 and 5
E. 1, 3 and 5

Answer: C

Read the situation below and answer the 3 associated questions:
A Multinational Company (MNC) sources pristine natural spring water from Bori, a village in Satpura mountains. The unprocessed natural spring water is directly bottled by the MNC. The company brands it as "Natural Spring Water" and sells at 50% premium vis-a-vis other brands that sell processed water.
The local panchayat, under the Panchayati Raj Act, 1992 controls the spring water usage. Hence, the company signed a 30-year contract with the panchayat for exclusive access to the spring water for business purposes. This contract contributes 50% to the panchayat's revenues besides providing 250 jobs in the panchayat. The spring also meets domestic and agricultural needs of the people of Bori and the surrounding villages.

Question 1
Chanchala owns a small parcel of farming land in Bori. She grows cannabis in some part of her land and earns a significant amount of money from it. Soon after the bottling plant was commissioned, Chanchala, instigated by a landlord with a vested interest, starts accusing the MNC of robbing her of water and impacting her livelihood. She threatens to take the MNC to court.
Which of the following options will BEST solve the MNC's problem?

A. Promise to employ Chanchala's 17-year-old son as he turns 18
B. Request the panchayat to excommunicate Chanchala for cultivating cannabis
C. Buy Chanchala's produce at a premium of 30% to the market price
D. Get the villagers employed by the MNC to persuade Chanchala not to sue
E. Compensate the monetary loss as perceived by Chanchala

Answer: D

Question 2
The MNC has spotted traces of chemicals in their fortnightly water quality analysis. The MNC realizes that this is due to the contaminated agricultural runoff, flowing into the spring from the nearby fields where farmers use pesticides and fertilizers. This requires an immediate solution. Which of the following options will BEST resolve the situation for the MNC?

A. Continue bottling the natural spring water without processing since the villagers drink it as it is
B. Since the customers trust the MNC to do what is good for them, remove the contaminants and continue to brand as "Natural Spring Water"
C. Rebrand "Natural Spring Water" as "Purified Spring Water" after removing the contaminants through charcoal filtering
D. Close down the bottling plant until the problem is resolved and inform the media that customer interests override profit concerns
E. Source water from an uncontaminated natural spring 150 kms away at an addition of 50% to the total cost

Answer: E

Question 3
The MNC is concerned about chemical contamination of the natural spring water due to the agricultural runoff with pesticides and fertilizers. The MNC is looking for a sustainable solution to this contamination. Which of the following courses of action will BEST solve the issue?

A. Negotiate with the Panchayat to gain control of the entire spring and provide alternate sources of irrigation for farming
B. Change branding from "Natural Spring Water" to "Processed Drinking Water"
C. Move to another state with unexploited natural springs
D. Coax the farmers in the natural spring's catchment to move to organic farming
E. Acquire all agricultural land in the natural spring's catchment and afforest them

Answer: D

Read the situation below and answer the 3 associated questions:
The Small Shop, selling computer peripherals, is the only one of its kind in the remote village of Turturunk. Because online purchases take two weeks or more to

arrive, The Small Shop is a quick stop for buying items such as pen drives and USB cables. Besides selling computer peripherals, The Small Shop also undertakes repairs of out-of-warranty products.

Question 1

The Small Shop which earlier recorded an annual increase of approximately 12% in revenues has been stagnating at 4% for the last three years, during which e-commerce sidelined brick and mortar outlets. The shop is struggling to increase profitability. In general, The Small Shop has been offering a discount on MRP to compete with e-commerce prices.

Which of the following is the BEST reason for The Small Shop NOT to reduce the current discount offered to the customers?

A. A large fading sign prominently placed behind the shop's cash counter reads "in business and in life, always be fair".
B. Recently customers from a nearby village have started shopping at The Small Shop for low-end peripherals, accounting for around 3% of the shop's total revenues.
C. To cover insurance costs, e-commerce has begun charging a delivery fee from last year.
D. A new resident who earlier worked in the computer hardware industry is contemplating starting a business in Turturunk.
E. Even though e-commerce offers a greater range of choices, villagers prefer buying readily available products from The Small Shop.

Answer: E

Question 2

The Small Shop wants to increase the variety of products sold, including expensive ones. However, it is averse to accumulating unsold products, specifically of the expensive kind.

Which of the following is the BEST option if The Small Shop wants to increase the variety of the products it sells?

A. The Small Shop should make an arrangement with a retailer of the nearest city. The shop can spare one of its employees once a week to procure the weekly requirements.
B. The Small Shop should focus only on low-end peripherals that currently contribute to 60% of its revenues.

C. The Small Shop should get suppliers to courier its requirements to the shop whenever needed. The suppliers require that The Small Shop orders a minimum quantity every month.
D. The Small Shop should acquire extra space at lower rentals available at a distance of three kilometres from its current location.
E. The Small Shop should focus exclusively on high-end peripherals which contribute to 10% of its revenues but 25% of its profits.

Answer: A

Question 3
An emerging brand offers a franchise to The Small Shop for repairing its products, on a condition that other brands are not to be repaired. Repairs currently account for 15% of its revenues.
Which of the following, if true, will BEST help The Small Shop to decide on the franchise?

A. **The Small Shop will have to send two of its employees for a three-month training if it wishes to be a franchisee. The emerging brand will bear the training cost.**
B. **The upcoming brand is very new and needs franchisees desperately.**
C. **Revenues from repairs are expected to increase by about 3-5 percent annually.**
D. **No big and reputed brand has shown any interest in franchising The Small Shop.**
E. **For the first three years, the emerging brand has offered to pay a fixed amount equal to the revenues earned from repairs the previous year.**

Answer: C

Read the situation below and answer the 3 associated questions:
When Deepti opened the package, she was aghast. She received cotton pillow covers instead of satin pillow covers, she had ordered. Deepti ordered them for her father from a popular e-commerce website that hosted products of many sellers. Confused, Deepti contacted the seller's office using the details given on the package. The seller's representative profusely regretted and promised to send the satin pillow covers at no extra cost. He added that Deepti need not return the cotton covers she received. Deepti happily accepted the deal.
A few days later, Deepti received another package from the seller. Unfortunately,

this package also contained cotton pillow covers. Completely disillusioned with the seller's professionalism, Deepti decided to put to use these cotton pillow covers also.

Question 1. A few days later, Deepti received an email from the e-commerce website, requesting her to share feedback about the seller. Deeply frustrated with the overall online purchasing experience, she deliberately ignored it.
Later that evening, over supper, her father opined that the balcony curtains needed to be changed. He suggested that they be bought from a local shop. "If something went wrong, we could at least yell at the seller," he added.
Deepti stared at her laptop and began writing her feedback. What would Deepti DEFINITELY achieve by giving feedback?

A. Prove a point to her father
B. Release her frustration
C. Coerce the e-commerce website to punish the seller
D. Instigate people against the seller
E. An act of social service

Answer: B

Question 2
In the feedback column, Deepti awarded 1-star out of the maximum 5 stars to the seller and described her negative experience. Later that evening, the sales head called and pleaded with her to retract her feedback and upgrade them to 5-star, as they had already fired the employee concerned. He appealed that they were a young organization and that their sales were getting badly affected.
Given the circumstances, what should be the IDEAL response?

A. She should retain the feedback but award 3-star as a consolation measure
B. She should stick to her feedback and the stars awarded since she reported only what had taken place.
C. She should retract the feedback and award 5-star as the seller has already punished the concerned employee.
D. She should order again with the same seller and share her renewed experience.
E. She should retract the feedback and award 5-star since sales are getting affected.

Answer: B

Question 3
After a few months, the sales head enquired, "In case you are using the cotton pillow covers and like them, kindly rate them on the e- commerce website. It will help us serve our customers better."
Later that evening, her father remarked, "You know, I really love these pillow covers though I am not sure why you bought so many of them".
Which of the following reasons gives Deepti the BEST rationale to ignore the sales head's request?

A. Acceding to the request will imply that she was wrong in ordering satin pillow covers in the first place
B. If the seller truly cared about customers, they should have shipped the satin pillow covers by now.
C. Her review will lack credibility since there is no proof that she purchased the product
D. Acceding to the request benefits just the seller while her sore experience remains.
E. Cotton pillow covers were delivered erroneously. Hence the seller does not deserve appreciation.

Answer: B

Read the situation below and answer the 3 associated questions:
Rakesh, who hailed from Dhanbad, worked in Jamshedpur with SPCIL, a government construction company. Although HR policies concerning job security & work-life balance attracted Rakesh to SPCIL, over time he found his work monotonous with no growth opportunities. However, the proximity to Dhanbad enabled him to visit his parents at his convenience.
Recently Rakesh applied to Grow and Prosper (G&P), a multinational company engaged in construction related operations, making inroads into many Indian states. G&P interviewed Rakesh and offered him three times his current salary at SPCIL.
Question 1
While considering G&P's offer, Rakesh pondered over the following facts:

1. A recent government policy made poor performance punishable by salary reduction or dismissal.

2. The first assignment at G&P is a bridge construction project in a village near Dhanbad.
3. With his current savings, Rakesh need not depend on regular income for at least six months.
4. Though an exemplary performer, Rakesh has hardly been recognized at SPCIL.
5. Based on the annual performance review at G&P, Rakesh will either earn double the salary or get fired. Which of the following combinations of the above facts will BEST help Rakesh decide on joining G&P?

A. 5, 4, 2
B. 1, 3, 4
C. 1, 4, 5
D. 2, 4, 3
E. 4, 3, 5

Answer: A

Question 2
While mulling over the offer, Rakesh consulted Manikandan, his trusted senior at SPCIL. Manikandan, who had friends in G&P, disclosed that it preferred government employees for its projects in Jharkhand, Bihar and Chhattisgarh. "Once the project is completed, G&P may not need your skills," observed Manikandan.
Which of the following, if true, will BEST enable Rakesh to decide on the offer?

A. During the interview, G&P quizzed if Rakesh would sustain his relationship with his former colleagues at SPCIL.
B. Through social media, Rakesh discovered that Manikandan's contact, who had left SPCIL to join G&P, is no longer with G&P.
C. Senior-level employees at G&P, who began their career in similar projects, are now confined to their desk at the head office for almost a decade.
D. As G&P also planned to enter two Southern states, it has decided to recruit people from those states.
E. Manikandan stopped both of his sons from taking up private-sector jobs, given his loyalty to the government.

Answer: C

Question 3
Rakesh, in his current job, came across incidences of bribing by private sector officials. He wondered if he might have to bribe government officials while at G&P.
He reflected on his interview with G&P:

1. **The interviewers were puzzled how Rakesh could manage his EMIs with his current income.**
2. **One interviewer was constantly probing how Rakesh managed to meet his project deadlines with little cooperation from his subordinates**
3. **What would you do if your project has a fortnight's deadline and it takes a month to obtain a permit?," asked another interviewer.**
4. **A question that intrigued Rakesh was, "Should a pack of dacoits share their loot with one of their gang, who had killed a bystander against their motto 'Thou shalt not kill'?"**

Which of the following sequences of the above statements is in the MOST appropriate DESCENDING order of bribing undertones?

A. **3, 4, 1 ,2**
B. 4, 3, 2, 1
C. 4, 1, 2, 3
D. 1, 3, 2, 4
E. 3, 1, 2, 4

Answer: E

Read the situation below and answer the 3 associated questions:
Two industrial towns, Jayanagar and Ramnagar, about 15 kms. apart, are similar in land area, population, ethnic diversity and per capita incomes.
Jagdeep Singh owns a bakery named Le Baguette in Jayanagar. He specializes in croissants, masala bread and whole wheat bread; eggless cakes are also a favorite. Among the four bakeries in Jayanagar, Jagdeep's bakery with a market share of 30% is second only to the oldest Le Croissant bakery whose market share is 40%.

Le Croissant commands a loyal customer base and does not offer eggless varieties.

Question 1
Jagdeep has decided to open a branch in Ramnagar. Which of the following facts about Ramnagar will BEST support his decision?

A. 3% of Le Baguette's current revenue comes from Ramnagar.
B. Jagdeep has managed to acquire a big space in Ramnagar at a nominal rent.
C. Before starting his own bakery, Jagdeep was supplying bread to most bakeries in Ramnagar.
D. Ramnagar is served by 4 bakeries, with the two largest bakeries having market shares of 55% and 25% respectively.
E. Le Croissant's Ramnagar branch struggles with a market share of 10%.

Answer: A

Question 2
Jagdeep wishes to open a 100% eggless branch in Ramnagar. To explore feasibility, he collected the following facts:

1. Eggless products account for 30% of Le Baguette's sales.
2. At least 20% of all bakery sales in Ramnagar is from eggless products
3. The eggless varieties of Le Baguette contain minute traces of egg.
4. Le Baguette currently makes 3% of its revenue from Ramnagar customers and all of it comes from eggless products.
5. . Le Croissant's Ramnagar branch struggles with a market share of 10%.
   From the combinations below, in the DESCENDING order of effectiveness, choose the one that BEST supports Jagdeep's decision.

A. 5, 2, 1
B. 2, 1, 3
C. 2, 4, 1
D. 4, 3, 2
E. 5, 4, 1

Answer: C

Question 3

From a newspaper, Jagdeep has learnt that Americans use their own ovens to bake ready-to-bake products, sold by some bakeries. This idea is apparently catching up in Indian metros as well.

Jagdeep wants to try this out in his bakery. He has gathered the following facts:

1. **US bakeries that also sell ready-to-bake products earned higher revenues compared to those that do not.**
2. **Around 7% of Jagdeep's regular customers own baking ovens in their homes.**
3. **The sale of baking ovens in India is forecast to increase by 12% every year, for the next three years.**
4. **50% of Jagdeep's regular customers are fulltime working couples.**
5. **In Indian metros, ready-to-bake products give higher profit margins compared to finished products.**

Select the BEST of the following sequences of the above facts, in DESCENDING order of effectiveness, to support Jagdeep.

A. **2, 5, 1, 3, 4**
B. 3, 4, 5, 1, 2
C. 1, 5, 3, 2, 4
D. 2, 3, 5, 1, 4
E. 3, 2, 1, 4, 5

Answer: D

Read the situation below and answer the 3 associated questions:

A powerful, intelligent king Vanamali once ruled over an ancient kingdom, Vanarajya. The kingdom was known for its high mountains and sprawling plains, and ninety percent of its land was under forest cover. Trade in forest produce was the mainstay of its economy, supported by subsistence agriculture.

With the increase of population, over time the forest in the plains was cleared for agriculture. The forest in the mountains continued to supply nutrient-enriched

water and abundant forest produce to the plains. As a result, agricultural yields were bountiful. The plains prospered as compared to the mountains.

Question 1
The increasing prosperity of the plains people tempted those in the mountains to divert forest land for agriculture. Vanamali was afraid that expansion of agriculture would result in deforestation of the mountains.
Which of the following is the BEST course of action for Vanamali to conserve the mountain forest?

A. Institute a mechanism that ensures plains people pay royalty, to be transferred to mountain people for maintaining forest cover
B. Declare a "Mountain Day" when plains people meet and thank mountain people for sustaining their agriculture
C. Constitute a committee to protect the forest with powers to punish those who fell trees
D. Urge the elders of the mountains to come up with agricultural practices that ensure no erosion of forest cover
E. Levy a tax on traded agricultural produce from the plains to cross-subsidize supplies to mountain people

Answer: A

Question 2
Vanamali, afraid of further deforestation, issued a diktat against felling of trees in the mountains. In due course, thanks to the booming agriculture, the king along with plains people began to prosper. However, mountain people became relatively poor, thanks to Vanamali's diktat.
Which of the following options should mountain people choose to BEST protect their long-term interests?

1. Sell forest produce exclusively to the neighbouring kingdoms
2. Seek employment in the plains
3. Ignore Vanamali's diktat and divert forest land for agriculture
4. Charge a premium on forest produce and issue hunting permits
5. Stop the flow of rivers to the plains

Answer: D

Question 3
The village elders of the mountains had informed Vanamali about the presence of a precious metal in abundance under a large part of the forest. They pleaded with him to repeal his diktat and permit felling of trees for mining.
Vanamali knew that the precious metal would make his kingdom prosper. However, he was worried that mining would reduce the flow of nutrients, water and forest produce to the plains.
Vanamali's advisor Vanapandit presented the following action plans for his consideration:

1. Repeal the forest diktat and charge hefty royalty for mining in the mountains
2. Permit mining in the mountains and enforce rainwater harvesting in the plains
3. Permit mining in the mountains and begin afforestation in the plains
4. Continue with the forest diktat in the mountains
5. Permit limited mining in rotation but maintain the forest diktat in the rest of the mountains Which of the following sequences of action plans, in the DESCENDING order of their ability to contribute to Vanarajya's sustainable prosperity, will be the MOST appropriate for Vanamali?

A. 5, 2, 4, 3, 1
B. 4, 5, 2, 3, 1
C. 4, 2, 5, 1, 3
D. 3, 5, 2, 1, 4
E. 5, 3, 2, 4, 1

Answer: E

General Knowledge

Margaret Atwood and Bernardine Evaristo have been recently awarded with:

A. The Hugo Award
B. The Man Booker Prize
C. The Costa Book Awards
D. The Pulitzer Prize
E. The Nobel Prize

Answer: B

In which Indian state did president Ram Nath Kovind serve as Governor?

A. Jharkhand
B. Bihar
C. Uttar Pradesh
D. West Bengal
E. Chhattisgarh

Answer: B

Malfunction of which of the following organs is the MOST common cause of vertigo?

A. Stomach
B. Kidney
C. Ear
D. Heart
E. Lung

Answer: C

Which Indian startup was acquired by Walmart?

A. Big Basket
B. Makemytrip
C. Ola
D. Flikart

E. Big Bazar

Answer: D

Which Indian bank was the FIRST to issue "Green Bonds" for financing renewable and clean energy projects?

A. State Bank of India
B. ICICI Bank
C. Bandhan Bank
D. Yes Bank
E. Axis Bank

Answer: D

Which organization's mascot was R.K. Lakshman's "the common man"?

A. Air Deccan
B. HMT
C. Nerolac Paints
D. Khadi Gramodyog Limited
E. Asian Paints

Answer: A

Which deer is also known as "the dancing deer" of Manipur?

A. Sangai
B. Hog deer
C. Sambar
D. Chital
E. White tailed deer

Answer: A

Which is the largest landlocked salt water lake in India?

A. Vembanad Lake
B. Chilika Lake
C. Sambhar Lake
D. Chital Lake
E. Pulicat Lake

What did India commit to achieve under the Paris Climate Agreement (2015) as outlined in its Intended Nationally Determined Contributions report submitted to the UNFCCC?

A. Reduce the energy intensity of its GDP by 33 to 35 percent by 2030 from 2005 levels
B. Reduce the pesticide intensity of its GDP by 33 to 35 percent by 2030 from 2005 levels
C. Reduce the emissions intensity of its GDP by 33 to 35 percent by 2030 from 2005 levels
D. Reduce the water intensity of its GDP by 33 to 35 percent by 2030 from 2005 levels
E. Reduce the material intensity of its GDP by 33 to 35 percent by 2030 from 2005 levels

Answer: C

What does the "Earth Overshoot Day" indicate?

A. It marks the date when humanity's demand for ecological resources and services in a given year exceeds what the Earth can regenerate in that year
B. It marks the date when the Earth's axis changes during its annual orbit around the Sun
C. It marks the date when humanity's demand for natural resources and services in a given year exceeds what the Earth can regenerate in that year
D. It marks the date when humanity's demand for material resources in a given year exceeds what the Earth can regenerate in that year

E. It marks the date when humanity's demand for non-material resources in a given year exceeds what the Earth can regenerate in that year

Answer: A

What does the "Earth Overshoot Day" indicate?

A. It marks the date when humanity's demand for ecological resources and services in a given year exceeds what the Earth can regenerate in that year
B. It marks the date when the Earth's axis changes during its annual orbit around the Sun
C. It marks the date when humanity's demand for natural resources and services in a given year exceeds what the Earth can regenerate in that year
D. It marks the date when humanity's demand for material resources in a given year exceeds what the Earth can regenerate in that year
E. It marks the date when humanity's demand for non-material resources in a given year exceeds what the Earth can regenerate in that year

Answer: A

In which state was the first ever environmental referendum held?

A. Chhattisgarh
B. Maharashtra
C. Jharkhand
D. Madhya Pradesh
E. Odisha

Answer: E

Match the following folk theater forms with their associated states:

A. Therukoothu	P. Odisha
B. Koodiyattam	Q. Maharashtra
C. Bhavai	R. Kerala
D. Tamasha	S. Tamil Nadu
E. Jatra	T. Gujarat

A. ABCDE- RSTPQ
B. ABCDE-PQRST
C. ABCDE- QSTRP
D. ABCDE-SRTQP
E. ABCDE-RSTQP

Answer: D

Omuamua is:

A. An interstellar object
B. A small primate
C. A Buddhist chant
D. NASA's spaceship to Pluto
E. A character in the TV series "Star Trek"

Answer: A

In which Indian state is Sriharikota located?

A. Andhra Pradesh
B. Odisha
C. Kerala
D. Tamil Nadu
E. Telangana

Answer: A

What does the book "Silent Spring" (1962) by Rachel Carson highlight?

A. The adverse health effects caused by the ozone layer depletion
B. The adverse health effects caused by the indiscriminate use of lead in fuels
C. The adverse environmental effects caused by the indiscriminate use of pesticides
D. The adverse environmental effects caused by the indiscriminate use of plastics
E. The adverse environmental effects caused by the indiscriminate destruction of forests

Answer: C

"Rakhigarhi" is associated with:

A. Mayan civilization
B. Indus valley civilization
C. Irrawaddy civilization
D. Raksha Bandhan
E. Kalasha people

Answer: B

When Coca Cola exited India, which cola brand was created and marketed by the Government of India to provide jobs to those who earlier were employed by Coca Cola?

A. Double Cola
B. Bovonto
C. Campa Cola
D. Double Seven
E. Thums Up

Answer: D

Which of the following rivers does not cross international borders?

A. Ganga

B. Brahmaputra
C. Ravi
D. Tapi
E. Teesta

Answer: D

The phrase "How dare you?" is BEST associated with:?

A. Malala Yousafzai
B. Greta Thunberg
C. Michelle Obama
D. Boris Johnson
E. Emmanuel Macron

Answer: B

Which Indian state enjoys special provisions under Article 371(D)?

A. Jharkhand
B. Arunachal Pradesh
C. Tripura
D. Andhra Pradesh
E. Meghalaya

Answer: D

Who among the following was awarded the Ramon Magsaysay award in 2019?

A. T.M. Krishna
B. Fayed Souza
C. Shekhar Gupta
D. Arnab Goswami
E. Ravish Kumar

Answer: E

Which organization funded the Indian Cricket League?

A. Zee Entertainment Enterprises
B. Board of Control for Cricket in India
C. International Cricket Council
D. Star Sports Enterprises
E. Star Sports Global LLC

Answer: A

Match the following foreign travelers with the rulers of that period:

A. Fa-Hien	P. MohammedBin Tughlag
B. Huien Tsang	Q. Chandragupta II
C. Megasthenes	R. HarshaVardhana
D. Thomas Roe	S. Jehangir
E. Ibn Battuta	T. Chandragupta Maurya

A. ABCDE-RQSPT
B. ABCDE-PRTQS
C. ABCDE-RPQTS
D. ABCDE-QRTSP
E. ABCDE-PQRST

Answer: D

Match the following authors with their works:

A. Shashi Tharoor	P. The Suitable Boy
B. Salman Rushdie	Q. Sea of Poppies
C. Vikram Seth	R. Inglorious Empire
D. Arundhati Roy	S. Shalimar the Clown
E. Amitav Ghosh	T. The Ministry of Utmost Happiness

A. ABCDE-SRPTQ
B. ABCDE-RSPTQ
C. ABCDE-PQRST
D. ABCDE-TSPRQ
E. ABCDE-TRQSP

Answer: B

Which Indian state has different capitals in summer and winter?

A. Sikkim
B. Mizoram
C. Maharashtra
D. Uttarakhand
E. Gujarat

Answer: C

Quantitative Aptitude

Q. Nalini has received a total of 600 WhatsApp messages from four friends Anita, Bina, Chaitra and Divya. Bina and Divya have respectively sent 30% and 20% of these messages, while Anita has sent an equal number of messages as Chaitra. Moreover, Nalini finds that of Anita's, Bina's, Chaitra's and Divya's messages, 60%, 40%, 80% and 50% respectively are jokes. What percentage of the jokes, received by Nalini, have been sent neither by Divya nor by Bina?

1. 65.12
2. 38.6
3. 61.4
4. 57
5. 34.88

Answer: 61.4

Solution

Let four friends Anita, Bina, Chaitra and Divya be represented as A,B,C,D respectively.

From the given information, Messages sent by A are 150 out of which 90 are Jokes

Messages sent by B are 180 out of which 72 are Jokes

Messages sent by C are 150 out of which 120 are Jokes

Messages sent by D are 120 out of which 60 are Jokes

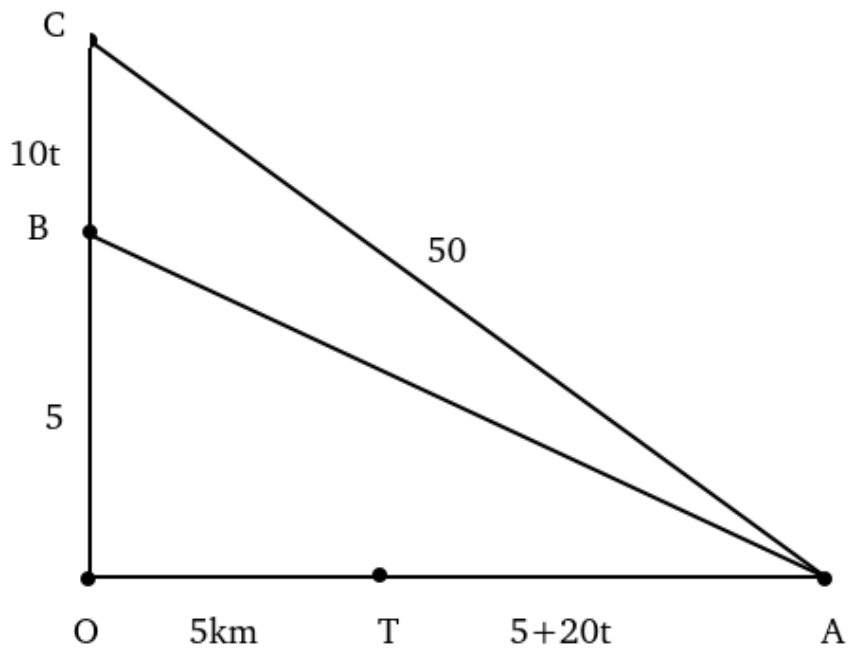
∴ Percentage of jokes that were neither sent by D or B is 210*100/342=61.4

Two friends, Ram and Shyam, start at the same point, at the same time. Ram travels straight north at a speed of 10km/hr, while Shyam travels straight east at twice the speed of Ram. After 15 minutes, Shyam messages Ram that he is just passing by a large telephone tower and after another 15 minutes Ram messages Shyam that he is just passing by an old banyan tree. After some more time has elapsed, Ram and Shyam stop. They stop at the same point of time. If the straight-line distance between Ram and Shyam now is 50 km, how far is Shyam from the banyan tree (in km)? (Assume that Ram and Shyam travel on a flat surface.)

1. 45
2. 20 √5 – 5
3. 20 √5 + 5
4. 115 / 3
5. 5 √21

Answer: 45

Solution



$2500=(5+10t)^2+(10+20t)^2 \Rightarrow (1+2t)^2=20$

$AB^2=25+100\,(1+2t)^2$ => AB= 45km.

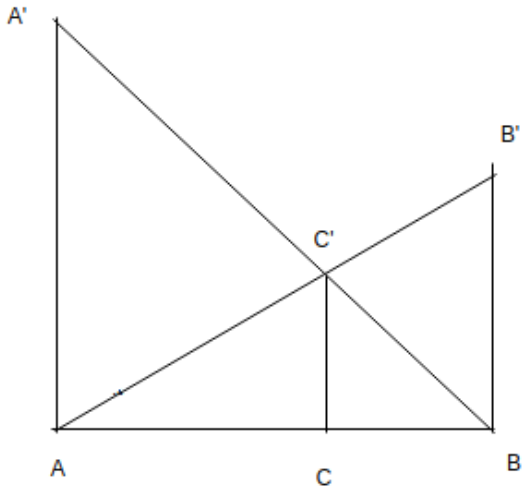
Q. Two lighthouses, located at points A and B on the earth, are 60 feet and 40 feet tall respectively. Each lighthouse is perfectly vertical and the land connecting A and B is perfectly flat. The topmost point of the lighthouse at A is A′ and of the lighthouse at B is B′. Draw line segments A′B and B′A, and let them intersect at point C′. Drop a perpendicular from C′ to touch the earth at point C. What is the length of CC′ in feet?

1. 20
2. 25

3. 30
4. 24
5. The distance between A and B is also needed to solve this

Answer: 24

Solution



Triangle ACC' is similar to triangle ABB'

Considering AC = a, BC = b, CC' = h, AA' is given as 60, BB' is given to be 40.

AC/AB = CC'/BB' = h/40.

$\left(\frac{a}{a+b}\right) = \frac{h}{40}$ (1)

Similarly triangle BCC' is similar to BAA'.

BC/AB = CC'/AA' = h/60.

$\left(\frac{b}{a+b}\right) = \frac{h}{60}$ (2)

Adding (1) and (2).

$\frac{h}{40} + \frac{h}{60} = 1$

1/h = $\left(\frac{1}{40} + \frac{1}{60}\right)$

h = 24

Using crossed ladder theorem

$\frac{1}{CC'} = \frac{1}{AA'} + \frac{1}{BB'}$ =1/60 +1/40 =5/120 =24.

Q. A man is laying stones, from start to end, along the two sides of a 200-meterwalkway. The stones are to be laid 5 meters apart from each other. When he begins, all the stones

are present at the start of the walkway. He places the first stone on each side at the walkway's start. For all the other stones, the man lays the stones first along one of the walkway's sides, then along the other side in an exactly similar fashion. However, he can carry only one stone at a time. To lay each stone, the man walks to the spot, lays the stone, and then walks back to pick another. After laying all the stones, the man walks back to the start, which marks the end of his work. What is the total distance that the man walks in executing this work? Assume that the width of the walkway is negligible.

1. 16400 metres
2. 4100 metres
3. 8050 metres
4. 16200 metres
5. 8200 metres

Answer: 16400 metres

Solution

On one side, to place 1st rock, he had to travel 10m. For 2nd rock he had to travel 20m..similarly, till last rock he had to travel 400.

Total sum would be 10+20+30+...+400 = $\frac{40}{2}(410) = 8200$.

Similarly, on the other side it will be 8200.

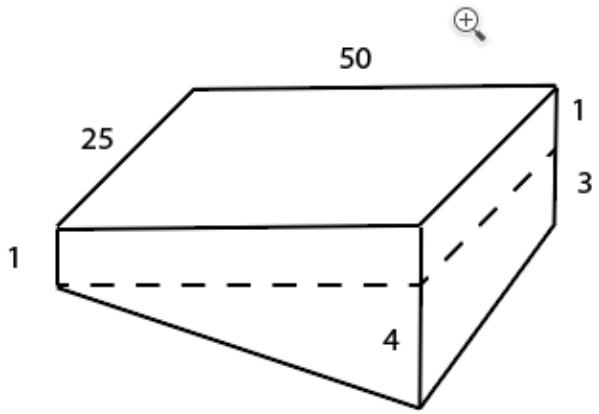
Total 8200+8200=16400.

Q. A rectangular swimming pool is 50 meters long and 25 meters wide. Its depth is always the same along its width but linearly increases along its length from 1 meter at one end to 4 meters at the other end. How much water (in cubic meters) is needed to completely fill the pool?

1. 2500
2. 3125
3. 3750
4. 1875
5. 1250

Answer: 3125

Solution



The volume of cuboid will be 50*25*1=1250

The volume of the portion below cuboid will be Area of triangle*width $=\frac{1}{2} \cdot 3 \cdot 50 \cdot 25 = 1875$

∴ Total volume = 1875+1250= 3125.

Q. A shop sells bags in three sizes: small, medium and large. A large bag costs Rs.1000, a medium bag costs Rs.200, and a small bag costs Rs.50. Three buyers, Ashish, Banti and Chintu, independently buy some numbers of these types of bags. The respective amounts spent by Ashish, Banti and Chintu are equal. Put together, the shop sells 1 large bag, 15 small bags and some medium bags to these three buyers. What is the minimum number of medium bags that the shop sells to them?

1. 5
2. 9
3. 4
4. 10
5. 7

Answer: 7

Solution

Let the amount spent by Ashish is 'a', Banti is 'b' and Chintu is 'c'. Given, a = b = c.

One of them has bought a large bag. So, he must have spent at least 1000 rupees. It means, everyone has spent at least a thousand rupees. Or, a +b + c ≥ 3000.

Revenue from small bags = 50*15 = 750.

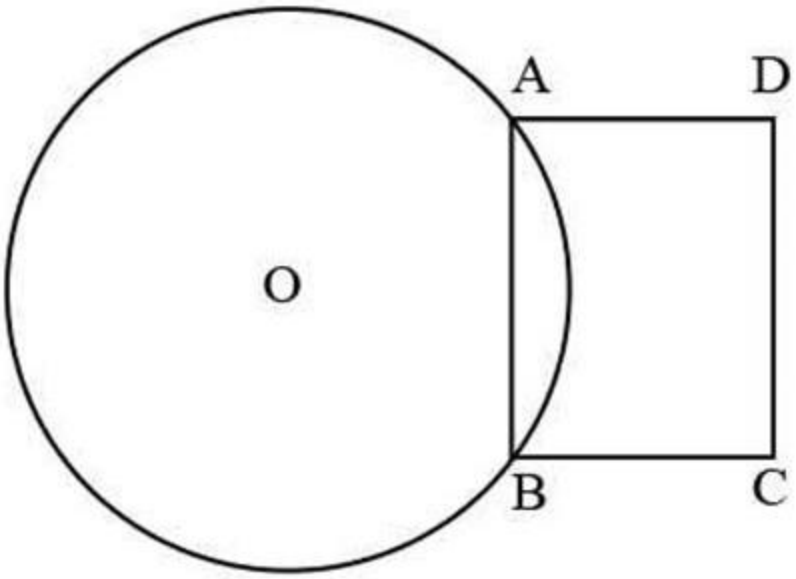
Revenue from large bag = 1000*1 = 1000. Total revenue excluding from medium bag = 750 + 1000 = 1750.

If 4 medium bags are sold, total revenue = 200*4 + 1750 = 2550, which is less than 3000. Hence, not the right answer.

If 5 medium bags are sold, total revenue = 200*5 + 1750 = 2750, which is less than 3000. Hence, not the right answer.

If 7 medium bags are sold, total revenue = 200*7 + 1750 = 3150, which is more than 3000. Hence, 7 is the correct answer.

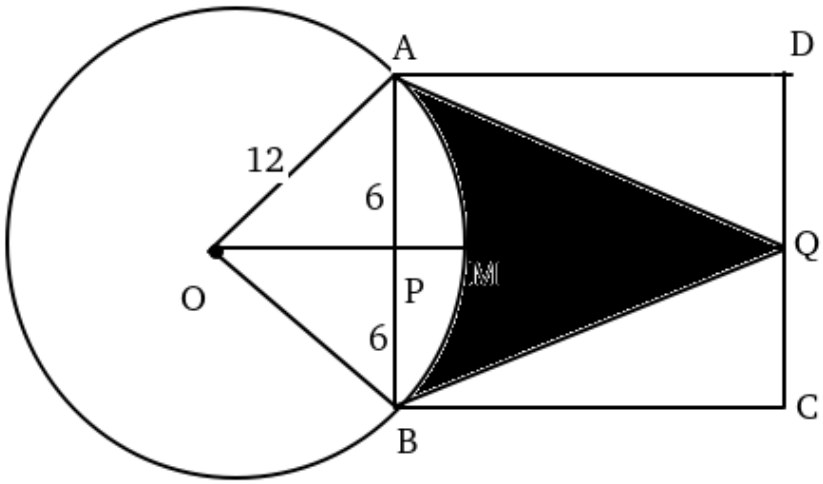
Q. In the figure given below, the circle has a chord AB of length 12 cm, which makes an angle of 60∘ at the center of the circle, O. ABCD, as shown in the diagram, is a rectangle. OQ is the perpendicular bisector of AB, intersecting the chord AB at P, the arc AB at M and CD at Q. OM = MQ. The area of the region enclosed by the line segments AQ and QB,and the arc BMA, is closest to (in cm^2):



1. 215
2. 137
3. 35
4. 63
5. 69

Answer: 69

Solution



In triangle OAP, since AP=6, OA will be 12.

Area of AQBMA=Area of Triangle ABQ- (Area of minor arc AMB-Area of OAB)

Length of PQ=MQ+PM = 12+(12-$6\sqrt{3}$)=24-$6\sqrt{3}$

Area of Triangle ABQ=$\frac{1}{2} \cdot 12. \left(24 - 6\sqrt{3}\right) = 6\left(24 - 6\sqrt{3}\right)$.=81.64

Area of minor arc AMB-Area of OAB=$\frac{60}{360} \cdot \pi \cdot 144 - \frac{1}{2} \cdot 12 \cdot 6\sqrt{3} = 24\pi - 36\sqrt{3}$.=13.07

∴Area of AQBMA=68.57$\approx$ 69

Q. A box contains 6 cricket balls, 5 tennis balls and 4 rubber balls. Of these, some balls are defective. The proportion of defective cricket balls is more than the proportion of defective tennis balls but less than the proportion of defective rubber balls. Moreover, the overall proportion of defective balls is twice the proportion of defective tennis balls. What BEST can be said about the number of defective rubber balls in the box?

1. It is either 2 or 3
2. It is exactly 2

3. It is exactly 3
4. It is either 3 or 4
5. It is either 0 or 1

Answer: It is exactly 3

Solution

	Defective	Non Defective	Total
Cricket	x	6-x	6
Tennis	y	5-y	5
Rubber	z	4-z	4

Given, z/4 > x/6 > y/5 ...(i)

and (x+y+z)/15= 2*y/5 => x+z=5y

The value of y can only be 1.

=> x+z=5.

If z = 1, then z/4 is less than x/6.

If z = 2, then z/4 is equal to x/6.

If z = 4 or 5 then y/5 is greater than x/6.

The only possible value to satisfy (i) condition is z=3. and x=2.

Q. When expressed in a decimal form, which of the following numbers will be non – terminating as well as non-repeating?

1. $(\pi/2)\ [\ (1/\pi) + 1\ ] - \pi/2$
2. $\sin^2 1° + \sin^2 2° + ... + \sin^2 89°$

3. √2 (3√2 – 4 / √2) + √3
4. (∛729)/3 + 22/7
5. (4-π) [1+ (π/4) + $(\pi/4)^2$ + $(\pi/4)^3$ + ...(infinite terms)]

Answer: √2 (3√2 – 4 / √2) + √3

Solution

Option A: $\left(\frac{\pi}{2}\right)\left[\left(\frac{1}{\pi}\right)+1\right]-\frac{\pi}{2}$ =1/2

Option B: $\sin^2 1^\circ+\sin^2 2^\circ+....+\sin^2 89^\circ$ =44+1/2 $(\sin^2(89)=\cos^2(1)\ \&\ \sin^2(1)+\cos^2(1)=1$

Option C: $\sqrt{2}\left(3\sqrt{2}-\frac{4}{\sqrt{2}}\right)+\sqrt{3}=6-4+\sqrt{3}=2+\sqrt{3}$ **which is non-terminating and non repeating.**

Option D: $\frac{\left(\sqrt[3]{729}\right)}{3}+\frac{22}{7}$ =3+22/7

Option E: $\left(\frac{\pi}{4}\right)+\left(\frac{\pi}{4}\right)^2+\left(\frac{\pi}{4}\right)^3+\ldots$ (infinite terms)= $\frac{1}{1-\frac{\pi}{4}}=\frac{4}{4-\pi}$ => $(4-\pi)[1+\left(\frac{\pi}{4}\right)+\left(\frac{\pi}{4}\right)^2+\left(\frac{\pi}{4}\right)^3+\ldots$ (infinite terms)] =4

Q. A rectangular field is 40 meters long and 30 meters wide. Draw diagonals on this field and then draw circles of radius 1.25 meters, with centers only on the diagonals. Each circle must fall completely within the field. Any two circles can touch each other but should not overlap. What is the maximum number of such circles that can be drawn in the field?

1. 38
2. 39
3. 36
4. 37
5. 40

Answer: 37

Solution

Each circle on the end of the diagonal will touch sides of the rectangular field

Using Pythagoras' theorem, the distance between the vertex of the rectangle and center of the first circle drawn on the diagonal = $1.25\sqrt{2}$

Distance between the vertex of the rectangle and circumference of the first circle drawn on the diagonal = $1.25\sqrt{2}$ - 1.25 = 0.51 meters

Space that cannot be used to draw circle otherwise they will go outside rectangle on every diagonal = 0.51 * 2 = 1.02 meters

Space that can be used to draw circles = length of diagonal - unused space = 50 - 1.02 = 48.98 meters

On every diagonal, maximum number of such circles = usable length/diameter of each circle = 48.98/2.5 = 19

Or, on every diagonal, one circle will be at the center (intersection of diagonals) and 9 circles will be on each half of the diagonal

∴ The circle in center will be common for both diagonals, and 9 circles can be drawn on each half of the diagonal. So total circles = 9*4 + 1 = 37

Q. A hare and a tortoise run between points O and P located exactly 6 km from each other on a straight line. They start together at O, go straight to P and then return to O along the same line. They run at constant speeds of 12 km/hr and 1 km/hr respectively. Since the tortoise is slower than the hare, the hare shuttles between O and P until the tortoise goes once to P and returns to O. During the run, how many times are the hare and the tortoise separated by an exact distance of 1 km from each other?

1. 24
2. 42
3. 22
4. 48
5. 40

Answer: 40

Solution

For hare and tortoise speed is given. Tortoise will take 12 hours to complete 1 round. And during this, hare will make 12 rounds of OP. In the first round, both has started from point O. After some time, hare will cross tortoise and distance between them will be 1 km. After some more time, when hare is returning back from P to O, before and after crossing tortoise, hare will be two more times 1km apart from tortoise. So, in first round, there are three such occurrences.

In the second round, when the hare has started from point O, while going and returning back, there will be four occurrences when before and after crossing the tortoise, the hare will be exactly 1 km apart. But the first occurrence of round 2 is already counted in round 1. So, in second round as well, there will be total 3 occurrences.

In the third, fourth and fifth rounds, there will be 4 such occurrences.

In the sixth round, because the tortoise will be at point P, there will be only 2 cases.

Now, till round 6 there are 20 such occurrences. And from round 7 to 12, it will be exactly the same but in reverse order of 2, 4, 4, 4, 3, 3. Hence, total such occurrences = 20 * 2 = 40.

Q. Consider the four variables A, B, C and D and a function Z of these variables, Z = 15A^2 − 3B^4 + C + 0.5D It is given that A, B, C and D must be non-negative integers and that all of the following relationships must hold:
i) 2A + B ≤ 2
ii) 4A + 2B + C ≤ 12
iii) 3A + 4B + D ≤ 15
If Z needs to be maximised, then what value must D take?

1. 15
2. 12
3. 0
4. 10
5. 5

Answer: 12

Solution

To maximize Z, B has to be minimized and A,C,D are to be maximised.

The value of B can be 0 or 1.

Case 1:

B=0 => A=1=> C=8 and D=12.

Z= 15+8+6=29.

Case 2:

B=1 => A=0=> C=12 and D=15.

Z=-3+12+7.5=16.5.

∴ D=12 is correct answer.

Q. XYZ is an equilateral triangle, inscribed in a circle. P is a point on the arc YZ such that X and P are on opposite sides of the chord YZ. Which of the following MUST always be true?

1. XZ + YP = XY + PZ
2. XP = XY
3. XP + PZ = XY + YP
4. XP = YP + PZ
5. XP = XY + YZ

Answer: XP = YP + PZ

Solution

If we join YP and PZ, XYPZ will become a cyclic quadrilateral. YZ and XP will be diagonals of this quadrilateral.

Ptolemy's theorem states that the product of the length of the diagonals is equal to the sum of products of measures of the pairs of opposite sides.

As per this theorem for the quadrilateral :

XY*PZ +XZ*PY = YZ*XP.

For the equilateral triangle.

Now, in equilateral triangle XYZ, YZ = XZ = XY.

Hence equation 1 becomes, XP = YP + PZ.

Q. X, Y and Z start a web-based venture together. X invests Rs. 2.5 lakhs, Y invests Rs. 3.5 lakhs, and Z invests Rs. 4 lakhs. In the first year, the venture makes a profit of Rs. 2 lakhs. A part of the profit is shared between Y and Z in the ratio of 2:3, and the remaining profit is divided among X, Y and Z in the ratio of their initial investments. The amount that Z receives is four times the amount that X receives. How much amount does Y receive?

1. Rs. 102,500
2. Rs. 93,750
3. Rs. 74,250
4. Rs. 75,000
5. Rs. 80,200

Answer: Rs. 75,000

Solution

Let the part of the amount divided between Y and Z be 5k => Y gets 2k and Z gets 3k.

The overall profit is Rs 200000.

Hence the remaining profit is Rs 200000 - 5k. =

Left over profit of 2-5k is divided in the ratio 2.5:3.5:4

The final profit distribution among X, Y and Z.

=> Finally, X gets $\frac{2.5}{10}(200000-5k)$, Y gets $2k+\frac{3.5}{10}(200000-5k)$ and Z gets $3k+\frac{4}{10}(200000-5k)$.

Given the ratio of profit distribution of X and Z is 1 : 4

Given, $3k+\frac{4}{10}(200000-5k)$ = 4($\frac{2.5}{10}(200000-5k)$) => 3k=$\frac{6}{10}(200000-5k)$ =>10k=400000-10k => 20k=400000 => k=20000.

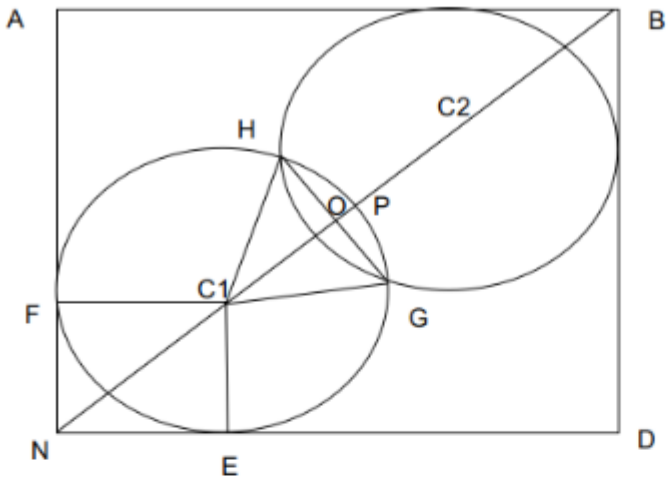
∴ Share of Y = $2k+\frac{3.5}{10}(200000-5k)$ = 75000.

Q. Mohanlal, a prosperous farmer, has a square land of side 2 km. For the current season, he decides to have some fun. He marks two distinct points on one of the diagonals of the land. Using these points as centers, he constructs two circles. Each of these circles falls completely within the land, and touches at least two sides of the land. To his surprise, the radii of both the circles are exactly equal to 2/3 km. Mohanlal plants potatoes on the overlapping portion of these circles. Calculate the area on which Mohanlal planted potatoes (in sq. km).

1. 5(π+4)/27
2. 2(2π−3√3)/27
3. (π−2)/9
4. 2(π−2)/9
5. 4(π−3√3)/27

Answer: 2(π−2)/9

Solution



The two circles are symmetric about the diagonal.

NC1=$\frac{2\sqrt{2}}{3}$ = $\sqrt{\left(\frac{2}{3}\right)^2+\left(\frac{2}{3}\right)^2} = \frac{\left(2\sqrt{2}\right)}{3}$

The lengths FC1, EC1 are the radius of the circle which is 2km/3.

The length C1P is the radius of the circle.

Because of symmetry C1O = C2O and C1N = C2B.

2*(C1N+ C1O) = $2\sqrt{2}$ the length of the diagonal of the square.

C1N+C1O = $\sqrt{2}$

C1O = $\sqrt{2} - \frac{2\sqrt{2}}{3} = \frac{\sqrt{2}}{3}$

OP = $\frac{\left(2-\sqrt{2}\right)}{3}$

The diagonal perpendicularly bisects the line GH. Hence C1OH is 90 degrees.$C1H^2 = C1O^2 + OH^2$

OH = $\frac{\sqrt{2}}{3}$. Similarly OG = $\frac{\sqrt{2}}{3}$

HC1, C1G both are equal to $\frac{2}{3}$ each. H1G is $\frac{2\sqrt{2}}{3}$. HC1G is a raight angled traingle with angle HC1G is 90 degrees.

Area of the region required is 2*(Area of segment OGH)

∴ Area of required region=$2\left(\frac{90}{360}\cdot\frac{4\pi}{9} - \frac{1}{2}\cdot\frac{2\sqrt{2}}{3}\cdot\frac{\sqrt{2}}{3}\right) = \frac{2(\pi-2)}{9}$

Q. Ashok has a bag containing 40 cards, numbered with the integers from 1 to 40. No two cards are numbered with the same integer. Likewise, his sister Shilpa has another bag containing only five cards that are numbered with the integers from 1 to 5, with no integer repeating. Their mother, Latha, randomly draws one card each from Ashok's and Shilpa's bags and notes down their respective numbers. If Latha divides the number obtained from Ashok's bag by the number obtained from Shilpa's, what is the probability that the remainder will not be greater than 2?

1. 0.8
2. 0.91
3. 0.73
4. 0.94
5. 0.87

Answer: 0.87

Solution

The number of ways of selecting one card from Ashok's bag and other from Shilpa bag = $40_{C_1} \times 5_{C_1}$ = 200

Now, if the card taken from Shilpa's bag shows 1, then 1 will divide all the numbers on Ashok's card. Hence, the number of ways = 40

If the card taken from Shilpa's bag shows 2, then the remainder will be either 0 or 1. Hence, the number of ways = 40

If the card taken from Shilpa's bag shows 3, then the remainder will be 0, 1 or 2. Hence, the number of ways = 40

If the card taken from Shilpa's bag shows 4, then the remainder will be 0, 1, 2 or 3. So the numbers having 3 as remainder will be rejected. So the number of form 4n+3 will be rejected. Total number of such numbers = $\frac{(39-3)}{4} + 1$ = 10

If the card taken from Shilpa's bag shows 5, then the remainder will be 0, 1, 2, 3 or 4. So the numbers having 3 or 4 as remainder will be rejected. So the number of form 5n+3, 5n+4 will be rejected. Total number of such terms = $\frac{(39-3)}{4} + 1$ = 10

The numbers left = 40-10 = 30

The total numbers having 5n+3 form = $\frac{(39-4)}{5} + 1 = 8$

The total numbers having 5n+4 form = $\frac{(38-3)}{5} + 1 = 8$

The numbers left = 40-8-8=24

Hence, the probability = $\frac{(40+40+40+30+24)}{200} = \frac{174}{200} = 0.87$

X, Y, and Z are three software experts, who work on upgrading the software in a number of identical systems. X takes a day off after every 3 days of work, Y takes a day off after every 4 days of work and Z takes a day off after every 5 days of work. Starting afresh after a common day off,
i) X and Y working together can complete one new upgrade job in 6 days
ii) Z and X working together can complete two new upgrade jobs in 8 days
iii) Y and Z working together can complete three new upgrade jobs in 12 days.
If X, Y and Z together start afresh on a new upgrade job (after a common day off), exactly how many days will be required to complete this job?

Options

- 2 days
- 2.5 days
- 4 days
- 3 days
- 3.5 days

Answer:2.5 days

Solution

Let the work done per day by X, Y and Z is respectively 'x', 'y' and 'z' units.

According to the first statement, out of 6 days, X works for 5 days, and Y works for 5 days. Total work done = 5x + 5y = 1...(i)

According to the second statement, out of 8 days, Z works for 7 days and X works for 6 days and they complete two jobs. 7z + 6x = 2...(ii)

According to the third statement, out of 12 days, Y works for 10 days and Z works for 10 days and they complete three jobs. 10y + 10z = 3...(iii)

Solving, we get x = 1/10, y = 1/10, z = 2/10.

=> every day, X does 10% of the job, Y does 10% of the job and Z does 20% of the job.

Together, every day they can do 40% of the job. Hence to complete 100% of the job, they will take 100/40 = 2.5 days.

What is the remainder if 19^{20} - 20^{19} is divided by 7?

Options

- 6
- 0
- 1
- 5
- 3

Answer:5

Important steps to solve this question:

1. If we see multiples of 7, 19 is closest to 21, and 19-21 = -2. Hence 19^{20} can be simplified as -2^{20}

2. Again, If we see multiples of 7, 20 is closest to 21, and 19-21 = -1. Hence 20^{19} can be simplified as -1^{19}
3. So, now the given equation becomes, $(19^{20} - 20^{19}) \bmod 7 \Rightarrow (-2)^{20} - (-1)^{19} \bmod 7$
4. Further, when $(-2)^{20}$ is simplified, the digit at the unit place will be 4. For details, please see the video.
5. Hence, now $(-2)^{20} - (-1)^{19} \bmod 7 \Rightarrow (4 + 1) \bmod 7 = 5$.

Or

Solution

Using Fermat's theorem :

If p is a prime number and a, p are co primes $\left(a^{p-1}\right) \ mod \ p = 1$

Remainder when 19^{20} is divided by 7 = 19^2 mod 7 =4. (Here $19^{20} = \left((19)^6\right)^3 \cdot (19)^2$

Since the remainder for 19^6 is 1 the remainder for 19^{20} is equivalent to the $\frac{19^2}{7}$ = 4.

Remainder when 20^{19} is divided by 7 = 20^1 mod 7 =6.(Here $\frac{20^6}{7}$ the remainder is 1 and since

$20^{19} = \left(20^6\right)^3 \cdot (20)^1 = \frac{(1 \cdot 20)}{7}$. The remainder is 6.

Remainder when $19^{20} - 20^{19}$ is divided by 7=4-6=-2=> 5.

Q.Six drums are used to store water. Five drums are of equal capacity, while the sixth drum has double the capacity of each of these five drums. On one morning, three drums are found half full, two are found two-thirds full and one is found completely full. It is attempted to transfer all the water to the smaller drums. How many smaller drums are adequate to store the water?

A. Three but not two

B. Four but not three

C. Three or four, depending on which drum had how much water initially

D. Five but not four

E. Five may be inadequate, depending on which drum had how much water initially

Solution

Let's five small drums have a capacity of 1 unit capacity each and one bigger drum has that of 2 units capacity. We need to consider two cases here. One with minimum volume and the other with maximum volume.

Case 1: Minimum value is possible if the bigger drum is half filled. So, total volume of water = 1 + 2 * (1/2) + 2 * (2/3) + 1 = 26/6 ~ 4.3

Case 2: Maximum value is possible if the bigger drum is completely full. So, total volume of water = 2 + 3 * (1/2) + 2 * (2/3) = 29/6 = 4.833

In any case volume of water is more than 4 units and less than 5 units. Hence, exactly 5 smaller drums are adequate to store the water.

190 students have to choose at least one elective and at most two electives from a list of three electives: E1, E2 and E3. It is found that the number of students choosing E1 is half the number of students choosing E2, and one-third the number of students choosing E3. Moreover, the number of students choosing two electives is 50. Which of the following CANNOT be obtained from the given information?

Options

- Number of students choosing E1
- Number of students choosing either E1 or E2 or both, but not E3
- Number of students choosing exactly one elective
- Number of students choosing both E1 and E2
- Number of students choosing E3

Answer: Number of students choosing both E1 and E2

Important steps to solve this question:

1. Let's assume, students choosing E1 is 1x, the number of students choosing E2 is 2x and that of E3 is 3x.
2. Total number of electives choosen = 6x = 190+50 ⇒ x = 40. Hence, 40 students have chosen E1, 80 have chosen E2 and 120 have chosen E3.
3. If we see option A, the number of students choosing E1 is 40.
4. Option B, number of students choosing either E1 or E2 or both, but not E3 = total - E3 = 190-120 = 70.
5. Option C, number of students choosing exactly one elective = Out of 190, 50 are choosing two electives, hence 190-50 = 140 are choosing exactly one elective.
6. Option D, number of students choosing both E1 and E2 => this can not be obtained
7. Option E, number of students choosing E3 = 3x = 120.

190 students have to choose at least one elective and at most two electives from a list of three electives: E1, E2 and E3. It is found that the number of students choosing E1 is half the number of students choosing E2, and one third the number of students choosing E3. Moreover, the number of students choosing two electives is 50.

Question 68

Report

In addition to the given information, which of the following information is NECESSARY and SUFFICIENT to compute the number of students choosing only E1, only E2 and only E3?

A. Number of students choosing only E2, and number of students choosing both E2 and E3

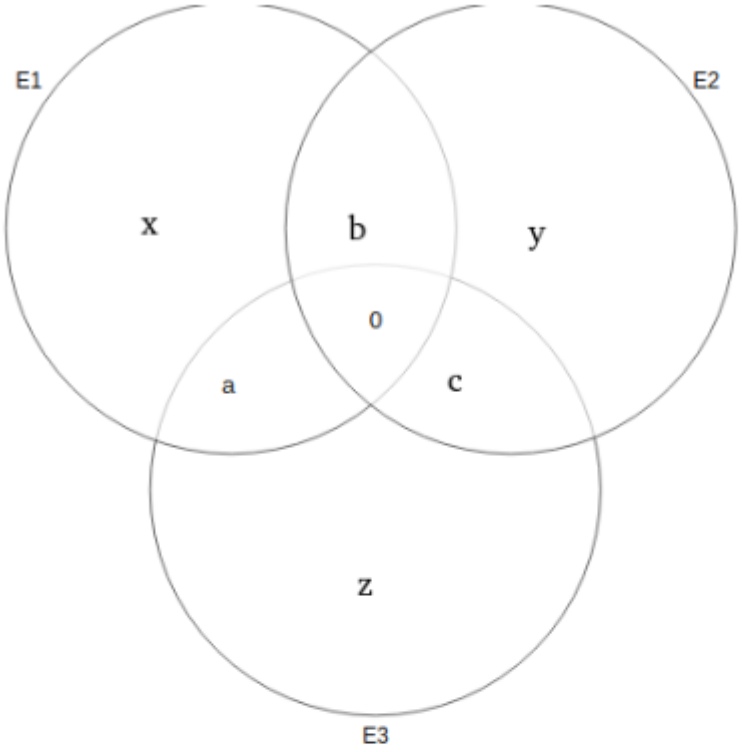
B. Number of students choosing both E1 and E2, number of students choosing both E2 and E3, and number of students choosing both E3 and E1

C. Number of students choosing only E1, and number of students choosing both E2 and E3

D. No extra information is necessary

E. Number of students choosing both E1 and E2

Solution



Given, a+b+c=50 and a+b+c+x+y+z=190 => x+y+z=140.

Also, let E1=k => E2=2k and E3=3k

E1+E2+E3= 6k=190+50=240 => k=40.

Option A: If the number of students choosing only E2, the number of students choosing both E2 and E3, are given then the number of students who choose E2 and E1, E1 and E3 can be found. From this only E1, only E3 can be calculated.

Option B: knowing the number of students choosing both E1 and E2, the number of students choosing both E2 and E3, and a number of students choosing both E3 and E1 is insufficient. This information is not enough to calculate the number of students who choose only E1, only E2, and only E3.

Option C: If x and c are known, we can't find y and z.

Option E is not sufficient.