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How many integers, greater than 999 but not greater than 4000, can be formed with the digits 0, 1, 2, 3 and 4, if repetition of digits is allowed?

1) 499
2) 500
3) 375
4) 376
5) 501

Answer: 4

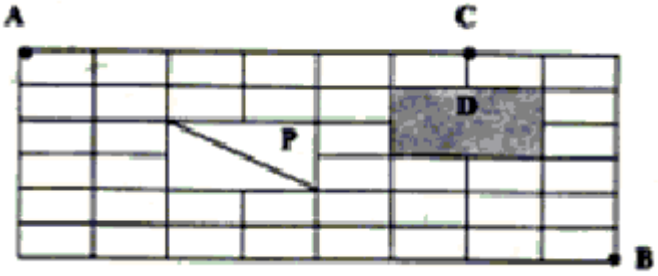
Solve: Required number of integers = 3 5 5 5 + 1 = 376.

What is the number of distinct terms in the expansion of $(a + b + c)^{20}$?

1) 231
2) 253
3) 242
4) 210
5) 228

Answer: 1
Solve: Number of distinct terms = ${}^{20+3-1}C_{3-1}$ = 231.

The figure below shows the plan of a town. The streets are at right angles to each other. A rectangular park (P) is situated inside the town with a diagonal road running through it. There is also a prohibited region (D) in the town.



Neelam rides her bicycle from her house at A to her office at B, taking the shortest path. Then the number of possible shortest paths that she can choose is

1) 60
2) 75
3) 45
4) 90
5) 72

Answer: 4

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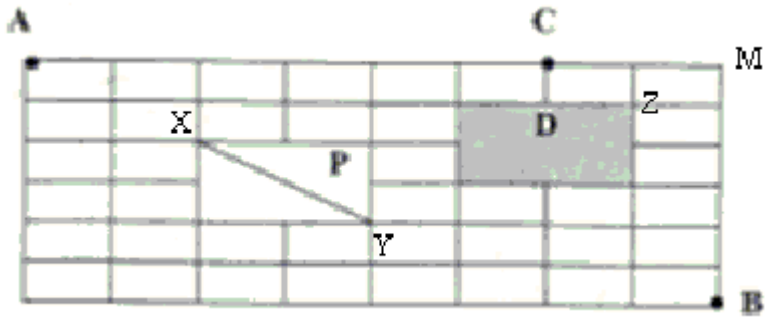
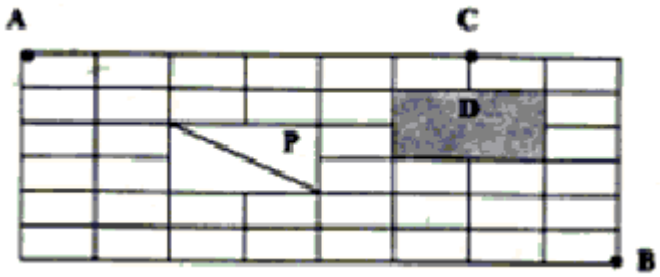
Solve:



Neelam must go from diagonal of park P for the shortest route.
She will go A to X, then X to Y and then Y to B.
Number of ways from A to X = ${}^4C_2 = 6$
Number of ways from X to Y = 1
Number of ways from Y to B = ${}^6C_2 = 15$
Total ways = $6 \times 1 \times 15 = 90$

The figure below shows the plan of a town. The streets are at right angles to each other. A rectangular park (P) is situated inside the town with a diagonal road running through it. There is also a prohibited region (D) in the town.



Neelam rides her bicycle from her house at A to her club at C, via B taking the shortest path. Then the number of possible shortest paths that she can choose is

1) 1170
2) 630
3) 792
4) 1200
5) 936

Answer: 1

Solve:

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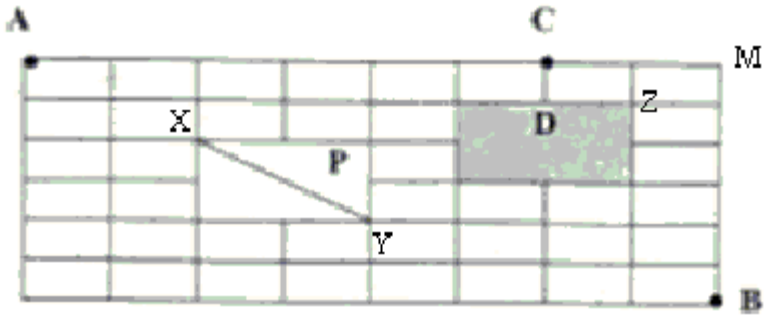

Number of ways from A to C via B = (Number of ways from A to B) $\times$ (Number of ways from B to C)
Number of ways A to B = 90 (solved in the previous question)
Number of ways B to C = (number of ways from B to Z) $\times$ (number of ways from Z to C) +
Path B – M – C = ${}^{6}C_{1} \times 2 + 1 = 12 + 1 = 13$
Total ways = 90 $\times$ 13 = 1170

What are the last two digits of 7^{2008}?

1) 21
2) 61
3) 01
4) 41
5) 81

Answer: 3

Solve: The last two digits of a number is the remainder obtained by dividing the number by 100.
Let's study the pattern of remainder:
For 7^1 – 7
For 7^2 – 49
For 7^3 – 43
For 7^4 – 01
Now, $7^{2008} = (7^4)^{502}$, so remainder for 7^{2008} is also 01.
Hence, 7^{2008} will have 01 at the last two places.

In a triangle ABC, the length of the sides AB and AC is 17.5 cm and 9 cm respectively. Let D be a point on the line segment BC such that AD is perpendicular to BC. If AD = 3 cm, then what is the radius (in cm) of the circle circumscribing the triangle ABC?

1) 17.05
2) 27.85
3) 22.45
4) 32.25
5) 26.25

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Answer: 5

Solve: Circum-radius, R = abc/4Δ

$$= \frac{17.5x9xBC}{4x1/2xBCx\ 3}$$

= 26.25

Find the sum $\sqrt{1+\frac{1}{1^2}+\frac{1}{2^2}} + \sqrt{1+\frac{1}{2^2}+\frac{1}{3^2}} + \ldots\ldots\ldots\ldots + \sqrt{1+\frac{1}{2007^2}+\frac{1}{2008^2}}$

1) 2008 – $\frac{1}{2008}$
2) 2007 – $\frac{1}{2007}$
3) 2007 – $\frac{1}{2008}$
4) 2008 – $\frac{1}{2007}$
5) 2008 – $\frac{1}{2009}$

Answer: 1

Solve: First term = $\sqrt{1+1+\frac{1}{4}} = \frac{3}{2} = 2 - \frac{1}{2}$

Sum of fist two terms = $\frac{3}{2} + \sqrt{1+\frac{1}{4}+\frac{1}{9}} = \frac{3}{2}+\frac{7}{6} = \frac{8}{3} = 3 - \frac{1}{3}$

By symmetry, required sum = 2008 – $\frac{1}{2008}$

A shop stores x kg of rice. The first customer buys half this amount plus half a kg of rice. The second customer buys half the remaining amount plus half a kg of rice. Then the third customer also buys half the remaining amount plus half a kg of rice. Thereafter, no rice is left in the shop. Which of the following best describes the value of x?

1) $2 \le x \le 6$
2) $5 \le x \le 8$
3) $9 \le x \le 12$
4) $11 \le x \le 14$
5) $13 \le x \le 18$

Answer: 2

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Solve:

	Quantity Taken	Remaining Quantity
1st man	$\frac{x}{2} + \frac{1}{2}$	$\frac{x}{2} - \frac{1}{2}$
2nd man	$\frac{x}{4} + \frac{1}{4}$	$\frac{x}{4} - \frac{1}{4}$
3rd man	$\frac{x}{8} + \frac{1}{8}$	$\frac{x}{8} - \frac{7}{8}$

After third person remaining quantity = $\frac{x}{8} - \frac{7}{8} = 0$

$x = 7$

$5 \leq x \leq 8$

Let $f(x)$ be $ax^2 + bx + c$, where a, b and c are certain constants and $a \neq 0$. It is known that $f(5) = -3f(2)$ and that 3 is a root of $f(x) = 0$.

What is the value of $a + b + c$?

1) 9
2) 14
3) 13
4) 37
5) Cannot be determined

Answer: 5

Solve: $f(x) = ax^2 + bx + c$

$f(x) = 0$ for $x = 3$

$9a + 3b + c = 0$ ..... (1)

$f(5) = -3 f(2)$

$37 a + 11b + 4c = 0$ .....(2)

From (1) and (2)

$a = b$

Sum of roots = $\frac{-b}{a} = 3 + d$ (Where d is second root)

$d = -4$

From here we are not able to find the value of $a + b + c$.

Let $f(x)$ be a function satisfying $f(x) f(y) = f(xy)$ for all real x, y. If $f(2) = 4$, then what is the value of $f(1/2.)$?

1) 0
2) 1/4
3) 1/2
4) 1

5) Cannot be determined

Answer: 2

Solve: f(x) f(y) = f (x y)
f(1) f(1) = f(1)
$\Rightarrow$ f(1) = 1, as f(1) cannot be zero.
f(2) $f\left(\frac{1}{2}\right)$ = f(1)
$\Rightarrow f\left(\frac{1}{2}\right) = \frac{1}{4}$

If the roots of the equation $x^3 - ax^2 + b - c = 0$ are three consecutive integers, then what is the smallest possible value of b?

1) $-\frac{1}{\sqrt{3}}$
2) – 1
3) 0
4) 1
5) $\frac{1}{\sqrt{3}}$

Answer: 2

Solve: Roots are $\frac{a}{3} - 1, \frac{a}{3}, \frac{a}{3} + 1$
$\therefore b = \frac{1}{3}(a^2 - 3)$
Smallest value of $a^2 - 3 = -3$
$\therefore$ Smallest value of $b = \frac{1}{3} \times (-3) = -1$

Directions: In a single elimination tournament, any player is eliminated with a single loss. The tournament is played in multiple rounds subject to the following rules:
(a) If the number of players, say n, in any round is even, then the players are grouped into n/2 pairs. The players in each pair play a match against each other and the winner moves on to the next round.
(b) If the number of players, say n, in any round is odd, then one of them is given a bye, that is, he automatically moves to the next round. The remaining (n - 1) players are grouped into (n - 1)/2 pairs. The players in each pair play a match against each other and the winner moves to the next round. No player gets more than one bye in the entire tournament.

Thus, if n is even, then n/2 players move on to the next round while if n is odd, then (n + 1)/2 players

move on to the next round. The process is continued till the final round, which obviously is played between two players. The winner in the final round is the champion of the tournament.

Q: What is the number of matches played by the champion?
A: The entry list for the tournament consists of 83 players.
B: The champion received one bye.

1) If Q can be answered from A alone but not from B alone.
2) If Q can be answered from B alone but not from A alone.
3) If Q can be answered from A alone as well as from B alone.
4) If Q can be answered from A and B together but not from any of them alone.
5) If Q cannot be answered even from A and B together.

Answer: 4

Solve: We need to combine both the statements as Statement (A) will give us the total number of matches played but will not give whether champion got a bye or not. Statement (B) says that he got a bye. So we can get a definite answer by combining both the statements.

Q: If the number of players, say n, in the first round was between 65 and 128, then what is the exact value of n?
A: Exactly one player received a bye in the entire tournament.
B: One player received a bye while moving on to the fourth round from the third round

1) If Q can be answered from A alone but not from B alone.
2) If Q can be answered from B alone but not from A alone.
3) If Q can be answered from A alone as well as from B alone.
4) If Q can be answered from A and B together but not from any of them alone.
5) If Q cannot be answered even from A and B together.

Answer: 3

Solve: Let's try to analyse it. To have a perfect match without a tie we must have the following players at the start of each round.
Final – 2 Quarter Final – 8Semi Final – 4 then – 16
– 32
– 64
– 128
Now we need to find exact number of players between 65 and 128.
Let's take each statement:
Statement (A) says exactly one player received a bye so if we have 127 players at the start, one will get bye and rest 126 will play. At the end of first round we have 63 + 1 players. After that it will be a perfect match without a bye. So, total players are 127. So we can get answer from statement (A) alone.
Now let's take **Statement (B)**
If we assume total players at the start of the match as 124, then in the
First round, we will have 62 matches
Second round, we will have 31 matches
Third round, we will have 15 matches + 1 bye

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Fourth round, 8 matches
Fifth round, 4 matches
And so on.
So, in the above combination a player is getting a bye while moving on to fourth round from third round. And we can definitely say that number of players as 124. Hence, we can get the answer from statement (B) alone as well.

The integers 1, 2, …., 40 are written on a blackboard. The following operation is then repeated 39 times: In each repetition, any two numbers, say a and b, currently on the blackboard are erased and a new number a + b – 1 is written. What will be the number left on the board at the end?

1) 820
2) 821
3) 781
4) 819
5) 780

Answer: 3

Solve: Let's start by taking small series 1, 2, 3, 4, 5.
Step I: We will remove any two numbers (a, b) and replace it with a + b – 1.
Let's climate 4 and 5

1, 2, 3, 8

Step II: Repeat the above process 1, 2, 10
Step III:Again repeat 1, 11
Step IV: Repeat the above step again. We have final number left as (1 + 11 – 1) = 11.
Now if you see carefully 11 is nothing but "sum of first 4 terms of our series +1".
i.e. (1 + 2 + 3 + 4 + 1) = 11
Now if we repeat the above procedure with series 1, 2, ……. 40, our final number should be
(1 + 2 + 3 + ….. 39) + 1

$= \frac{39}{2}(1 + 39) + 1$

$= \frac{39}{2} \times 40 + 1 = 39 \times 20 + 1 = 781$

Consider a square ABCD with midpoints E, F, G and H of AB, BC, CD and DA respectively. Let L denote the line passing through F and H. Consider points P and Q, on L and inside ABCD, such that the angles APD and BQC both equal 120^{o}. What is the ratio of the area ABQCDP to the remaining area inside ABCD?

1) $\frac{4\sqrt{2}}{3}$
2) $2 + \sqrt{3}$

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3) $\frac{10-3\sqrt{3}}{9}$

4) $1+\frac{1}{\sqrt{3}}$

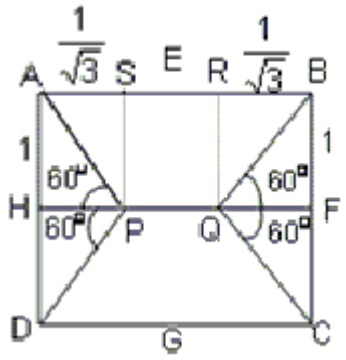
5) $2\sqrt{3}-1$

Answer: 5

Solve: Let side of square be 2,

SR = $2-\frac{1}{\sqrt{3}}-\frac{1}{\sqrt{3}}=2-\frac{2}{\sqrt{3}}$

Required ratio = $\frac{\text{Area of ABQCDP}}{\text{Area of APD + BQC}}$



$= \frac{\text{Area of APQB}}{\text{Area of APH + BQF}}$

$= \frac{\frac{1}{2}(PQ+AB)\times SP}{2\times\frac{1}{2}\times AH\times PH}$

$= \frac{\frac{1}{2}\left(2-\frac{2}{\sqrt{3}}+2\right)}{\frac{1}{\sqrt{3}}} = 2\sqrt{3}-1$

Consider obtuse angled triangles with sides 8 cm, 15 cm and x cm. If x is an integer, then how many such triangles exist?

1) 5
2) 21
3) 10
4) 15
5) 14

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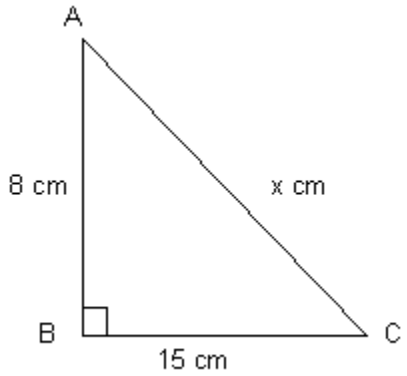
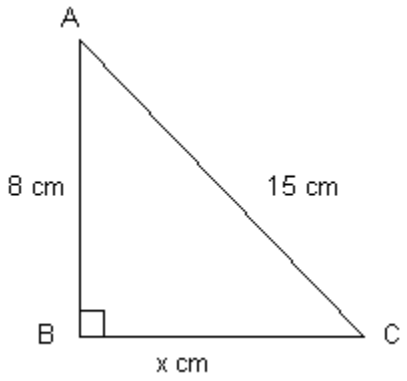
Answer: 3

Solve: Let's take the following case first.
Let's assume that right angled triangle and x are hypotenuse.
Now solving we get x = 17 cm
For x = 17 cm, ABC is a right angled triangle.



But we need ABC as an obtuse angled triangle
So x can take values in the range
$17 < x < 23$
So x can have 5 values.
With the above combination there are 5 obtuse angled triangles.
Now take the second case.
Here x is 12.6 cm
So far triangle to be obtuse angled, x must lie in the range.



So in total we can have 10 obtuse angled triangles.

Three consecutive positive integers are raised to the first, second and third power respectively and then added. The sum so obtained is a perfect square whose square root equals the total of the three original integers. Which of the following best describes the minimum, say m, of these three integers?

1) $1 \le m \le 3$
2) $4 \le m \le 6$
3) $7 \le m \le 9$

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4) $10 \le m \le 12$
5) $13 \le m \le 15$

Answer: 1

Solve: You can safely eliminate option (4) and (5) because these values are very high and then cube will run into big numbers.
From the first option, of we take m as 3 then the numbers are 3, 4 and 5.
Let's check the given conditions:
$3^1 + 4^2 + 5^3 = 3 + 16 + 125 = 144$
Now $\sqrt{144}$ = 12 which is nothing but some of our numbers (3, 4 and 5)

Five horses, red, white, grey, black and spotted participated in a race. As per the rules of the race, the persons betting on the winning horse get four times the bet amount and those betting on the horse that came in second get thrice the bet amount. Moreover, the bet amount is returned to those betting on the horse that came in third, and the rest lose the bet amount. Raju bets Rs. 3000, Rs. 2000 and Rs. 1000 on the red, white and black horses respectively and ends up with no profits and no loss.
Which of the following cannot be true?

1) Which of the following cannot be true?
2) The red horse finished last.
3) There were three horses between the black and the spotted.
4) There were three horses between the white and the red.
5) The grey horse came second.

Answer: 4

Solve: The possible cases are
(B – Black, W – White, R – Red)

Position →	1	2	3	4	5
Case 1		W		R	B
Case2		W			R
Case3	B		W	R	
Case4	B		W		R

In all cases, there cannot be three horses between white and red.

Suppose in addition, it is known that grey came in fourth. Then which of the following cannot be true?

1) Spotted came in first.
2) Red finished last.
3) White came in second.
4) Black came in second.
5) There was one horse between black and white.

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Answer: 3

Solve: Raju spent Rs. 6000 on betting, so he must have Rs. 6000 at the end.
The possible cases are
(B – Black, W – White, R – Red)

Positio →	1	2	3	4	5
Case 1		W		R	B
Case2		W			R
Case3	B		W	R	
Case4	B		W		R

If grey is fourth, then it must be case 4, and white must be at third position.

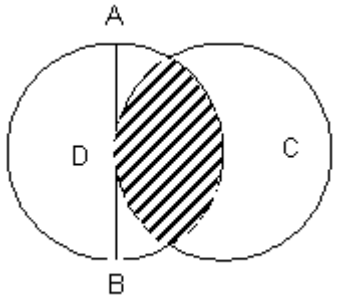
Two circles, both of radii 1 cm, intersect such that the circumference of each one passes through the center of the other. What is the area (in sq. cm) of the intersecting region?

1) $\frac{\pi}{3}-\frac{\sqrt{3}}{4}$
2) $\frac{2\pi}{3}+\frac{\sqrt{3}}{2}$
3) $\frac{4\pi}{3}-\frac{\sqrt{3}}{2}$
4) $\frac{4\pi}{3}+\frac{\sqrt{3}}{2}$
5) $\frac{2\pi}{3}-\frac{\sqrt{3}}{2}$

Answer: 5

Solve: One point is sure that shaded area is less than half the area of circle.

It means shaded area must be < $\frac{\pi r^2}{2}$



Example: $\pi\times\frac{1}{2}$ < $\frac{\pi}{2}$ = 1.57 cm

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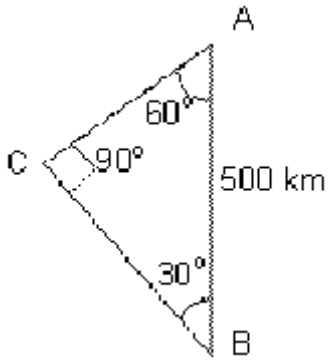
Now you can easily eliminate (2) and (4) options. Even if you just check option (3) is much more than our required answer (1.57 cm). Well if you do a bit of calculations option (1) gives 0.6 and option (5) as 1.23. Out of these, (5) is closer to our answer.

Rahim plans to drive from city A to station C, at the speed of 70 km per hour to catch a train arriving there from B. He must reach C at least 15 minutes before the arrival of the train. The train leaves B, located 500 km south of A at 8:00 am and travels at a speed of 50 km per hour. It is known that C is located between west and northwest of B, with BC at 600 to AB. Also, C is located southwest of A with AC at 300 to AB. The latest time by which Rahim must leave A and still catch the train is closest to

1) 6:15 am
2) 6:30 am
3) 6:45 am
4) 7:00 am
5) 7:15 am

Solve: As shown ABC is a right triangle.
Where AB = 500
$\angle A = 60^o$, $\angle B = 30^o$,

So, AC = 250 $\sqrt{3}$ and BC = 250
The train has to cover distance BC = 250 km.



Speed of train = 50 km/h
Speed of train = 50 km/h

Hence, time taken by train to reach C from B = $\frac{250}{50}$ = 5 hours.
Since train starts at 8 am, it will reach C at 1 pm.
Rahim has to reach 15 minutes earlier.
So he should reach C at 12 : 45 pm.
Speed of Rahim = 70 km/h

Distance to be covered by Rahim, AC = 250 $\sqrt{3}$

Time taken by Rahim = $\frac{250\sqrt{3}}{70}$ = 6.18 hours = 6 hours and 18 minutes.
So, latest he can leave A at 6:30 a.m.

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Suppose, the seed of any positive integer n is defined as follows:
Seed(n) = n, if n < 10
= seed(s(n)), otherwise, where s(n) indicates the sum of digits of n. For example, seed(7) = 7, seed(248) = seed (2 + 4 + 8) = seed (1 + 4) = seed (5) = 5 etc.

How many positive integers n, such that n < 500, will have seed(n) = 9?

1) 39
2) 72
3) 81
4) 108
5) 55

Answer: 5

Solve: The required numbers will be 9, 18, …… 495 (sum of digits should be multiple of 9)
This is an A.P whose first term is 9 and last term is 495
Last term = a + (n – 1)d
495 = 9 + (n – 1) 9
486 = (n – 1) 9
(n – 1) = 54
n = 55

Directions:
Answer the following question based on the information given below.
There are 100 employees in an organisation across five departments. The following table gives the department-wise distribution of average age, average basic pay and allowances. The gross pay of an employee is the sum of his/her basic pay and allowances.

Department	Number of Employees	Average Age (Years)	Average Basic Pay (Rs.)	Allowances (% of Basic Pay)
HR	5	45	5000	70
Marketing	30	35	6000	80
Finance	20	30	6500	60
Business Development	35	42	7500	75
Maintenance	10	35	5500	50

There are limited number of employees considered for transfer/promotion across departments.

Whenever a person is transferred/promoted from a department of lower average age to a department of higher average age, he/she will get an additional allowance of 10% of basic pay over and above his/her current allowance. There will not be any change in pay structure if a person is transferred/promoted from a department with higher average age to a department with lower average

age.

There was a mutual transfer of an employee between marketing and finance department and transfer of one employee from marketing to HR. As a result, the average age of finance department increased by one year and that of marketing department remained the same. What is the new average age of HR department?

1) 30
2) 35
3) 40
4) 45
5) Cannot be determined

Answer: 3

Solve: The mutual transfer of an employee between marketing and finance increases the average age of finance by one year. So the aggregate age of marketing people decreases by 20 years. The transfer of one employee from marketing to HR. Again makes the average of marketing people same as before so the person who joined HR must be of age 35 – 20 = 15 years. So now the average age of HR department equals to $\frac{45 \times 5 + 15}{6}$ = 40.

What is the approximate percentage change in the average gross pay of the HR department due to transfer of a 40 year old person with basic pay of Rs. 8000 from the marketing department?

1) 9%
2) 11%
3) 13%
4) 15%
5) 17%

Answer: 3

Solve: If a 40 year old person is transfered from marketing to HR his allowances increase by 10% of his basic pay. So his gross pay will become 8000 + 90% of 8000 = 15200, whereas the average gross pay of HR is 5000 + 70% of 5000 = 8500. So if the marketing person joins HR, the average increases by $\frac{15200 - 8500}{6}$ = 1116. The percentage change equals to $\frac{1116}{8500} \times 100 = 13\%$

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If two employees (each with a basic pay of Rs. 6000) are transferred from maintenance department to HR department and one person (with a basic pay of Rs. 8000) was transferred from marketing department to HR department, what will be the percentage change in average basic pay of HR department?

1) 10.5%
2) 12.5%
3) 15%
4) 30%
5) 40%

Answer: 2

Solve: Total three persons joining HR department with the basic salary of 20000 (together) the average basic pay increases by $\frac{5000}{8}$ because of this. So the percentage change in the basic pay of HR department = $\frac{\frac{5000}{8}}{5000} \times 100 = 12.5\%$.

Directions: Answer the following question based on the information given below:

Abdul, Bikram and Chetan are three professional traders who trade in shares of a company XYZ Ltd. Abdul follows the strategy of buying at the opening of the day at 10 am and selling the whole lot at the close of the day at 3 pm. Bikram follows the strategy of buying at hourly intervals: 10 am, 11 am, 12 noon, 1 pm and 2 pm, and selling the whole lot at the close of the day. Further, he buys an equal number of shares in each purchase. Chetan follows a similar pattern as Bikram but his strategy is somewhat different. Chetan's total investment amount is divided equally among his purchases. The profit or loss made by each investor is the difference between the sale value at the close of the day less the investment in purchase. The return for each investor is defined as the ratio of the profit or loss to the investment amount expressed as a percentage.

Which one of the following statements is always true?

1) Abdul will not be the one with the minimum return.
2) Return for Chetan will be higher than that of Bikram.
3) Return for Bikram will be higher than that of Chetan.
4) Return for Chetan cannot be higher than that of Abdul.
5) none of these

Answer: 5

Solve: Since nothing is mentioned about the beginning price and closing price and the prices in between, we cannot assure any of the first four options.

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On a “boom” day the price of XYZ Ltd. keeps rising throughout the day and peaks at the close of the day. Which trader got the minimum return on that day?

1) Bikram
2) Chetan
3) Abdul
4) Abdul or Chetan
5) Cannot be determined

Answer: 1

Solve: Abdul bought the shares at 10 a.m. hence, he will get maximum return. Chetan invested equal amount, he will buy more shares of low price, whereas Bikram purchased equal numbers of shares so Bikram will get minimum return.

On a day of fluctuating market prices, the share price of XYZ Ltd. ends with a gain, i.e., it is higher at the close of the day compared to the opening value. Which trader got the maximum return on that day?

1) Bikram
2) Chetan
3) Abdul
4) Bikram or Chetan
5) Cannot be determined

Answer: 5

Solve: We know that only the closing price is greater than the beginning price but we don’t know how it changes in between, so we cannot answer this question.

Which of the following is necessarily false?

1) Share price was at its lowest at 2 pm.
2) Share price was at its lowest at 11 am.
3) Share price at 1 pm was higher than the share price at 2 pm.
4) Share price at 1 pm was higher than the share price at 12 noon.
5) None of these

Answer: 2

Solve: Abdul lost his money means the closing price is less than the price at 10 a.m.
The price at 2 p.m. is less than the closing price and the price at 12 noon was lower than the opening price. It is given that Dane and Emily made profits. Dane can make profit only if the price at 1 p.m. is less than the closing price. Since Emily also got profit, the price at 11 a.m. should be the least.
(because the price at 10 is greater than the price at 3 p.m. and the price at 12 noon is greater than the

price at 1 p.m. (Dane got profit)).

Directions: Answer the following question based on the information given below:
One day, two other traders, Dane and Emily joined Abdul, Bikram and Chetan for trading in the shares of XYZ Ltd. Dane followed a strategy of buying equal numbers of shares at 10 am, 11 am and 12 noon, and selling the same numbers at 1 pm, 2 pm and 3 pm. Emily, on the other hand, followed the strategy of buying shares using all her money at 10 am and selling all of them at 12 noon and again buying the shares for all the money at 1 pm and again selling all of them at the close of the day at 3 pm. At the close of the day the following was observed:
i. Abdul lost money in the transactions.
ii. Both Dane and Emily made profits.
iii. There was an increase in share price during the closing hour compared to the price at 2 pm.
iv. Share price at 12 noon was lower than the opening price.

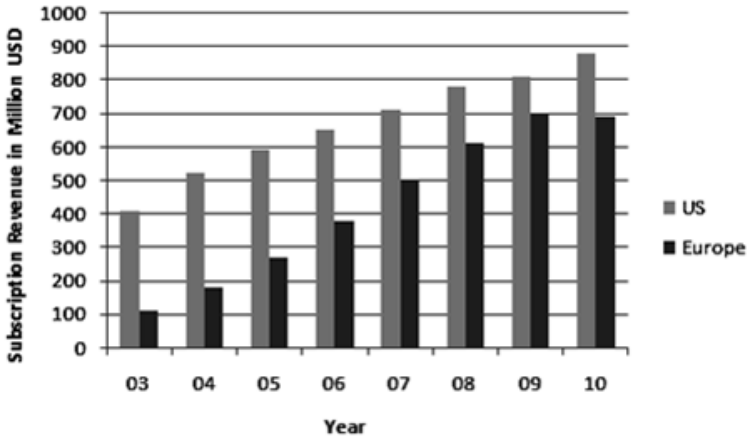
Share price was at its highest at

1) 10 am
2) 11 am
3) 12 noon
4) 1 pm
5) cannot be determined

Answer: 1

Solve: Same as before the price at 10 a.m. must be the highest.

Directions: Answer the following question based on the information given below:
The bar chart below shows the revenue received, in million US dollars (USD), from subscribers to a particular Internet service. The data covers the period 2003 to 2007 for the United States (US) and Europe.
The bar chart also shows the estimate revenues from the subscription to this service for the period 2008 to 2010.



CAT 2008

In 2003, sixty percent of subscribers in Europe were men. Given that woman subscribers increase at the rate of 10 percent per annum and men at the rate of 5 percent per annum. What is the approximate percentage growth of subscribers between 2003 and 2010 in Europe? The subscription prices are volatile and may change each year.

1) 62
2) 15
3) 78
4) 84
5) 50

Answer: 1

Solve: In 2010, total subscribers = $60(1.05)^7 + 40(1.1)^7 = 84.4 + 77.9 = 162.34$

Percentage growth over 2003 = $\frac{162.34 - 100}{100} \approx 62\%$

Consider the annual percent change in the gap between subscription revenues in the US and Europe. What is the year in which the absolute value of this change is the highest?

1) 03-04
2) 05-06
3) 06-07
4) 08-09
5) 09-10

Answer: 4

Solve: Percent change in the gap between subscription revenues in the US and Europe

For 03 – 04 = $\frac{340 - 300}{300} = \frac{40}{300} = \frac{2}{15}$

For 05 – 06 = $\frac{270 - 340}{340} = \frac{-70}{340} = \frac{-7}{34}$

For 06 – 07 = $\frac{210 - 270}{270} = \frac{-60}{270} = \frac{-2}{9}$

For 08 – 09 = $\frac{110 - 180}{180} = \frac{-70}{180} = \frac{-7}{18}$

For 09 – 10 = $\frac{100 - 110}{110} = \frac{-10}{110} = \frac{-1}{11}$

Absolute value is the highest in year 08 -09.

While the subscription in Europe has been growing steadily towards that of the US, the growth rate in Europe seems to be declining. Which of the following is closest to the percent change in growth rate of 2007 (over 2006) relative to the growth rate of 2005 (over 2004)?

CAT 2008

1) 17
2) 20
3) 35
4) 60
5) 100

Answer: 4

Solve: Percent change in growth of 2007 (over 2006) = $\frac{500 - 390}{390} \approx 28$ %

Percent change in growth of 2005(over 2004) = $\frac{280 - 190}{190} = \frac{90}{190} \approx 47\%$

Relative change =

$$\frac{28}{47} \approx 60\%$$

The difference between the estimated subscription in Europe in 2008 and what it would have been if it were computed using the percentage growth rate of 2007 (over 2006), is closest to

1) 50
2) 80
3) 20
4) 10
5) 0

Answer: 1

Solve: Percent growth of 2007 over 2006 = $\frac{500 - 390}{390} \approx 28\%$

Estimated subscription in 2008 = 1.28 × 500 = 640

Given estimation $\approx$ 600

Difference = 40 $\approx$ 50

Directions: Answer the following question based on the statements given below:

(i) There are three houses on each side of the road.
(ii) These six houses are labeled as P, Q, R, S, T and U.
(iii) The houses are of different colours, namely, Red, Blue, Green, Orange, Yellow and White.
(iv) The houses are of different heights.
(v) T, the tallest house, is exactly opposite to the Red coloured house.
(vi) The shortest house is exactly opposite to the Green coloured house.
(vii) U, the Orange coloured house, is located between P and S.
(viii) R, the Yellow coloured house, is exactly opposite to P.
(ix) Q, the Green coloured house, is exactly opposite to U.
(x) P, the White coloured house, is taller than R, but shorter than S and Q.

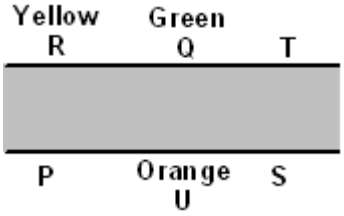
CAT 2008

Which is the second tallest house?

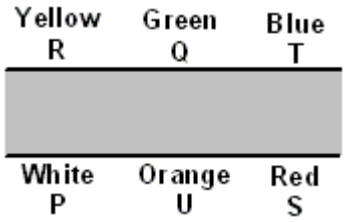
1) P
2) S
3) Q
4) R
5) Cannot be determined

Answer: 5

Solve: From the statements (vii), (viii) and (ix)



From (v) and (vi) T, is the tallest house and it is opposite to the red house, hence, house S is red and U is the shortest from (x) P is white and R is the second shortest. So the final arrangement is shown below.



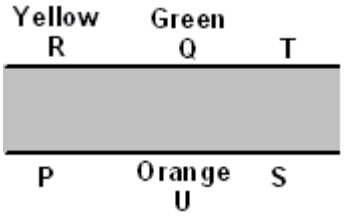
S or Q can be the second tallest house.

What is the colour of the tallest house?

1) Red
2) Blue
3) Green
4) Yellow
5) none of these

Solve: From the statements (vii), (viii) and (ix)

CAT 2008



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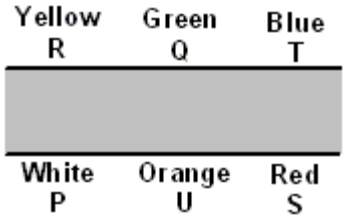
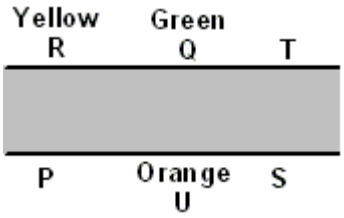


What is the colour of the house diagonally opposite to the yellow coloured house?

1) White
2) Blue
3) Green
4) Red
5) None of these

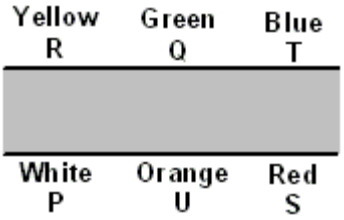
Answer: 4

Solve: From the statements (vii), (viii) and (ix)



From (v) and (vi) T, is the tallest house and it is opposite to red house, hence, house S is red and U is the shortest from (x) P is white and R is the second shortest. So the final arrangement is shown below.

CAT 2008



Directions: Answer the following question based on the information given below:
In a sports event, six teams (A, B, C, D, E and F) are competing against each other. Matches are scheduled in two stages. Each team plays three matches in stage-I and two matches in stage-II. No team plays against the same team more than once in the event. No ties are permitted in any of the matches. The observations after the completion of stage-I and stage-II are as given below.

Stage-I:

- One team won all the three matches.
- Two teams lost all the matches.
- D lost to A but won against C and F.
- E lost to B but won against C and F.
- B lost at least one match.
- F did not play against the top team of stage-I.

Stage-II:

- The leader of stage-I lost the next two matches.
- Of the two teams at the bottom after stage-I, one team won both matches, while the other lost both matches.

One more team lost both matches in stage-II.

The only team(s) that won both the matches in stage-II is (are)

1) B
2) E and F
3) A, E and F
4) B, E and F
5) B and F

Answer: 4

The team(s) with the most wins in the event is (are)

1) A
2) A and C
3) F

CAT 2008

4) E
5) B and E

Answer; 5

The two teams that defeated the leader of stage I are

1) F and D
2) E and F
3) B and D
4) E and D
5) None of these

Answer: 2

Solve: From the given information we can form the following table.

Stage I

	A	**B**	**C**	**D**	**E**	**F**
Win	B/C/D	E/F		C/F	C/F	
Loss		A	A/D/E	A	B	B/D/E

Stage II

	A	**B**	**C**	**D**	**E**	**F**
Win		C/D			A/D	A/C
Loss	E/F		B/F	B/E		

Directions: Answer the following question based on the information given below:

Telecom operators get revenue from transfer of data and voice. Average revenue received from transfer of each unit of data is known as ARDT. In the diagram below, the revenue received from data transfer as percentage of total revenue received and the ARDT in US dollars (USD) are given for various countries.

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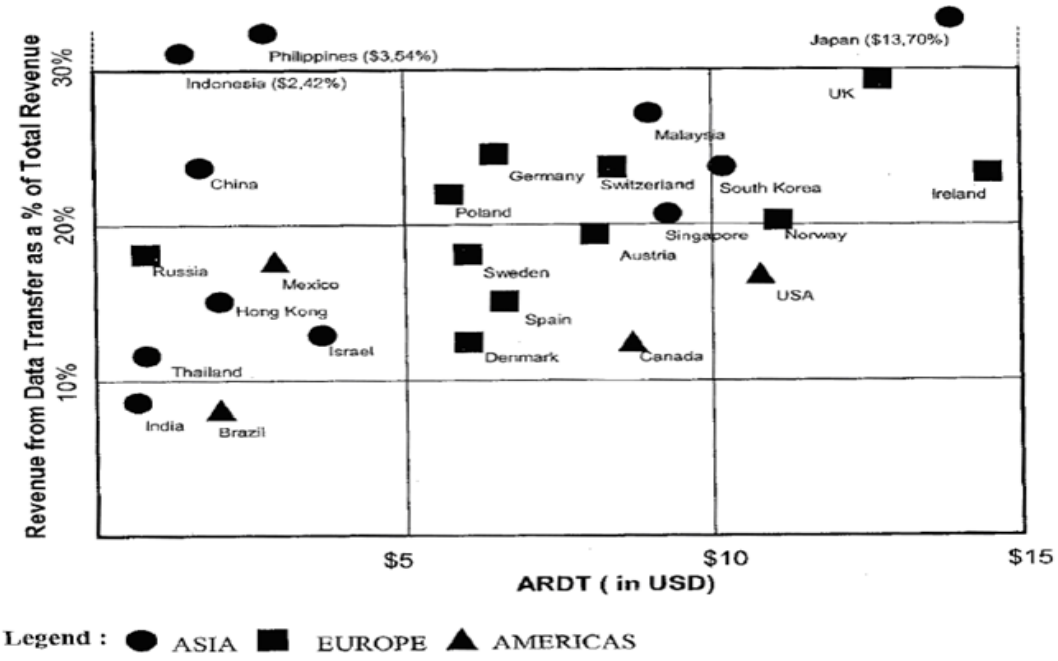

Legend : ● ASIA ■ EUROPE ▲ AMERICAS

It is expected that by 2010, revenue from the data transfer as a percentage of total revenue will triple for India and double for Sweden. Assume that in 2010, the total revenue in India is twice that of Sweden and that the volume of data transfer is the same in both the countries. What is the percentage increase of ARDT in India if there is no change in ARDT in Sweden?

1) 400%
2) 550%
3) 800%
4) 950%
5) Cannot be determined

Answer: 3

Solve: By 2010 the revenue from data transfer will be 27% (9 × 3) of total in India and 36% (18 × 2) in Sweden. If x is the total revenue in Sweden, 2x will be the revenue in India. The ARDT in Sweden is $6.

So in India it will be $\frac{27\% \text{ of } 2x}{36\% \text{ of } x} \times \$6 = \$9$

So the percentage increase is 800% (because the ARDT in India was $1 before).

If the total revenue received is the same for the pairs of countries listed in the choices below, choose the pair that has approximately the same volume of data transfer.

1) Philippines and Austria
2) Canada and Poland
3) Germany and USA
4) UK and Spain

5) Denmark and Mexico

Answer: 4

Solve: Going with the options, the fourth options satisfies. For UK it is $\frac{30\% \text{ of total revenue}}{12.5}$.

For Spain it is $\frac{15\% \text{ of total revenue}}{7}$.

Since total revenue is same (given). Both the values are almost equal.

It was found that the volume of data transfer in India is the same as that of Singapore. Then which of the following statement/s is/are true?

1) Total revenue is the same in both countries.
2) Total revenue in India is about 2 times that of Singapore.
3) Total revenue in India is about 4 times that of Singapore.
4) Total revenue in Singapore is about 2 times that of India.
5) Total revenue in Singapore is about 4 times that of India.

Answer: 5

Solve: If X is the volume of data transfer,
X($1) = 8% of total revenue (India). So total revenue in India = 12.5 X.
X($9) = 21% of total revenue. (Singapore). So, total revenue in Singapore = 45X.

Directions: Answer the following question based on the information given below:
For admission to various affiliated colleges, a university conducts a written test with four different sections, each with a maximum of 50 marks. The following table gives the aggregate as well as the sectional cut-off marks fixed by six different colleges affiliated to the university. A student will get admission only if he/she gets marks greater than or equal to the cut-off marks in each of the section and his/her aggregate marks are at least equal to the aggregate cut-off marks as specified by the college.

	Sectional Cut-off Marks				Aggregate Cut-off Marks
	Section A	Section B	Section C	Section D	
College 1	42	42	42		176
College 2		45	45		175
College 3			46		171
College 4	43			45	178
College 5	45		43		180
College 6		41		44	176

CAT 2008

Charlie got calls from two colleges. What could be the minimum marks obtained by him in a section?

1) 0
2) 21
3) 25
4) 35
5) 41

Answer: 3

Solve: If we assume that Charlie get calls from college 2 and college 3 he can score 25 in section A and 50 each in the remaining sections his total will be 175. Which is the aggregate cut off marks for college 2 and college 3. So he can get a minimum of 25 marks in one section.

Aditya did not get a call from even a single college. What could be the maximum aggregate marks obtained by him?

1) 181
2) 176
3) 184
4) 196
5) 190

Answer: 3

Solve: If Aditya gets 41 in section C and 43 in section D and 50 each in A and B he doesn't get any call so the maximum marks that he can score is 50 + 50 + 41 + 43 = 184.

Bhama got calls from all colleges. What could be the minimum aggregate marks obtained by her?

1) 180
2) 181
3) 196
4) 176
5) 184

Answer: 2

Solve: If she gets 45 in section A, 45 in section B, 46 in section C and 45 in section D, she will get all the calls. So the minimum marks obtained by her is 45 + 45 + 46 + 45 = 181.

CAT 2008

Directions: The sentence has two blanks. Choose the pair that best completes the sentence.

The genocides in Bosnia and Rwanda, apart from being mis-described in the most sinister and _____ manner as 'ethnic cleansing', were also blamed, in further hand-washing rhetoric, on something dark and interior to _____ and perpetrators alike.

1) innovative, communicator
2) enchanting, leaders
3) disingenuous, victims
4) exigent, exploiters
5) tragic, sufferers

Answer: 3

Solve: The first filler should go with 'sinister' which is a strongly negative word. The choice is between options 3 and 5 only. 'Sinister' is a design same as 'disingenuous'. 'Tragic' is an occurrence, not a design. Also 'victims' will go with 'perpetrators' for the second filler.

Directions: The sentence has two blanks. Choose the pair that best completes the sentence.

As navigators, calendar makers and other _____ of the night sky accumulated evidence to the contrary, ancient astronomers were forced to _____ that certain bodies might move in circles about points, which in turn moved in circles about the earth.

1) scrutinizers, believe
2) observers, agree
3) scrutinizers, suggest
4) observers, concede
5) students, conclude

Answer: 4

Solve: For the first filler, options number 1, 3 and 5 do not fit cogently with 'navigators and calendar makers'. That limits our choice only to 2 and 4. When you accept the other person's opinion reluctantly, the proper usage should be 'concede'.

Directions: The sentence has two blanks. Choose the pair that best completes the sentence.

Every human being, after the first few days of his life, is a product of two factors: on the one hand, there is his _____ endowment; and on the other hand, there is the effect of environment, including _____.

1) constitutional, weather

2) congenital, education
3) personal, climate
4) economic, learning
5) genetic, pedagogy

Answer: 5

Solve: A human being is a product of his genetics and his upbringing. Such upbringing should also include education or 'pedagogy'.

Directions: The sentence has two blanks. Choose the pair that best completes the sentence.

Exhaustion of natural resources, destruction of individual initiative by governments, control over men's minds by central _____ of education and propaganda are some of the major evils which appear to be on the increase as a result of the impact of science upon minds suited by _____ to an earlier kind of world.

1) tenets, fixation
2) aspects, inhibitions
3) institutions, inhibitions
4) organs, tradition
5) departments, repulsion

Answer: 1

Solve: Science has progressed, but the human mind is fixated to the past. Also the control over men's minds is exercised by central principles or 'tenets' of education.

Directions: The word in bold has been used in five different sentences. Choose the sentence where the usage of the given word is incorrect or inappropriate.

Run

1) I must run fast to catch up with him.
2) Our team scored a goal against the run of play.
3) You can't run over him like that.
4) The newly released book is enjoying a popular run.
5) This film is a run-of-the-mill production.

Answer: 3

Solve: 'Run over' means 'to be crushed'. One person can't run over another

CAT 2008

Directions: The word in bold has been used in five different sentences. Choose the sentence where the usage of the given word is incorrect or inappropriate.

Round

1) The police fired a round of tear gas shells.
2) The shop is located round the corner.
3) We took a ride on the merry-go-round.
4) The doctor is on a hospital round.
5) I shall proceed further only after you come round to admitting it.

Answer: 5

Solve: The correct usage in this sentence should be 'around'.

Directions: The word in bold has been used in five different sentences. Choose the sentence where the usage of the given word is incorrect or inappropriate.

Buckle

1) After the long hike our knees were beginning to buckle.
2) The horse suddenly broke into a buckle.
3) The accused did not buckle under police interrogation.
4) Sometimes, an earthquake can make a bridge buckle.
5) People should learn to buckle up as soon as they get into a car.

Answer: 2

Solve: 'Buckle' means to yield or to give way. We also use buckle to tighten our belt. All sentences, except 2 fit these meanings.

Directions: The word in bold has been used in five different sentences. Choose the sentence where the usage of the given word is incorrect or inappropriate.

File

1) You will find the paper in the file under C.
2) I need to file an insurance claim.
3) The cadets were marching in a single file.
4) File your nails before you apply nail polish.
5) When the parade was on, a soldier broke the file.

CAT 2008

Answer: 5

Solve: In sentence (5), the correct usage should be 'broke the ranks'.

Directions: In the question, there are five sentences. Each sentence has a pair of words that are italicized and highlighted. From the italicized and highlighted words, select the most appropriate word (A or B) to form correct sentences. The sentences are followed by options that indicate the words, which may be selected to correctly complete the set of sentences. From the options given, choose the most appropriate one.

Anita wore a beautiful ***broach(A)/brooch(B)*** on the lapel of her jacket.
If you want to complain about the amenities in your neighbourhood, please meet your ***councillor(A)/counsellor(B).***
I would like your ***advice(A)/advise(B)*** on which job I should choose.
The last scene provided a ***climactic(A)/climatic(B)*** ending to the film.
Jeans that ***flair(A)/flare(B)*** at the bottom are in fashion these days.

1) BABAA
2) BABAB
3) BAAAB
4) ABABA
5) BAABA

Answer: 3

Solve: Brooch is an ornament use on the lapel of a coat or jacket. One should meet the local 'councillor' for neighbourhood complaints. We have to use the noun 'advice' in sentence 3. In sentence 4, we are talking of the climax of the film. Hence, the word to be used is 'climactic'.

Directions: In the question, there are five sentences. Each sentence has a pair of words that are italicized and highlighted. From the italicized and highlighted words, select the most appropriate word (A or B) to form correct sentences. The sentences are followed by options that indicate the words, which may be selected to correctly complete the set of sentences. From the options given, choose the most appropriate one.

The cake had lots of ***currents(A)/currants(B)*** and nuts in it.
If you engage in such ***exceptional(A)/exceptionable(B)*** behaviour, I will be forced to punish you.
He has the same capacity as an adult to ***consent(A)/assent(B)*** to surgical treatment.
The minister is ***obliged(A)/compelled(B)*** to report regularly to a parliamentary board.
His analysis of the situation is far too ***sanguine(A)/genuine(B).***

1) BBABA
2) BBAAA

3) BBBBA
4) ABBAB
5) BABAB

Answer: 2

Solve: 'Currant' is a type of dry fruit. 'Exceptionable' is the behaviour that we take exception to. 'Assent' is approval granted when you are in a superior position. Here the sense conveyed is different. So the appropriate usage is 'consent'. The minister is 'obliged' not 'compelled'. Likewise the analysis of the situation is far too optimistic or 'sanguine'

Directions: In the question, there are five sentences. Each sentence has a pair of words that are italicized and highlighted. From the italicized and highlighted words, select the most appropriate word (A or B) to form correct sentences. The sentences are followed by options that indicate the words, which may be selected to correctly complete the set of sentences. From the options given, choose the most appropriate one.

She managed to bite back the ***ironic(A)/caustic(B)*** retort on the tip of her tongue.
He gave an impassioned and ***valid(A)/cogent(B)*** plea for judicial reform.
I am not ***adverse(A)/averse(B)*** to helping out.
The ***coupe(A)/coup(B)*** broke away as the train climbed the hill.
They heard the bells ***peeling(A)/pealing(B)*** far and wide.

1) BBABA
2) BBBAB
3) BAABB
4) ABBAA
5) BBBBA

Answer: 2

Solve: A biting comment is 'caustic'. A plea is 'cogent'. If we are open to something, we are not 'averse'. A two-seater in a train is a 'coupe'

Directions: In the question, there are five sentences. Each sentence has a pair of words that are italicized and highlighted. From the italicized and highlighted words, select the most appropriate word (A or B) to form correct sentences. The sentences are followed by options that indicate the words, which may be selected to correctly complete the set of sentences. From the options given, choose the most appropriate one.

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We were not successful in ***defusing(A)/diffusing(B)*** the Guru's ideas.
The students ***baited(A)/bated(B)*** the instructor with irrelevant questions.
The ***hoard(A)horde(B)*** rushed into the campus.
The prisoner's ***interment(A)/internment(B)*** came to an end with his early release.
The hockey team could not deal with his ***unsociable(A)/unsocial(B)*** **tendencies.**

1) BABBA
2) BBABB
3) BABAA
4) ABBAB
5) AABBA

Answer: 1

Solve: Spreading a message or idea is 'diffusing'. 'Bait' is a trap. A crowd is a 'horde'. Confinement is 'internment'. Somebody's behaviour is unsociable'

Directions: In the following question there are sentences that form a paragraph. Identify the sentence(s) or part(s) of sentence(s) that is/are correct in terms of grammar and usage (including spelling, punctuation and logical consistency). Then, choose the most appropriate option.

A. In 1849, a poor Bavarian imigrant named Levi Strauss
B. landed in San Francisco, California,
C. at the invitation of his brother-in-law David Stem
D. owner of dry goods business.
E. This dry goods business would later became known as Levi Strauss & Company.

1) B only
2) B and C
3) A and B
4) A only
5) A, B and D

Answer: 1

Solve: Statement A is eliminated due to incorrect spellings of the word 'immigrant'. Statement C is incorrect as there is no comma after 'brother-in-law'. Statement D should use article 'a' for a particular business. In statement E, verb 'became' is incorrect.

Directions: In the following question there are sentences that form a paragraph. Identify the sentence(s) or part(s) of sentence(s) that is/are correct in terms of grammar and usage (including spelling, punctuation and logical consistency). Then, choose the most appropriate option.

A. In response to the allegations and condemnation pouring in,
B. Nike implemented comprehensive changes in their labour policy.

CAT 2008

C. Perhaps sensing the rising tide of global labour concerns,
D. from the public would become a prominent media issue,
E. Nike sought to be a industry leader in employee relations.

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

Answer: 4

Solve: Statement B has an error of pronoun agreement. Statement C does not use comma after 'perhaps' and incorrectly uses comma after 'concerns'. Statement E uses incorrect article 'a'.

Directions: In the following question there are sentences that form a paragraph. Identify the sentence(s) or part(s) of sentence(s) that is/are correct in terms of grammar and usage (including spelling, punctuation and logical consistency). Then, choose the most appropriate option.

A. Charges and countercharges mean nothing
B. to the few million who have lost their home.
C. The nightmare is far from over, for the government
D. is still unable to reach hundreds who are marooned.
E. The death count have just begun.

1) A only
2) C only
3) A and C
4) A, C and D
5) D only

Answer: 3

Solve: Statement B should use 'millions' in plural. Statement D should use article 'the' before 'hundreds'. Statement E incorrectly uses plural auxiliary 'have'.

Directions: In the following question there are sentences that form a paragraph. Identify the sentence(s) or part(s) of sentence(s) that is/are correct in terms of grammar and usage (including spelling, punctuation and logical consistency). Then, choose the most appropriate option.

A. I did not know what to make of you.

B. Because you'd lived in India, I associate you more with my parents than with me.
C. And yet you were unlike my cousins in Calcutta, who seem so innocent and obedient when I visited them.
D. You were not curious about me in the least.
E. Although you did make effort to meet me.

1) A only
2) A and B
3) A and E
4) D only
5) A and D

Answer: 5

Solve: Statements B and C suffer from the error of tense (associate; seem). Statement E suffers from an error of missing article.

Directions: The following question has a paragraph from which the last sentence has been deleted. From the given options, choose the sentence that completes the paragraph in the most appropriate way.

Most people at their first consultation take a furtive look at the surgeon's hands in the hope of reassurance. Prospective patients look for delicacy, sensitivity, steadiness, perhaps unblemished pallor. On this basis, Henry Perowne loses a number of cases each year. Generally, he knows it's about to happen before the patient does: the downward glance repeated, the prepared questions beginning to falter, the overemphatic thanks during the retreat to the door.

1) Other people do not communicate due to their poor observation.
2) Other patients don't like what they see but are ignorant of their right to go elsewhere.
3) But Perowne himself is not concerned.
4) But others will take their place, he thought.
5) These hands are steady enough, but they are large.

Answer: 5

Solve: The paragraph is about a patient’s reaction to a surgeon’s hands.

Directions: The following question has a paragraph from which the last sentence has been deleted. From the given options, choose the sentence that completes the paragraph in the most appropriate way.

Trade protectionism, disguised as concern for the climate, is raising its head. Citing competitiveness concerns, powerful industrialized countries are holding out threats of a levy on imports of energy-

intensive products from developing countries that refuse to accept their demands. The actual source of protectionist sentiment in the OECD countries is, of course, their current lacklustre economic performance, combined with the challenges posed by the rapid economic rise of China and India - in that order.

1) Climate change is evoked to bring trade protectionism through the back door.
2) OECD countries are taking refuge in climate change issues to erect trade barriers against these two countries.
3) Climate change concerns have come as a convenient stick to beat the rising trade power of China and India.
4) Defenders of the global economic status quo are posing as climate change champions.
5) Today's climate change champions are the perpetrators of global economic inequity.

Answer: 1

Solve: Trade protectionism is raising its head in a different garb.

Directions: The following question has a paragraph from which the last sentence has been deleted. From the given options, choose the sentence that completes the paragraph in the most appropriate way.

Mattancherry is Indian Jewry's most famous settlement. Its pretty streets of pastel coloured houses, connected by first-floor passages and home to the last twelve saree-and-sarong-wearing, white-skinned Indian Jews are visited by thousands of tourists each year. Its synagogue, built in 1568, with a floor of blue-and-white Chinese tiles, a carpet given by Haile Selassie and the frosty Yaheh selling tickets at the door, stands as an image of religious tolerance.

1) Mattancherry represents, therefore, the perfect picture of peaceful co-existence.
2) India's Jews have almost never suffered discrimination, except for European colonisers and each other.
3) Jews in India were always tolerant.
4) Religious tolerance has always been only a facade and nothing more.
5) The pretty pastel streets are, thus, very popular with the tourists.

Answer: 1

Solve: The paragraph is about a Jewish settlement popular for its history and religious tolerance.

Directions: The following question has a paragraph from which the last sentence has been deleted. From the given options, choose the sentence that completes the paragraph in the most appropriate way.

Given the cultural and intellectual interconnections, the question of what is `Western' and what is

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‘Eastern’ (or ‘Indian’) is often hard to decide, and the issue can be discussed only in more dialectical terms. The diagnosis of a thought as `purely Western' or `purely Indian' can be very illusory.

1) Thoughts are not the kind of things that can be easily categorised.
2) Though 'occidentalism' and `orientalism' as dichotomous concepts have found many adherents.
3) East is East and West is West’ has been a discredited notion for a long time now.
4) Compartmentalizing thoughts is often desirable.
5) The origin of a thought is not the kind of thing to which `purity' happens easily.

Answer: 5

Solve: There is a mix up of Western and Eastern culture and thought.

Directions: Read the passage and answer the question that follows.

A remarkable aspect of art of the present century is the range of concepts and ideologies which it embodies. It is almost tempting to see a pattern emerging within the art field - or alternatively imposed upon it a posteriori - similar to that which exists under the umbrella of science where the general term covers a whole range of separate, though interconnecting, activities. Any parallelism is however - in this instance at least - misleading. A scientific discipline develops systematically once its bare tenets have been established, named and categorized as conventions. Many of the concepts of modern art, by contrast, have resulted from the almost accidental meetings of groups of talented individuals at certain times and certain places. The ideas generated by these chance meetings had twofold consequences. Firstly, a corpus of work would be produced which, in great part, remains as a concrete record of the events. Secondly, the ideas would themselves be disseminated through many different channels of communication - seeds that often bore fruit in contexts far removed from their generation. Not all movements were exclusively concerned with innovation. Surrealism, for instance, claimed to embody a kind of insight which can be present in the art of any period. This claim has been generally accepted so that a sixteenth century painting by Spranger or a mysterious photograph by Atget can legitimately be discussed in surrealist terms. Briefly, then, the concepts of modern art are of many different (often fundamentally different) kinds and resulted from the exposures of painters, sculptors and thinkers to the more complex phenomena of the twentieth century, including our ever increasing knowledge of the thought and products of earlier centuries. Different groups of artists would collaborate in trying to make sense of a rapidly changing world of visual and spiritual experience. We should hardly be surprised if no one group succeeded completely, but achievements, though relative, have been considerable. Landmarks have been established - concrete statements of position which give a pattern to a situation which could easily have degenerated into total chaos. Beyond this, new language tools have been created for those who follow - semantic systems which can provide a springboard for further explorations.
The codifying of art is often criticized. Certainly one can understand that artists are wary of being pigeon-holed since they are apt to think of themselves as individuals - sometimes with good reason. The notion of self-expression, however, no longer carries quite the weight it once did; objectivity has its defenders. There is good reason to accept the ideas codified by artists and critics, over the past sixty years or so, as having attained the status of independent existence - an independence which is

not without its own value. The time factor is important here. As an art movement slips into temporal perspective, it ceases to be a living organism - becoming, rather, a fossil. This is not to say that it becomes useless or uninteresting. Just as a scientist can reconstruct the life of a prehistoric environment from the messages codified into the structure of a fossil, so can an artist decipher whole webs of intellectual and creative possibility from the recorded structure of a `dead' art movement. The artist can match the creative patterns crystallized into this structure against the potentials and possibilities of his own time. As T.S. Eliot observed, no one starts anything from scratch; however consciously you may try to live in the present, you are still involved with a nexus of behaviour patterns bequeathed from the past. The original and creative person is not someone who ignores these patterns, but someone who is able to translate and develop them so that they conform more exactly to his - and our - present needs.

Many of the concepts of modern art have been the product of

1) ideas generated from planned deliberations between artists, painters and thinkers
2) the dissemination of ideas through the state and its organizations
3) accidental interactions among people blessed with creative muse
4) patronage by the rich and powerful that supported art
5) systematic investigation, codification and conventions

Answer: 3

Solve: The passage is about art being an embodiment of a range of concepts and ideologies, a trait which it shares to some extent with science. The concluding lines of the passage sum up art and creation as translation and development of what has gone before. Option 3 can be directly derived from ‘accidental meetings’ in the first paragraph.

In the passage, the word `fossil' can be interpreted as

1) an art movement that has ceased to remain interesting or useful
2) an analogy from the physical world to indicate a historic art movement
3) an analogy from the physical world to indicate the barrenness of artistic creations in the past
4) an embedded codification of pre-historic life
5) an analogy from the physical world to indicate the passing of an era associated with an art movement

Answer: 2

Solve: The word ‘fossil’ is used to denote derivations from past knowledge.

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In the passage, which of the following similarities between science and art may lead to erroneous conclusions?

1) Both in general include a gamut of distinct but interconnecting activities.
2) Both have movements not necessarily concerned with innovation.
3) Both depend on collaborations between talented individuals.
4) Both involve abstract thought and dissemination of ideas.
5) Both reflect complex priorities of the modem world.

Answer: 1

Solve: Option 1 can be directly derived from the first paragraph.

The range of concepts and ideologies embodied in the art of the twentieth century is explained by

1) the existence of movements such as surrealism
2) landmarks which give a pattern to the art history of the twentieth century
3) new language tools which can be used for further explorations into new areas
4) the fast changing world of perceptual and transcendental understanding
5) the quick exchange of ideas and concepts enabled by efficient technology

Answer: 4

Solve: Option 4 can be directly derived from the lines “Different groups of artists would collaborate in trying to make sense of a rapidly changing world of visual and spiritual experience.”

The passage uses an observation by T.S. Eliot to imply that

1) 1.creative processes are not `original' because they always borrow from the past
2) 2. we always carry forward the legacy of the past
3) 3. past behaviours and thought processes recreate themselves in the present and get labeled as ‘original’ or ‘creative’
4) 4. ‘originality’ can only thrive in a ‘greenhouse’ insulated from the past biases
5) 5. ‘innovations’ and ‘original thinking’ interpret and develop on past thoughts to suit contemporary needs

Answer: 5

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Solve: The observation of TS Eliot has been explained in the last sentence of the passage. The only choice is between options (1) and (5). But (1) is rendered incorrect by the use of the extreme expression 'always'.

Directions: Read the passage and answer the question.

To summarize the Classic Maya collapse, we can tentatively identify five strands. I acknowledge, however, that Maya archaeologists still disagree vigourously among themselves - in part, because the different strands evidently varied in importance among different parts of the Maya realm; because detailed archaeological studies are available for only some Maya sites; and because it remains puzzling why most of the Maya heartland remained nearly empty of population and failed to recover after the collapse and after re-growth of forests.
With those caveats, it appears to me that one strand consisted of population growth outstripping available resources: a dilemma similar to the one foreseen by Thomas Malthus in 1798 and being played out today in Rwanda, Haiti and elsewhere. As the archaeologist David Webster succinctly puts it, "Too many farmers grew too many crops on too much of landscape." Compounding that mismatch between population and resources was the second strand: the effects of deforestation and hillside erosion, which caused a decrease in the amount of useable farmland at a time when more rather than less farmland was needed, and possibly exacerbated by an anthropogenic drought resulting from deforestation, by soil nutrient depletion and other soil problems, and by the struggle to prevent bracken ferns from overrunning the fields.

The third strand consisted of increased fighting, as more and more people fought over fewer resources. Maya warfare, already endemic, peaked just before the collapse. That is not surprising when one reflects that at least five million people, perhaps many more, were crammed into an area smaller than the US state of Colorado (104,000 square miles). That warfare would have decreased further the amount of land available for agriculture, by creating no-man's lands between principalities where it was now unsafe to farm. Bringing matters to a head was the strand of climate change. The drought at the time of the Classic collapse was not the first drought that the Maya had lived through, but it was the most severe. At the time of previous droughts, there were still uninhabited parts of the Maya landscape, and people at a site affected by drought could save themselves by moving to another site. However, by the time of the Classic collapse the landscape was now full, there was no useful unoccupied land in the vicinity on which to begin anew, and the whole population could not be accommodated in the few areas that continued to have reliable water supplies.

As our fifth strand, we have to wonder why the kings and nobles failed to recognize and solve these seemingly obvious problems undermining their society. Their attention was evidently focused on their short-term concerns of enriching themselves, waging wars, erecting monuments, competing with each other, and extracting enough food from the peasants to support all those activities. Like most leaders throughout human history, the Maya kings and nobles did not heed long-term problems, insofar as they perceived them.

Finally, while we still have some other past societies to consider before we switch our attention to the

modern world, we must already be struck by some parallels between the Maya and the past societies. As on Mangareva, the Maya environmental and population problems led to increasing warfare and civil strife. Similarly, on Easter Island and at Chaco Canyon, the Maya peak population numbers were followed swiftly by political and social collapse. Paralleling the eventual extension of agriculture from Easter Island's coastal lowlands to its uplands, and from the Mimbres floodplain to the hills, Copan's inhabitants also expanded from the floodplain to the more fragile hill slopes, leaving them with a larger population to feed when the agricultural boom in the hills went bust. Like Easter Island chiefs erecting ever larger statues, eventually crowned by pukao, and like Anasazi elite treating themselves to necklaces of 2,000 turquoise beads, Maya kings sought to outdo each other with more and more impressive temples, covered with thicker and thicker plaster - reminiscent in turn of the extravagant conspicuous consumption by modem American CEOs. The passivity of Easter chiefs and Maya kings in the face of the real big threats to their societies completes our list of disquieting parallels.=

According to the passage, which of the following best represents the factor that has been cited by the author in the context of Rwanda and Haiti?

1) Various ethnic groups competing for land and other resources.
2) Various ethnic groups competing for limited land resources.
3) Various ethnic groups fighting with each other.
4) Various ethnic groups competing for political power.
5) Various ethnic groups fighting for their identity.

Answer: 1

Solve: The very first line of the passage identifies five reasons for the collapse of Maya Culture. The names of Rwanda and Haiti have been mentioned in connection with the first reason. Here also option (2) mentions land resources only, whereas the passage mentions ‘available resources’.

By an anthropogenic drought, the author means

1) 1.a drought caused by lack of rain
2) 2.a drought caused due to deforestation
3) 3.a drought caused by failure to prevent bracken ferns from overrunning the fields
4) 4.a drought caused by actions of human beings
5) 5. a drought caused by climate change

Answer: 4

Solve: The answer can be directly derived from meaning of the word ‘anthropogenic’.=

According to the passage, the drought at the time of Maya collapse had a different impact compared

to the droughts earlier because

1) the Maya kings continued to be extravagant when common people were suffering
2) it happened at the time of collapse of leadership among Mayas
3) it happened when the Maya population had occupied all available land suited for agriculture
4) it was followed by internecine warfare among Mayans
5) irreversible environmental degradation led to this drought

Answer: 3

Solve: Answer to this question is directly mentioned in the third paragraph as the fourth reason for collapse of the Maya culture.

According to the author, why is it difficult to explain the reasons for Maya's collapse?

1) Copan inhabitants destroyed all records of that period.
2) The constant deforestation and hillside erosion have wiped out all traces of the Maya kingdom.
3) Archaeological sites of Mayas do not provide any consistent evidence.
4) It has not been possible to ascertain which of the factors best explains as to why the Maya civilisation collapsed.
5) At least five million people were crammed into a small area.

Answer: 4

Solve: Answer to this question is provided in the opening lines of the passage.

Which factor has not been cited as one of the factors causing the collapse of Maya society?

1) Environmental degradation due to excess population.
2) Social collapse due to excess population.
3) Increased warfare among Maya people.
4) Climate change.
5) Obsession of Maya population with their own short-term concerns.

Answer: 5

Solve: Option (5) has been mentioned in the passage in the context of ‘kings and nobles’, not in the context of ‘Maya population’.

Directions: Read the passage and answer the question.

Language is not a cultural artifact that we learn the way we learn to tell time or how the federal government works. Instead, it is a distinct piece of the biological makeup of our brains. Language is a

complex, specialized skill, which develops in the child spontaneously, without conscious effort or formal instruction, is deployed without awareness of its underlying logic, is qualitatively the same in every individual, and is distinct from more general abilities to process information or behave intelligently. For these reasons some cognitive scientists have described language as a psychological faculty, a mental organ, a neural system, and a computational module. But I prefer the admittedly quaint term "instinct". It conveys the idea that people know how to talk in more or less the sense that spiders know how to spin webs. Web-spinning was not invented by some unsung spider genius and does not depend on having had the right education or on having an aptitude for architecture or the construction trades. Rather, spiders spin spider webs because they have spider brains, which give them the urge to spin and the competence to succeed. Although there are differences between webs and words, I will encourage you to see language in this way, for it helps to make sense of the phenomena we will explore.

Thinking of language as an instinct inverts the popular wisdom, especially as it has been passed down in the canon of the humanities and social sciences. Language is no more a cultural invention than is upright posture. It is not a manifestation of a general capacity to use symbols: a three-year-old, we shall see, is a grammatical genius, but is quite incompetent at the visual arts, religious iconography, traffic signs, and the other staples of the semiotics curriculum. Though language is a magnificent ability unique to Homo sapiens among living species, it does not call for sequestering the study of humans from the domain of biology, for a magnificent ability unique to a particular living species is far from unique in the animal kingdom. Some kinds of bats home in on flying insects using Doppler sonar. Some kinds of migratory birds navigate thousands of miles by calibrating the positions of the constellations against the time of day and year. In nature's talent show, we are simply a species of primate with our own act, a knack for communicating information about who did what to whom by modulating the sounds we make when we exhale.

Once you begin to look at language not as the ineffable essence of human uniqueness but as a biological adaptation to communicate information, it is no longer as tempting to see language as an insidious shaper of thought, and, we shall see, it is not. Moreover, seeing language as one of nature's engineering marvels - an organ with "that perfection of structure and co-adaptation which justly excites our admiration," in Darwin's words - gives us a new respect for your ordinary Joe and the much-maligned English language (or any language). The complexity of language, from the scientist's point of view, is part of our biological birthright; it is not something that parents teach their children or something that must be elaborated in school - as Oscar Wilde said, "Education is an admirable thing, but it is well to remember from time to time that nothing that is worth knowing can be taught." A preschooler's tacit knowledge of grammar is more sophisticated than the thickest style manual or the most state-of-the-art computer language system, and the same applies to all healthy human beings, even the notorious syntax-fracturing professional athlete and the, you know, like, inarticulate teenage skateboarder. Finally, since language is the product of a well-engineered biological instinct, we shall see that it is not the nutty barrel of monkeys that entertainer-columnists make it out to be.

According to the passage, which of the following does not stem from popular wisdom on language?

1) Language is a cultural artifact.
2) Language is a cultural invention.
3) Language is learnt as we grow.

4) Language is unique to Homo Sapiens.
5) Language is a psychological faculty.

Answer: 5

Solve: The passage is about language development being biological, spontaneous and instinctive, rather than being 'a cultural invention'.'Psychological faculty' is attributed in the passage to 'some cognitive scientists', not to 'popular wisdom'.

Which of the following can be used to replace the spiders know how to spin webs analogy as used by the author?

1) A kitten learning to jump over a wall.
2) Bees collecting nectar.
3) A donkey carrying a load.
4) A horse running a Derby.
5) A pet dog protecting its owner's property.

Answer: 2

Solve: The answer to this question can be directly derived from the lines 'for a magnificent ability unique to a particular living species is far from unique in the animal kingdom'.

According to the passage, which of the following is unique to human beings?

1) Ability to use symbols while communicating with one another.
2) Ability to communicate with each other through voice modulation.
3) Ability to communicate information to other members of the species.
4) Ability to use sound as means of communication.
5) All of the above.

Answer: 2

Solve: Animals can also communicate to others of their species through sound, symbolism etc. Only they cannot use 'voice modulation'.

According to the passage, complexity of language cannot be taught by parents or at school to children because

1) children instinctively know language
2) children learn the language on their own

3) language is not amenable to teaching
4) children know language better than their teachers or parents
5) children are born with the knowledge of semiotics

Answer: 1

Solve: Keeping the main idea of the passage in mind, the answer should be (1).

Which of the following best summarises the passage?

1) Language is unique to Homo Sapiens.
2) Language is neither learnt nor taught.
3) Language is not a cultural invention or artifact as it is made out.
4) Language is instinctive ability of human beings.
5) Language is use of symbols unique to human beings.

Answer: 4

Solve: Keeping the main idea of the passage in mind, the answer should be (4).

Directions: Read the passage and answer the question.

When I was little, children were bought two kinds of ice cream, sold from those white wagons with canopies made of silvery metal: either the two-cent cone or the four-cent ice-cream pie. The two-cent cone was very small, in fact it could fit comfortably into a child's hand, and it was made by taking the ice cream from its container with a special scoop and piling it on the cone. Granny always suggested I eat only a part of the cone, then throw away the pointed end, because it had been touched by the vendor's hand (though that was the best part, nice and crunchy, and it was regularly eaten in secret, after a pretence of discarding it).

The four-cent pie was made by a special little machine, also silvery, which pressed two disks of sweet biscuit against a cylindrical section of ice cream. First you had to thrust your tongue into the gap between the biscuits until it touched the central nucleus of ice cream; then, gradually, you ate the whole thing, the biscuit surfaces softening as they became soaked in creamy nectar. Granny had no advice to give here: in theory the pies had been touched only by the machine; in practice, the vendor had held them in his hand while giving them to us, but it was impossible to isolate the contaminated area.

I was fascinated, however, by some of my peers, whose parents bought them not a four-cent pie but two two-cent cones. These privileged children advanced proudly with one cone in their right hand and one in their left; and expertly moving their head from side to side, they licked first one, then the other. This liturgy seemed to me so sumptuously enviable, that many times I asked to be allowed to celebrate it. In vain. My elders were inflexible: a four-cent ice, yes; but two two-Â¬cent ones,

absolutely no.

As anyone can see, neither mathematics nor economy nor dietetics justified this refusal. Nor did hygiene, assuming that in due course the tips of both cones were discarded. The pathetic, and obviously mendacious, justification was that a boy concerned with turning his eyes from one cone to the other was more inclined to stumble over stones, steps, or cracks in the pavement. I dimly sensed that there was another secret justification, cruelly pedagogical, but I was unable to grasp it.

Today, citizen and victim of a consumer society, a civilization of excess and waste (which the society of the thirties was not), I realize that those dear and now departed elders were right. Two two-cent cones instead of one at four cents did not signify squandering, economically speaking, but symbolically they surely did. It was for this precise reason, that I yearned for them: because two ice creams suggested excess. And this was precisely why they were denied to me: because they looked indecent, an insult to poverty, a display of fictitious privilege, a boast of wealth. Only spoiled children ate two cones at once, those children who in fairy tales were rightly punished, as Pinocchio was when he rejected the skin and the stalk. And parents who encouraged this weakness, appropriate to little parvenus, were bringing up their children in the foolish theatre of "I'd like to but I can't." They were preparing them to turn up at tourist-class check-in with a fake Gucci bag bought from a street peddler on the beach at Rimini.

Nowadays the moralist risks seeming at odds with morality, in a world where the consumer civilization now wants even adults to be spoiled, and promises them always something more, from the wristwatch in the box of detergent to the bonus bangle sheathed, with the magazine it accompanies, in a plastic envelope. Like the parents of those ambidextrous gluttons I so envied, the consumer civilization pretends to give more, but actually gives, for four cents, what is worth four cents. You will throwaway the old transistor radio to purchase the new one, that boasts an alarm clock as well, but some inexplicable defect in the mechanism will guarantee that the radio lasts only a year. The new cheap car will have leather seats, double side mirrors adjustable from inside, and a panelled dashboard, but it will not last nearly so long as the glorious old Fiat 500, which, even when it broke down, could be started again with a kick.

The morality of the old days made Spartans of us all, while today's morality wants all of us to be Sybarites.

Which of the following cannot be inferred from the passage?

1) Today's society is more extravagant than the society of the 1930s.
2) The act of eating two ice cream cones is akin to a ceremonial process.
3) Elders rightly suggested that a boy turning eyes from one cone to the other was more likely to fall.
4) Despite seeming to promise more, the consumer civilization gives away exactly what the thing is worth.
5) The consumer civilization attempts to spoil children and adults alike.

Answer: 3

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Solve: The gist of the passage is available in the fifth paragraph. Answer to this question can be derived from use of the word 'mendacious' before the justification given in paragraph 4. This is directly countered in option (3).

In the passage, the phrase little parvenus refers to

1) naughty midgets
2) old hags
3) arrogant people
4) young upstarts
5) foolish kids

Answer: 4

Solve: This is a vocabulary based question.

The author pined for two two-cent cones instead of one four-cent pie because

1) it made dietetic sense
2) it suggested intemperance
3) it was more fun
4) it had a visual appeal
5) he was a glutton

Answer: 4

Solve: The author's pining is mentioned in the third paragraph where the 'liturgy seemed to me so sumptuously enviable'.

What does the author mean by nowadays the moralist risks seeming at odds with morality?

1) The moralists of yesterday have become immoral today.
2) The concept of morality has changed over the years.
3) Consumerism is amoral.
4) The risks associated with immorality have gone up.
5) The purist's view of morality is fast becoming popular.

Answer: 2

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Solve: The obvious answer to this question is option (1).

According to the author, the justification for refusal to let him eat two cones was plausibly

1) didactic
2) dietetic
3) dialectic
4) diatonic
5) Diastolic

Answer: 1

Solve: The justification for refusal was meant to be didactic as admitted by the author in the lines "Two two-cent cones instead of one at four cents did not signify squandering, economically speaking, but symbolically they surely did. It was for this precise reason that I yearned for them: because two ice creams suggested excess. And this was precisely why they were denied to me: because they looked indecent, an insult to poverty, a display of fictitious privilege a boast of wealth.