1. Answer: b

Explanation:

Assumption 1 is not valid because the following line "Violations of the right to education may occur through the direct action of States parties (the act of commission) or through their failure to take steps required by law (the act of omission)" illustrates that violations can happen through an act of omission as well, which means that even after integrating the right in national laws there is no surety that violations will not happen. So, to assume that integration will end violations is not correct.

Assumption 2 is valid because as per the passage "Violations of the right to education may occur through the direct action of States parties (the act of commission) or through their failure to take steps required by law (the act of omission)" the state through an act of commission or omission can violate the right to education. So, this assumption is correct.

2. Answer: a

Explanation:

The passage explains how the unprecedented loss of species is comparable to those periods in the geological record, during each of which much of the world's life died out. Thus, option (a) is the correct which says that the world's oceans are heading towards mass global extinction.

Option (b) is not correct because the passage does not discuss any relationship between high biodiversity regions and the effect of global warming on them.

Option (c) is not correct because the relationship between marine ecosystem degeneration and terrestrial ecosystems is not established in the passage.

Option (d) is not correct because it is not discussed if corals and fish are the keystone.

3. Answer: c

Explanation:

Option (c) is correct. The environment improves at high-income levels. So, a logical corollary can be made that developing countries should focus on increasing income levels. (According to the idea, environmental pollution and degradation increase within the early stages of the economic process, get to a peak point, and reverse in such a way that the environment improves at high-income levels.)

4. Answer: d

Explanation:

The conservative orthodox beliefs of the people have to be condemned and punished by law if society has to change and discrimination against a female child has to come to an end.

5. Answer: c

Explanation:

In house D, there were 24 mice, out of which 12 arrived from house C.

In house C the cat killed 24 mice so total mice in house C = 12 + 24 = 36, out of which 18 arrived from house B.

In house B the cat killed 24 mice so total mice in house B = 18 + 24 = 42, out of which 21 arrived from house A.

In house A the cat killed 24 mice so total mice in house A = 21 + 24 = 45.

6. Answer: b

Explanation:

On the journey from City A to City B:

- Speed = 60 km/h
- Time = Distance / Speed = D / 60

During the stop at City B:

- The train stops for 30 minutes, which is 0.5 hours.

On the return journey from City B to City A:

- Speed = 75 km/h
- Time = Distance / Speed = D / 75

Now, we are given that the total time for the round trip is 8 hours and 30 minutes, which is 8.5 hours.

So, we can set up the equation:

(D / 60) + 0.5 + (D / 75) = 8.5

Now, let's solve for D:

(D / 60) + (D / 75) = 8.5 - 0.5

(D / 60) + (D / 75) = 8

To make the calculation easier, we can find a common denominator, which is 300:

(5D / 300) + (4D / 300) = 8

Now, combine the fractions:

(5D + 4D) / 300 = 8

9D / 300 = 8

Now, isolate D:

9D = 8 * 300

9D = 2400

D = 2400 / 9

D = 266.67 km

7. Answer: c

Explanation:

Statement 1 is correct as in the start of the passage, the author highlights the problems of the Indian economy and how we should do a balancing act.

Statement 2 is correct as derived from the last 3 lines of the passage where the author has compared the nature of employment in the rural areas.

8. Answer: a

Explanation:

The critical message of the passage is that the successive governments of India are working continuously to establish social justice in India. As things progressed, the governments are making necessary changes well. Option (b) is incorrect as it says that we can't establish social justice in India (elusive dream). Option (c) is incorrect as it that the definition of social justice is changing. This is not correct. Option (d) is incorrect as there is no mention that the government lacks political will. So, option (a) is the best choice.

9. Answer: a

Explanation:

Option (a) is the best inference from the passage as it highlights the impact of digitization in our daily life. Option (b) is not the best choice as it highlights the negative impact digitization which is not the purpose of the passage. Option (c) is beyond the scope of the passage as it talks about economic growth being accelerated by digitization. Option (d) is incorrect as it highlights which sector introduced digitization first. This is not the purpose of the passage and this kind of order cannot be inferred from the passage.

10. Answer: d

Explanation:

Divisibility rule for 11:

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Find the sum of the digits in the even places and the sum of the digits in the odd places. If the differences between the two sums are 0 or a multiple of 11, then the given number would be divisible by 11.

206p21279q leaves remainder 2 and divisible by 11 if the difference between the sum of the digits in the even places and the sum of the digits in the odd places is 0 or a multiple of 11 and it should have additional value of 2 since it is the remainder.

(2 + 6 + 2 + 2 + 9) – (0 + p + 1 + 7 + q)

21 – (8 + p + q)

21 – (8 + q + 3 + q) Given, p = q + 3

21- (11 +2q)

10 – 2q

So, we put q = 6, the differences will be -2(since 2 is a remainder).

So, p=q+3= 6+3=9;q=6

p/q = 9/6 = 1.5

11. Answer: c
Explanation:

For $ax^2 + bx + c$, sum and product of roots are: $-b/a$ and c/a respectively.

For $x^2 + 3x + 2$, sum of roots = $-b/a$ = $-3/1$ = -3

Product of roots = c/a = $2/1$ = 2

For $x^2 + 7x + 10$, sum of roots = $-b/a$ = $-7/1$= -7

Product of roots = c/a = $10/1$ = 10

12. Answer: d
Explanation:

From statement I

Total number of chocolates in the bag is a prime number less than 15.

Possible number of chocolates are 2 or 3 or 5 or 7 or 11 or 13.

But we cannot find the number of red and number of black color chocolates from statement I alone. Hence, statement I alone cannot answer the question.

From statement Il

Given, probability of drawing 1 chocolate of red color from the box is 37. From II alone, we cannot find the number of red and number of black color chocolates.

Hence, statement II alone cannot answer the question.

Combining both statements,

Given, total number of chocolates are prime number less than 15 and probability of drawing 1 chocolate of red color from the box is 3/7.

Which is only possible when there is total 7 chocolates and 3 of them are red.

No. of red chocolates in box = 3

No. of black chocolates in box = 7-3 = 4

Probability of drawing 2 chocolates of different colors = (3C1 X 4C1)/7C2 = 4/7.

Therefore, question can be answered by combining both statements together.

13. Answer: b
Explanation:

Let's break down the problem step by step:

- There are 75% skilled workers, so 25% are unskilled.
- Among skilled workers, 80% are permanent, so 20% are temporary.

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- Among unskilled workers, 20% are permanent, so 80% are temporary.

Now, let's calculate the number of temporary workers:

- For skilled workers, 20% are temporary, which is (20/100) * (75% of the total workers) = (1/5) * (75/100) * Total workers = (3/20) * Total workers.

- For unskilled workers, 80% are temporary, which is (80/100) * (25% of the total workers) = (4/5) * (25/100) * Total workers = (1/5) * Total workers.

So, the total number of temporary workers is (3/20 + 1/5) * Total workers = (15/100 + 20/100) * Total workers = (35/100) * Total workers = (7/20) * Total workers.

Now, we know that the number of temporary workers is 126, so we can set up the equation:

(7/20) * Total workers = 126

To solve for Total workers, multiply both sides by (20/7):

Total workers = (126 * 20) / 7 Total workers = 360

So, the number of total workers in the company is 360.

Therefore, the answer is (b) 360.

14. Answer: d
Explanation:

Whenever any number is divided by 7 then the remainder obtained is termed as odd days. For example, January has 31 days. So, the number of odd days in January = 31/7 = 3 odd days

Given: 22nd March was Sunday and Sachin was born on the second Tuesday of October.

So, number of odd days between 22nd March and 30th September

= (9 + 30 + 31 + 30 + 31 + 31 + 30)/7 = 192/7 = 3 odd days (Remainder)

Hence, day on 30th September = Sunday + 3 days = Wednesday

1st October will be Thursday and 1st Tuesday will be on (Thursday + 5), i.e., 6th October.

2nd Tuesday will be on (6th October + 7 days) i.e., 13th October.

Hence, option (d) is correct.

15. Answer: c
Explanation:

The probability of not getting the selected number all the three times = (⅚)^3 = 125/216.

Therefore, the probability of getting the selected number at least once= 1 – (125/216) = (91/ 216) ~ 0.42.

16. Answer: a
Explanation:

If Vinod is selected, Gita has to be selected.

If Krishna is selected, Mita cannot be selected.

If Prem is selected, Sita cannot be selected.

So, option (b) (Vinod Prem Gita Sita Mita) and option (c) (Krishna Prem Gita Mita Sita) are not possible.

Option (d) (Raman Harry Gita Rita Sita) is not possible because Gita has to be accompanied by Vinod.

Hence, the answer is option (a).

17. Answer: b
Explanation:

Number of cubes with at least one face painted yellow = Total number of cubes - number of cubes with no face painted.

The number of cubes with no face painted = $(n-2)^3$ = $(10-2)^3$ = 512.

Therefore, there are (1000 - 512) = 488 cubes which have at least one face painted.

18. Answer: b
Explanation:
(√2)^21 * (3^6) * (3^m) * (16^n) = (9^n) * (8^m) * (64^¼)
=> (2)^(21/2) * (3)^(6+m) * (2)^(4n) = (3)^(2n) * (2)^(3m) * (2)^(6/4)
=> (2)^(21/2-6/4) * (3)^(6+m) * (2)^(4n) = (3)^(2n) * (2)^(3m)
=> (2)^9 * (3)^(6+m) * (2)^(4n) = (3)^(2n) * (2)^(3m)
=> (2)^(9+4n) * (3)^(6+m) = (3)^(2n) * (2)^(3m)
Equating the powers of 2 and 3
9+4n= 3m ….(1)
6+m = 2n …(2)
Substituting (2) in (1),
9 + 12 + 2m = 3m
=> m = 21

19. Answer: d
Explanation:
A + B means A is not greater than B —> A <= B
A - B means A is neither greater nor equal to B —> A < B
A x B means A is neither smaller nor equal to B —> A >B
A # B means A is not smaller than B —> A >= B
A % B means A is neither smaller nor greater than B —> A = B
P % Q, P - T, T + R, R # S can be written as
S < = R > = T > P = Q
We can see from above that Q > S is false, so conclusion 1 is false.
We can see from above that T = Q is false, so conclusion 2 is false.

20. Answer: a
Explanation:
4 < x < 9
X can take values from the set {5, 6, 7, 8}
16 < y < 25
Y can take values from the set {17, 18, 19, 20, 21, 22, 23, 24}
The highest value N can take = y - x = 24 - 5 = 19
18 can be obtained at y = 24 and x = 6
17 can be obtained at y = 24 and x = 7
16 can be obtained at y = 24 and x = 8
15 can be obtained at y = 23 and x = 8
14 can be obtained at y = 22 and x = 8
13 can be obtained at y = 21 and x = 8
12 can be obtained at y = 20 and x = 8
11 can be obtained at y = 19 and x = 8
10 can be obtained at y = 18 and x = 8
9 can be obtained at y = 17 and x = 8
Hence, y-x = N can take 11 distinct values.

21. Answer: d
Explanation:

Since the cone is divided into two parts, when we consider top part of the cone, its height is (⅓)rd of the original height which is equal to 8cm.

If height becomes (⅓)rd, then radius also becomes (⅓)rd.

If both height and radius become (⅓)rd, Volume will be (1/27)th

So, if we consider top part's volume = V

Volume of remaining part = 26V

Total volume = 27V

Given 26 V – V = 500

25 V = 500 => V = 20

Total volume = 27 V = 27 * 20 = 540 cc

22. Answer: c
Explanation:
Let's denote the purchase price of the iPad as "x" rupees and the purchase price of the iPhone as "y" rupees.

According to the given information, we have two equations:

x + y = 60,000 (Total purchase cost)

0.20x - 0.10y = 0.10 * 60,000 (Overall profit)

The first equation represents the total amount spent on buying the iPad and iPhone, which is Rs 60,000.

The second equation accounts for the overall profit achieved by selling the devices. The left-hand side of the equation represents the difference between the profit from selling the iPad (20% profit) and the loss from selling the iPhone (10% loss), while the right-hand side is 10% of the total purchase cost (which is the desired overall profit).

Now we can solve this system of equations to find the values of "x" and "y."

From the first equation, we can express y in terms of x:

y = 60,000 - x

Substitute this expression for y into the second equation:

0.20x - 0.10(60,000 - x) = 0.10 * 60,000

Simplify the equation:

0.20x - 6,000 + 0.10x = 6,000

Combine like terms:

0.30x = 12,000

Divide by 0.30:

x = 12,000 / 0.30

x = 40,000

So, the purchase price of the iPad was Rs 40,000.

23. Answer: d
Explanation:
The total number of possible rearrangements of the number 3573 = 4!/2!=4∗3=12

Now consider only the units place.In these 12 rearrangements,

3 occurs 6 times in the unit's place. (if 3 is fixed in unit's place, the remaining 3 places can be filled with 3,5,7 in 3! Ways = 6 ways)

5 occurs 3 times in the unit's place. (if 5 is fixed in unit's place, the remaining 3 places can be filled with 3,3,7 in 3!/2! Ways = 3 ways)

7 occurs 3 times in the unit's place. (if 7 is fixed in unit's place, the remaining 3 places can be filled with 3,5,3 in 3! Ways = 3 ways)

The total sum of digits of the units place in all the 12 arrangements combined = 3(6) + 5(3) + 7(3) = 18+15+21 = 54.

Similarly, the sum of digits in ten's, hundred's or thousand's place will also be 54.

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So the sum of all the 12 rearrangements = 54(1111)

The average of all these rearrangements = 54(1111)/12 = 4999.5

24. Answer: c
Explanation:

The ratio of times taken by Aruna, Tanuja and Manju to complete a job is 5 : 8 : 10.

This means that their efficiencies are in the ratio

⅕ : ⅛ : 1/10

Or, their efficiencies are in the ratios 8 : 5 : 4

This means Aruna, Tanuja and Manju together can complete 8+5+4 = 17 units of work per hour in a day

Working 8 hours per day for 4 days they complete 17*8*4 = 544 units = total work

When Aruna and Tanuja work together for 6 days putting 6 hours 40 minutes per day, the total work done by them = (8+5) * 6 * 20/3 = 13 * 2 * 20 = 520 units

The remaining amount of work to be completed by Manju = 544-520 = 24 units

Manju completes 4 units in 1 hour, so manju takes 24/4 = 6 hours to complete the remaining work.

25. Answer: d
Explanation:

The passage emphasizes the dual nature of the World Wars, highlighting both their destructive impact and the subsequent transformations they sparked. It mentions that the wars led to the formation of international organizations like the United Nations, which implies a response aimed at preventing future conflicts. Additionally, the passage states that the World Wars underscore the necessity of diplomacy, cooperation, and vigilance. This implies that the wars serve as a lesson, emphasizing the importance of global cooperation to prevent similar devastating conflicts in the future. Option D best captures this rational implication by highlighting the role of the World Wars in prompting the need for international cooperation and efforts to avert future global conflicts.

26. Answer: d
Explanation:

Throughout the passage, the author emphasizes the increasing importance of ethical considerations in technology due to the transformative impact of innovations. The passage highlights that as technology advances, questions about its impact on individuals, society, and the environment arise, leading to ethical dilemmas. The passage further underscores the challenges posed by issues like bias in algorithms, surveillance, job displacement, and responsible technology use. The phrase "Striking a balance between technological progress and ethical responsibility is paramount" directly suggests that finding this balance is both crucial and challenging. Therefore, option D best captures the logical inference that ensuring ethical considerations in technology is a complex and essential task.

27. Answer: d
Explanation:

The passage emphasizes the role of mental health awareness in shaping a compassionate and empathetic society. It highlights how recognizing the significance of mental well-being goes beyond understanding conditions and involves acknowledging emotional struggles. The passage also mentions that mental health awareness encourages open conversations, promotes destigmatization, and emphasizes the importance of seeking help. All of these points contribute to the inference that mental health awareness leads to a society that is more empathetic, understanding, and compassionate toward individuals facing mental health challenges. This inference aligns with the overall theme of the passage, which emphasizes the positive impact of mental health awareness on societal attitudes and behavior.

28. Answer: d

Explanation:

If observed carefully we can understand that the above series is a combination of two arithmetic progressions.

The 1st AP is (1 + 5 + 9 + …) and the 2nd AP is (3 + 10 + 17 + ….)

Sum of an AP = n(2a+(n-1)d)/2

Where a is the first term, n is the number of terms in AP and d is the common difference.

Since the two series are alternate, Sum = (1 + 5 + 9 + … to 100 terms) + (3 + 10 + 17 + …. to 100 terms) = 100(2+99*4)/2 + 100(6+99*7)/2 = 54850

29. Answer: a

Explanation:

To find the minimum number of rows required to plant an equal number of trees of each type in each row, we need to find the greatest common divisor (GCD) of the given numbers of trees.

Given:

Number of orange trees = 22

Number of mosambi trees = 66

Number of banana trees = 88

Now, let's find the GCD of these numbers:

GCD(22, 66, 88)

First, let's find the GCD of 22 and 66:

GCD(22, 66) = 22

Now, let's find the GCD of 22 and 88:

GCD(22, 88) = 22

So, the GCD of 22, 66, and 88 is 22.

This means that the garden can plant 22 trees of the same type in each row, and the minimum number of rows required would be the total number of trees divided by the GCD:

Total number of trees = 22 (orange) + 66 (mosambi) + 88 (banana) = 176

Minimum number of rows = Total number of trees / GCD = 176 / 22 = 8

Therefore, the garden would need a minimum of 8 rows to plant an equal number of trees in each row, with only one type of tree in each row.

30. Answer: b

Explanation:

Total age of all the ten people in the family eight years ago was = 300 years

As per the information given in the question, there will be increase of 2 years in age of each of the members.

So increase in total age = 2 x 10

Age of infant will be taken as 0

Therefore, the total age of all the people in the family six years ago = 300 + 2×10 – 65 + 0 = 255 years

Similarly, the total age of all the people in the family four years ago = 255 +2×10 – 65 + 0 = 210 years

Since time difference is 4 years, therefore there will be an increase of 4 years in age of each member of the family.

So, Total age = 210 + 4 x 10 = 250 years

Therefore, the current average age of all the people in the family = 250/10

= 25 years.

31. Answer: d

Explanation:

The alphabets occurring at the odd places are replaced by alphabets that occur just before them and the alphabets in the even places are replaced by alphabets that come immediately after them.

R →odd place → encoded as Q

I → even place → encoded as J

G → odd place → encoded as F

H → even place → encoded as I

T → odd place → encoded as S Encoded word is 'QJFIS'

32. Answer: d
Explanation:

Each of the nine hamlets is along the bank of a river and the distance between two adjacent hamlets is 1 km. So, it is clear that all the hamlets lie along the same line. P is 4 km east from L and T is 4 km east from P. Thus, L and T are at the two ends and P is the middle hamlet.

Thus, the nine hamlets lie on the bank of the river as below:

L _ _ _ P _ _ _ T

N is 3 km from T. So, N has to come in the position as shown in the above picture. Distance between L and N = Distance between L and P + Distance between P and N

= 4 km + 1 km = 5 km. Hence, option D is the correct answer.

33. Answer: b
Explanation:

According to the statements 1, 2, 3 and 4 E<A≤B≤C<D

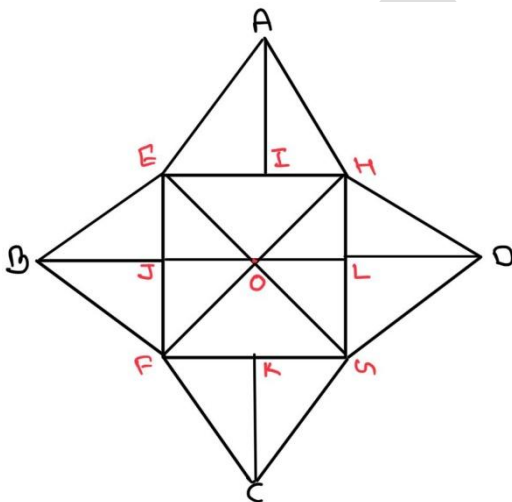Option A is incorrect as it is not necessary that rank of A is fourth.

Option C is not correct as they may be equal or unequal.

Option D is incorrect as B and E are not equal.

34. Answer: c
Explanation:

This figure may be labelled as shown:

The simplest triangles are AEI, AIH, BEJ, BJF, CFK, CKG, DGL, DLH, EOJ, FOJ, FOG, LOG, HOL and HOE i.e. 14 in number.

The triangles composed of two components each are EAH, FBE, BEO, EOF, BFO, FCG, GDH, HOD, HOG and GOD i.e. 10 in number.

The triangles composed of three components each are EFH, EHG, FGH and EFG i.e. 4 in number.

Thus, there are 14 + 10 + 4 = 28 triangles in the given figure.

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35. Answer: b

Explanation:

First, let's calculate the average annual growth rate for each product. The formula for average annual growth rate is:

AAGR = [(Ending Value / Beginning Value)^(1 / Number of Years) - 1] * 100

For the Option a:

For Product A

AAGR = [(242 / 120)^(1 / 4) - 1] * 100 ≈ 19.16%

Product B

AAGR = [(156 / 75)^(1 / 4) - 1] * 100 ≈ 20.17%

For the Option b:

Product E:

AAGR = [(135 / 65)^(1 / 4) - 1] * 100 ≈ 20.07%

Product C:

AAGR = [(174 / 100)^(1 / 4) - 1] * 100 ≈ 15.00%

For Option c:

Total sales for each product over the five-year period:

Product A: 120 + 140 + 168 + 202 + 242 = 872

Product B: 75 + 90 + 108 + 130 + 156 = 559

Product C: 100 + 110 + 121 + 145 + 174 = 650

Product D: 80 + 96 + 115 + 138 + 165 = 594

Product E: 65 + 78 + 94 + 113 + 135 = 485

For option d:

Average annual growth rate for each product has already been calculated above.

From the calculations, we can see that statement B is correct.

36. Answer: d

Explanation:

Option d is the correct answer.

Since are the base numbers are multiple of 2 we can reduce all the bases of given number to 2 to find out which is the largest number:

$2^{156} = 2^{156}$

$4^{79} = 2^{2 \times 79} = 2^{158}$

$128^{23} = 2^{7 \times 23} = 2^{161}$

And

$8^{54} = 2^{3 \times 54} = 2^{162}$

Thus, we can see clearly that 8^{54} is the largest amongst the given number.
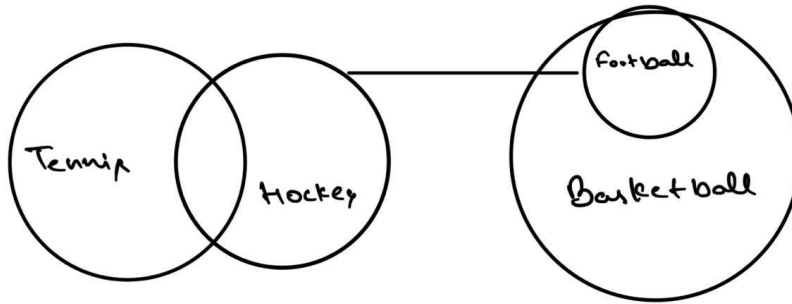

37. Answer: a

Explanation:

Given Conclusions:

I) Some tennis is not football: True (Because some tennis are hockey and no hockey is football, which implies that the tennis which is hockey will not be football)

II) Some basketball is hockey: False (It is possible, but there is no definite positive or negative relation is given between the elements, therefore it is false)

Hence, only conclusion I follows.

38. Answer: a

Explanation:

Option a is the correct answer.

From the first statement, we know that if it rains, the streets will be wet.

From the second statement, we know that the streets are not wet.

Using these two pieces of information,

we can conclude that it did not rain.

Therefore, only conclusion I follows.

39. Answer: a

Explanation:

Assumption (1) is correct. The passage mentions, "Freebies distributed to the public as work given under NREGA. So, this assumption is correct.

Assumption (2) is correct. The passage suggests that Freebies are a burden on stressed fiscal resources.

Assumption (3) is not correct. The passage does not mention what happens in the case of adequate resources.

40. Answer: b

Explanation:

Assumption 1 is invalid. The given assumption is incorrect because the following line "Violations of the right to education may occur through the direct action of States parties (the act of commission) or through their failure to take steps required by law (the act of omission)", illustrates that violations can happen through an act of omission as well, which means that even after integrating the right in national laws there is no surety that violations will not happen. So, to assume that integration will end violations is not correct.

Assumption 2 is valid. As per the passage, "Violations of the right to education may occur through the direct action of States parties (the act of commission) or through their failure to take steps required by law (the act of omission)", the state through an act of commission or omission can violate the right to education. So, this assumption is correct.

41. Answer: c

Explanation:

Statement 1 is correct. The passage mentions" In recent years, the significant rise of private cryptocurrencies such as Bitcoin and Ether has spooked central banks throughout the world and pushed the case for official digital currencies." Central banks across the world are considering the case of official digital currencies. So, it is correct to assume that the Indian central bank also needs to launch its official digital currency. Moreover, the word "spooked" carries a negative connotation.

Statement 2 is correct. The passage mentions," A 2021 BIS survey of central banks, which found that 86% were actively researching the potential for such currencies, 60% were experimenting with the technology, and 14%

were deploying pilot projects." The very fact that 60% of the central banks across the world are already experimenting with the technology of cryptocurrency clearly indicates that the technology behind the cryptocurrency is no longer monopolised by private entities. It is now accessible to government bodies like central banks also. Thus, it is a correct assumption.

Statement 3 is incorrect. This option is beyond the scope of the passage because the passage nowhere discusses the need for India to compete against China in the digital currency sector. So, this is not the correct inference.

42. Answer: c
Explanation:
Statement 1 is correct. Refer to the lines "Three factors that largely determine the efficacy of any system of governance are the quality of leadership, the characteristics of the governed, and the nature of the structures and processes employed to exercise authority and meet human needs. The characteristics of the governed is reflecting the citizens of the country. Thus, the given assumption in the statement is correct because governance depends on three factors: the quality of leadership, the characteristics of the governed, and the nature of the structures and processes employed to exercise authority and meet human needs. So, citizens are also responsible for efficient outcomes of governance.

Statement 2 is correct. The passage mentions, "The capacity of any institution to effect and manage change, and to respond creatively to challenges that lie before it, increases the development of several critical skills. These include the ability to maintain a clear perception of social reality and the forces operating in it; to properly assess the resources of the community; and to implement decisions with an openness and flexibility that avoid all traces of dictatorial behaviour, among others". So, the capacity of the institution increases if the implementation of decisions is done with openness and flexibility.
Therefore, it would be correct to say that capacity will reduce if the implementation is done in a rigid and closed manner. So, this is the correct assumption.

43. Answer: a
Explanation:
Assumption 1 is correct. The passage mentions, "Despite abundant low-skilled labour, our growth trajectory has mostly skipped manufacturing.' It clearly implies that availability of low-skilled labours would encourage the growth of the manufacturing sector.

Assumption 2 is correct. The passage mentions, "Growing instead on the back of a far smaller, high- skilled services sector.' It implies that the service sector is thriving on a small workforce.

Assumption 3 is incorrect. The passage mentions, "Growing instead on the back of a far smaller, high- skilled services sector. Consequently, the bulk of jobs our economy generated even in its peak growth years was in the largely informal, low value add construction sector.' It implies that the economy post- 1991 is growing on the back of the service sector. But the passage does not mention the peak growth years, so we cannot assume whether it was the period from 2005-2012 or not.

44. Answer: b
Explanation:
Statement 1 is incorrect. The given option is not correct because the statement is extreme.
Statement 2 is correct. The passage mentions "Thus, education is not merely learning of facts but is to train our mind to think. Education systems must provide opportunities to every individual to learn through experience and should help to develop critical thinking and problem- solving skills" and "Instead of focusing

on critical thinking, expressing new ideas and debating and writing critically on any issue, our students are forced to learn through the rote route". These lines show that to develop critical thinking (outcome of education) one should resort to experienced-based learning and reduce rote learning.

45. Answer: c
Explanation:

As per statement 1, there are 2, 1 or 0 figures on each page. There are 51 pages in the book. So, maximum possible images in the book = 51 × 2 = 102

And the minimum possible images in the book = 0 So, statement 1 alone is not sufficient.

As per statement 2, there is 1, 2, 3, 4…… ∞ images on each page. But we do not know the number of pagesin the book.

So, statement 2 alone is not sufficient.

If we use the two statements together, then we know that there are 51 pages in the book. Every page must have 1 or 2 images.

So, maximum possible images in the book = 51 × 2 = 102 And the minimum possible images in the book = 51 × 1 = 51

But we still cannot answer whether there are more than 100 figures in the book. So, even S1 and S2 together are not sufficient to answer the question.

46. Answer: c
Explanation:

It's given that:

Length of stick S1 = 7.5 feet and Length of stick S2 = 3.25 feet

Length of stick S1 = 7.5 feet = 15/2 feet

And Length of stick S2 = 3.25 feet = 13/4 feet

The maximum possible size of a piece = HCF of (15/2 and 13/4) = HCF of (15, 13) / LCM (2, 4) = 1/4 = 0.25 feet

So, number of minimum possible pieces of equal size = (7.5 + 3.25)/0.25 = 43

47. Answer: b
Explanation:

Position of A: 16th from left end Position of V: 18th from right end

Position of G: 11th from A towards the right and 3rd from V towards the right. Now, two cases are possible:

Case I: A is to the right of V

This case is not possible, because it is given that G is 11th to the right from A. If A is to the right of V and G is further 11 positions to the right of A, then G must be atleast 12 positions to the right of V. But as per the question G is only three positions to the right from V.
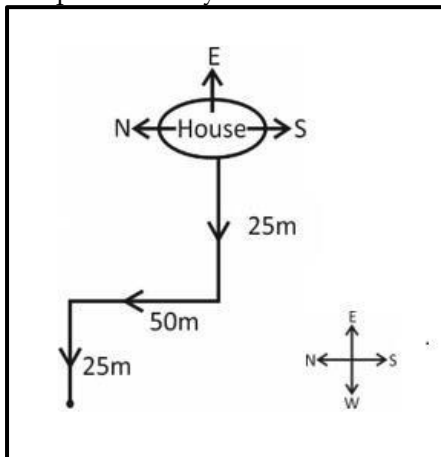
Case II: A is to the left of V
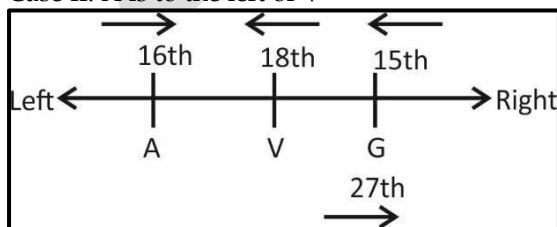
G is 3rd from V towards the right, so position of G = 18 – 3 = 15th from right end. G is 11th from A towards the right, so position of G = 16 + 11 = 27th from left end.

Hence, total number of boys in the row = 27 + 15 – 1 = 41 (we subtract one because G has been counted twice).

48. Answer: d

Explanation:

The path taken by the man has been depicted below:

By looking at the diagram we can easily say that the direction of man from the starting point is North-West.

49. Answer: a

Explanation:

The passage directly mentions, "the increasingly evident unsustainability of production and consumption patterns. Current production models rely heavily on fossil fuels.". Therefore, heavy dependence on fossil fuels is a reason, as per the author, for the unsustainability of production patterns.

Again, the author directly states, "the increasingly evident unsustainability of production and consumption patterns. Current production models rely heavily on fossil fuels. We now know that this is unsustainable because the resources are finite. ". Therefore, this statement is correct as well.

The passage states that "Some developed countries have begun to alleviate the worst effects by expanding recycling". This means that some countries are trying to reduce the effects of unsustainable production via recycling and other methods. Therefore, recycling would reduce the unsustainability in production patterns rather than aggravate it.

50. Answer: d

Explanation:

The author mentions high costs and low availability of clean energy sources. Immediately after that, he states that "Developed countries need to support developing countries' transition to sustainable human development". Therefore, the first statement is correct and it directly follows the assertion made.

Whether this statement is correct or incorrect depends upon whether we opt for a narrow or broader interpretation of the passage. The passage mentions, "But most developing countries are hampered by the high costs and low availability of clean energy sources." Therefore, it seems that the author is only focussing on issues related to high costs and low availability of clean energy sources as hindrances for developed countries in transitioning towards sustainable human development.

However, (taking a broader view) the question does mention "can"- and providing loans for improving their public transport at nominal interest rates is certainly one way where developed countries can help developing countries specially to alleviate the worst effects of unsustainable development.

Likewise, this statement would be incorrect if we take a narrow interpretation of the passage, as it specifically mentions high costs and low availability of clean energy sources as hindrances for developed countries in transitioning towards sustainable human development.

But again, the question states "can" and encouragement (via finance etc.) to change production and consumption patterns is certainly an area where developed countries could support the developing ones.

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51. Answer: c

Explanation:

1.   The passage mentions, "The desert countries of the world and our own desert areas in Rajasthan are a grim reminder of the consequences of large-scale deforestation. Pockets of desert-like landscape are now appearing in other parts of the country including the Sutlej-Ganga Plains and Deccan Plateau. Where only a few decades back there used to be lush green forests with perennial streams and springs, there is only brown earth, bare of vegetation, without any water in the streams and springs except in the rainy season.". This supports the assertion of the author that deforestation and denudation will ultimately lead to the depletion of soil resources.

2.   This statement goes beyond the scope of the passage. The passage nowhere mentions anything related to the common man.

This is supported by the part in the passage which mentions, "the harshness of the climatic conditions" and "Where only a few decades back there used to be lush green forests with perennial streams and springs, there is only brown earth, bare of vegetation, without any water in the streams and springs except in the rainy season".

52. Answer: c

Explanation:

The problem set may be represented in the form of a Venn diagram as shown below:
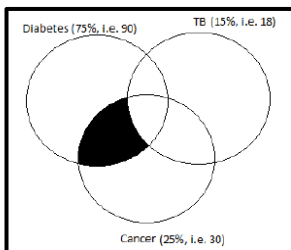
The shaded portion in the figure represents the patients that have diabetes and cancer only.

Several patients having TB = 18. So, the number of patients not having TB, a = 120 – 18= 102

Number of patients having cancer but not TB, x = 30 – (10% of 120) = 30 – 12 = 18 (as 10%had TB and cancer)

Number of patients having diabetes but not TB, y = 90 – (5% of 120) = 90 – 6 = 84 (as 5% ofthe patients had diabetes and TB) Let the number of patients having diabetes and cancer only = z

Now, x + y – z = a

or 18 + 84 – z = 102

or z = 0

53. Answer: a

Explanation:

The circumference of the track = is 30 km.

Total distance covered by car = 120 Km.

Hence, the total number of rounds taken by car = 120/30 = 4

It is known that the car starts at 10:00 am and finishes its journey at noon. That means the all-time by car to complete 120 km is 2 hrs.

As we know the car completes 4 rounds in two hours, therefore car completes one revolution in 30 minutes.

Now, we need to check each option one by one to find the required distance.

Option (b): 10:30 am - The car will have completed one revolution and will be at the starting point.

Option (c) 11:00 am - The car will have completed two revolutions and will be at the starting point.

Option (a): 11:15 am-The car will have completed two and a half revolutions and it will be ata point diametrically opposite to the starting point. This is the farthest spot from the startingpoint.

Option (a) is the correct answer.

54. Answer: b
Explanation:
Spinner A is divided into 3 equal sectors, thus the probability of the arrow falling in any ofthe sectors is 1/3. While spinner B is divided into four equal parts, thus the probability of thearrow falling in any of its sectors is 1/4.
Probability of winning a pink car = 1/3 x 1/4 = 1/12
Hence, option (b) is the correct answer.

55. Answer: b
Explanation:
The digits highlighted and marked in red in the sequence below, satisfy the condition.
%43SN40#%FF024M$WT8$NG4@N4 Thus, there are four such digits.

56. Answer: c
Explanation:

Member	Gender	Professor	Relationship
K	Female	Teacher	Wife of L; Mother of M and O
L	Male	Lawyer	Father of O and M; Son of N and P; Husband of K
M	-	Student	A grandchild of N and P; Child of K and L
N	Female	Housewife	Grandmother of O and M; Mother of L; Wife of O
O	-	Student	A grandchild of N and P; Child of K and L
P	Male	Professor	Grandfather of M and O; Father of L; Husband of N

L is the husband of K.

57. Answer: c
Explanation:
The main message of the passage is that online schooling has the potential to transform the way we think about learning and access to education, but concerns remain about its quality and effectiveness. The passage discusses the advantages of online schooling, such as its flexibility and cost-effectiveness, but also acknowledges concerns about its ability to provide personalized attention and support, as well as social interaction. Option A is incorrect because it only focuses on the cost-effectiveness of online schooling and ignores the concerns about its quality. Option B is also incorrect because it only focuses on the benefits of online schooling for non-traditional students and ignores the concerns about its effectiveness. Option D is incorrect because it presents a biased view that online schooling is the future of education, without acknowledging the concerns and challenges that need to be addressed.

58. Answer: c
Explanation:
A corollary to the passage is a logical consequence or conclusion that can be drawn from it. In this case, the corollary is that online schooling has the potential to complement traditional classroom-based education, but it is not a replacement for it. The passage discusses the advantages and disadvantages of online schooling and acknowledges that concerns remain about its quality and effectiveness. Therefore, it is unlikely that online schooling will completely replace traditional classroom-based education, but it could be used in conjunction with it to enhance and expand access to education. Option A is incorrect because it presents a biased view that online schooling is superior to traditional education, without acknowledging the benefits and limitations of each approach. Option B is also incorrect because it presents a biased view that online schooling will eventually lead to the decline of traditional education, without acknowledging the complexities of the

educational landscape. Option D is incorrect because it presents a biased view that concerns about the quality and effectiveness of online schooling are overblown, without acknowledging the need for ongoing evaluation and improvement.

59. Answer: c
Explanation:
A logical inference is a conclusion that can be drawn based on the information presented in the passage. In this case, the passage discusses the potential benefits and challenges of online schooling, and suggests that it has the potential to transform the way we think about learning and access to education. Therefore, it can be inferred that online schooling has the potential to increase access to education and transform the way we think about learning. Option A is incorrect because the passage does not suggest that online schooling will completely replace traditional classroom-based education. Option B is incorrect because the passage acknowledges concerns about the quality and effectiveness of online schooling, and does not present it as the most effective and efficient form of education. Option D is incorrect because the passage acknowledges concerns about the personalized attention and support provided by online schooling, but does not suggest that it is not a viable option for all students.

60. Answer: c
Explanation:
The tone of the author is the attitude or feeling conveyed by the language used in the passage. In this case, the author presents both the advantages and disadvantages of online schooling, and acknowledges concerns about its quality and effectiveness, indicating a neutral and objective tone. The author does not express an overly critical or dismissive attitude towards online schooling, nor do they express an overly optimistic or enthusiastic attitude. The author presents a balanced perspective on the potential of online schooling to transform education. Option A is incorrect because the author is not dismissive of the potential of online schooling, but rather presents a balanced perspective. Option B is incorrect because the author is not overly optimistic or enthusiastic, but rather presents a balanced perspective. Option D is incorrect because the author presents both sides of the argument, indicating a balanced perspective, rather than a biased or unbalanced one.

61. Answer: c
Explanation:

III	31	29	27	22	16

62. Answer: b
Explanation:
We can see from the table that least investment was made in the year 1999.

63. Answer: b
Explanation:
Percentage increase in investment in 2000 from 1999 = (165-112)/165 x 100 = 32. 125%
Percentage increase in investment in 2001 from 2000 = (179-165)/165 x 100 = 8.48%
Percentage increase in investment in 2002 from 2001 = (228-179)/179 x 100 = 27%

64. Answer: d
Explanation:
Marks obtained in each subject:
English = 55*540/360 = 82.5
Maths = 90*540/360 = 135

Hindi = 70*540/360 = 105
Science = 80*540/360 = 120
Social Science = 97.5
Difference between English and Social Science = 97.5-82.5 = 15
Difference between Maths and Science = 135-120 = 15

65. Answer: d
Explanation:
Statement 1 is incorrect. Only the last part of the passage talks about food safety systems at the global level. However, it suggests "food safety systems in and between all countries." It does not talk about a global food safety standard. Statement 2 is also incorrect as the passage has not elaborated on a link between the non-enforcement of food safety standards in the domestic market and street food. Therefore, no such conclusion as suggested in statement 2 can be derived.

66. Answer: c
Explanation:
Statement 1 is correct as given in para 2. Statement 2 is correct as street food may cause food-borne diseases in urban areas, as given in para 1. Statement 3 is incorrect as para 3 says that food adulteration does not affect food production and distribution as such, rather it is a problem because of informal food production and distribution system is deeply entrenched at the community level.

67. Answer: b
Explanation:
While option (a) sounds true, it cannot be inferred directly from the passage. Option (b) is correct and can be inferred from para 4. Option (c) cannot be inferred. Looking at para 5, it refers to the global food supply. Option (d) is also incorrect as para 3 says that "food safety standards are not always enforced ...domestic market."

68. Answer: d
Explanation:
As per the table, the Soldier can be either in the first position or in the third position and the positions of the three pictures are not known. Thus, the picture in the first position cannot be determined.
Hence, option (d) is the correct answer.
The Table:

Picture of	Emperor	Empress	Prince	Palace	Clown	Colour
Colour of frame	Grey	Brown	Red	Blue	Green or Yellow	
Name	C	A	F	E	D	B
Position from left	2nd	6th				1st or 3rd

69. Answer: c
Explanation:
The inherent pattern in the two sequences has been represented below.
Sequence I   Sequence II
$8 \times 0.5 = 4$ $5 \times 0.5 = 2.5$ (A)
$4 \times 1.5 = 6$ $2.5 \times 1.5 = 3.75$ (B)
$6 \times 2.5 = 15$ $3.75 \times 2.5 = 9.375$ (C)

15 × 3.5 = 52.5
52.5 × 4.5 = 236.25

70. Answer: d
Explanation:
The passage mentions fig trees providing food for wildlife species and supporting a density and diversity of frugivores where resources are scarce and absent. That is essentially what a keystone species signifies for an ecosystem. However, the passage is devoid of any affirmative mention of large 'woody' species giving way for the growth of fig trees in their absence. Hence, statement 2 particularly of woody species can't be inferred/ established from the passage.

The passage mentions biodiversity prevailing around fig trees in the form of frugivores, bats, animals, and humans living in co-existence. Hence, the third statement holds as a valid assumption. However, it is not the only valid assumption.

The passage mentions that plenty of seedlings of other tree species are found to grow around fig trees due to the visit of frugivorous birds and bats. Hence, under favorable micro- climatic conditions, it can be directly inferred that fig trees can have a role in the seed dispersal of the same. Hence, Statement 4 is correct.

Based on the above deductions, this is the most appropriate answer. Option (d) is correct.

71. Answer: a
Explanation:
The passage mentions that the farming practices compatible with agroecology include the integration of trees with livestock and crops. This boils down to practices of Cover cropping, Mixed farming, and Polyculture. Option (a) is correct.

The farming practices of Fertigation and Hydroponics are artificial methods and are not compatible with agroecological systems mentioned in the passage.

Hence, these can be eliminated.

Applying based on the above argument, this option can be eliminated too.

The passage mentions agroecology aiming at closing nutrient loops which means returning nutrients that come out of soil back to the soil. Vertical farming akin to hydroponics is soil-less farming and hence not compatible with agroecology.
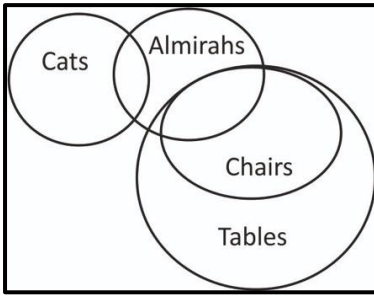
72. Answer: c
Explanation:
Based on the statements, we can have these scenarios:
Case I :
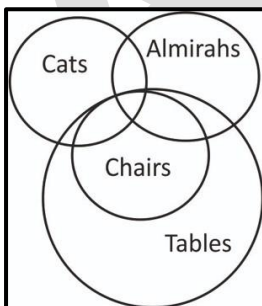
Case II :

Conclusion-I : From both diagrams, we can conclude that "Some almirahs are tables" is defenitely true. Hence, Conclusion-I follows.

Conclusion-II : From both diagrams, we can say that "Some cats may not be chairs". Hence, Conclusion-II also follows.

Hence, option (c) is the correct answer.

73. Answer: c

Explanation:

Given Height = 1.5 m = 1.5 × 100 cm = 150 cm

When ball hits the ground for the 1st time, its height = (4/5) × 150 = 120 cm When ball hits the ground for the 2nd time, its height = (4/5) × 120 = 96 cm When ball hits the ground for the 3rd time, its height = (4/5) × 96 = 76.8 cm

When ball hist the ground for the 4th time, its height = (4/5) × 76.8 = 61.44 cm When ball hits the ground for the 5th time, its height = (4/5) × 61.44 = 49.15 cm

Since, it is given that if the previous height is less than 50 cm, the ball does not bounce further. So we can say that after the ball hits the ground for the 6th time, it doesn't bounce back.

Hence, option (c) is the correct answer.

74. Answer: b

Explanation:

Price of the diesel on nth day of the year = 69 + 0.15n Price of the petrol on mth day of the year = 80 + 0.1m Where m = 1 to 100. After which it remains constant.

∴ Price of the petrol on and after 100th day = 80 + 0.1 × 100 = 80 + 10 = Rs. 90 Now, total number of days till 30th April = 31 + 28 + 31 + 30 = 120 days

Let's consider the options.

Option (a):

21st May means 120 + 21 = 141 days

∴ Price of the diesel = 69 + 0.15 × 141 = 90.15

Therefore, we can say that on 21st May 2021 price of these two fuels is not equal.

Option (b):

20th May means 120 + 20 = 140 days

∴ Price of the diesel = 69 + 0.15 × 140 = 90

Therefore, we can say that on 20th May 2021, price of these two fuels will be equal.
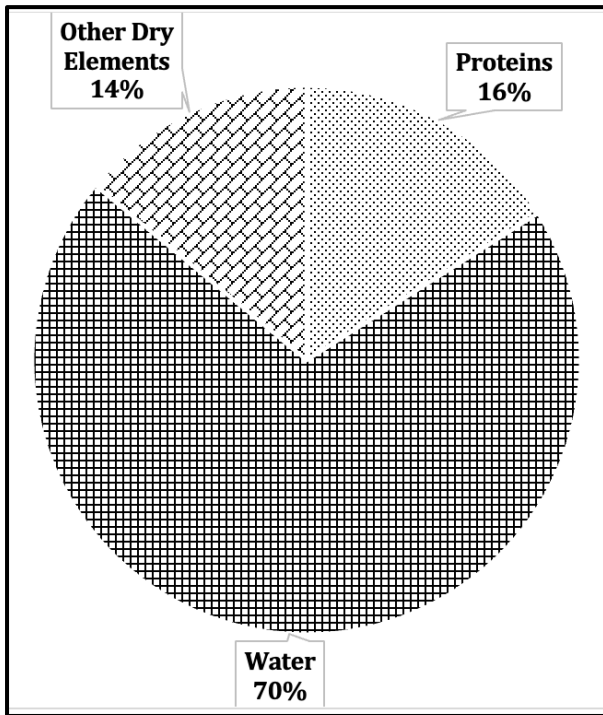
Hence, option (b) is the correct answer.

75. Answer: c

Explanation:

Percentage of Other Dry Elements in the human body = 100 – (Percentage of Proteins + Percentage of Water) = 100 – (16 + 70) = 100 – 86 = 14%

The following pie-chart represents the scenario described in the question.

So, percentage of both Proteins and Other Dry Elements, i.e. p = 16 + 14 = 30% In a pie diagram, 100% corresponds to 360 degrees.

So, 30% will correspond to (360/100) × 30 = 108 degrees.

That is, the central angle of the sector representing p on the pie diagram = 108 degrees.

76. Answer: a

Explanation:

Ratio of distribution of money among A, B and C is p : q : r. Considering statement 1:

If p > (q + r), then p is definitely the largest number.

So, A must have got the maximum share. Hence, statement 1 is correct. Considering statement 2:

If r < (p + q), then r may or may not be the smallest number. For example, 5 < (2 + 4)

So, C may or may not have got the minimum share. Hence, statement 2 is incorrect.

77. Answer: b

Explanation:

Fastest run scorer means the batsman that has the best runs scored : balls faced ratio.

For batsman A:Runs scored : Balls faced = 75/175 = 0.43

For batsman B:Runs scored : Balls faced = 55/97 = 0.57

For batsman C:Runs scored : Balls faced = 35/125 = 0.28

For batsman D:Runs scored : Balls faced = 25/105 = 0.24

The best ratio is that of batsman B.

78. Answer: a

Explanation:

Let the kid have x toffees.

Total number of rows = y

Toffees in each row = (x/y) According to the question, $(x/y) - \{x/(y+1)\} = 2$ ...(i)

$x = 2y^2 + 2y$ .....(ii)

$\{x/(y-1)\} - (x/y) = 3$ .... (iii)

From equations (i) and (iii), we get:

{x/(y-1)} – {x/(y+1)} = 5

Or 2x = 5y^2– 5 .....(iv)

On putting the value of 2x in equation (ii), we get:

5y^2 – 5 = 4y^2 + 4y

Or y^2– 4y – 5 = 0

Or (y–5) (y+1) = 0

y = 5, or –1(which is not possible because number of rows can"t be negative) From eq.(ii), we get:

x = 2×25 + 2×5 = 60

Hence, the kid had 60 toffees.

79. Answer: b

Explanation:

Let the number of wickets taken before the final match be X. Total runs given by him after final match = 12.4X + 26 After final match, his average decreased by 0.4.

Decreased average = 12.4 – 0.4 = 12

Bowling average of the match = Number of runs conceded/Number of wickets taken Total runs given by him after final match = 12 × (X + 5)

According to the question,

(12.4X + 26) = 12 × (X + 5)

Or, 12.4X + 26 = 12X + 60 Or, 0.4X = 34

X = 85

80. Answer: (a)

The divisibility rule of 8 is that if the last 3 digits are divisible by 8, so is the number. If you get a remainder when you divide the last 3 digits by 8, it will be the remainder you get when you divide the entire number by 8. If the last 3 digits are 000, this number is divisible by 8. So what you need here is the last 3 digits of this number.

You will first write the first 9 one digit numbers. Then there are 90 (from 10 to 99)

two digit numbers which will give 180 digits. But we need only 150 digits

150 – 9 = 141. We need to write first 70 two digit numbers and then the first digit of the 71st number. What will be the 70th two digit number? It will be 70 + 9 = 79 (because the first two digit number is 10). So the 71st two digit number will be 80.

The given number is 123456……7778798

When you divide 798 by 8, you get the remainder 6.

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