TCS NQT Paper 3

Numerical Ability

Question 1. A wall is of 10m 73cm in length and 6 m 67cm in height, Find the least number of square boxes of equal size required to paint the entire wall completely.

1. 851
2. 861
3. 855
4. 865

Answer: Option A – 851

Question 2.What is the maximum number of times that 8/9 can be subtracted from 8, so that the remainder is not less than 3.

1. 7
2. 5
3. 4
4. 6

Answer: Option B – 5

Question 3.Out of three numbers, the second is five times the first, and it is also twice the third. If the third number is raised by 8,then the average of three works out to be 31.what is the smallest number?

1. 15
2. 16
3. 10
4. 12

Answer: Option D – 10

Question 4. Aslam drives to his office, if he increases his average speed by 12%, then by what percentage (correct to two decimal places) will his time of travel decrease?

1. 10.34
2. 11.02
3. 10.71
4. 12.00

Answer: Option C – 10.71

Question 5. A dealer purchase 15 kg rice at Rs 22 per kg, 12 kg rice at 25 per kg, 18 kg rice at 35 per kg and 8 kg rice at 45 per kg, He mixed al the four types and sold 28 kg at a price of Rs 28 per kg, At what rate he muse sell the remaining rice to earn a profit of 15%

1. 35.15 per kg
2. 38.65 per kg
3. 43.16 per kg
4. 40.35 per kg

Answer: Option C – 43.16 per kg

Question 6. The average age of Raghu and Bagha is 60 years which is 15 years more than the average age of Bagha and Tanmay. The average age of raghu and tanmay is 65 years. Daya is 12.5% older than Bagha. What is the age of Daya?

Options

1. 45
2. 35
3. 30
4. 40

Answer: Option A – 45

Question 7. The university gives 30% of relaxation in fees for those students who secured marks greater than 90%, relaxation of 20% in fees for those who secured 81 to 90% and relaxation of 10% to those who secured 70-80% marks in class. A total of 80 students are in the class. 5% students got 95% marks. 10% students got 90% marks and 20% got 80% marks. The rest of the students got less than 65% marks. If the total fees is Rs.1 lakh per annum, then what is the percentage of relaxation in fees?

Options

1. 14.6%
2. 15.7%
3. 13.5%
4. 16.8%

Answer: Option B – 15.71%

Question 8. A sum of money, invested for 4years @ 5% simple interests amounted to ₹150 on maturity. What was the sum invested

1. ₹120

2. ₹180
3. ₹176
4. ₹125

Answer: Option D – Rs. 125

Question 9. Sangeetha can complete a work in 16days working 10hours per day. Sahithya can complete the same work in 18days working 8 hours per day. If both of them work together working 9 hours per day, in how many days can they complete the work?

1. 180/19days
2. 150/19days
3. 160/19days
4. 170/19days

Answer: Option C – 160/19

Question 10. In a class, the ratio of boys and girls is 9:16. If the number of girls is 64% of the class, then the number of boys in the class is:

Options

1. 10
2. 9
3. 16
4. 11

Answer: 9

Question 11. If 1x+1x=417, and 1y+1y=310 then x+1xy+1y=?

1. 4
2. 3
3. 5
4. 10

Answer:

Question 12. A person invested certain money at the rate of 12.5% per annum compounded annually. If the compound interest of the 3rd year is Rs 10850. For what money was invested each year.

Options

1. Rs. 26, 600
2. Rs. 25,500
3. Rs. 25,000
4. Rs. 25, 600

Answer: Option D – 25600

Question 13. A borrowed Rs. 12, 000 from a company at the rate of 12% per annum for 15 years. After a certain period of time the company introduced a scheme which induced the interest rate by 10% . At the end of 15 years, A paid Rs. 18,000 in total then after how much time (in years) did the company introduce the scheme?

Answer:_____

Question 14. One year ago the ratio of income between A and B was 3:5. The ratios of income for the previous year and the current year are 2:3 and 5:7. The sum of the income for the both is Rs. 12, 900. Then the current income of each is equal to

Options

1. Rs. 7,200 ; Rs. 5,700
2. Rs. 3,600 ; Rs. 9,300
3. Rs. 8,100 ; Rs. 4,800
4. Rs. 5,400 ; Rs. 7,500

Question 15. A person completes a journey in 12 hours. He travels the first half of the journey at the rate of 19km/h and the second half at the rate of 21 km/h. What is the total journey in km?

Options

1. 217.8

2. 208.4
3. 239.4
4. 226.2

Answer: Option C – 239.4

Question 16. A closed box measures externally 90 cm long, 60 cm wide and 45 cm high and it's made of wood 2.5 cm thick. What is the cost of lining it on the inside with metal at Rs.3 per dm3?

Options

1. Rs. 572.50
2. Rs. 642. 50
3. Rs. 594.50
4. Rs. 616. 50

Answer: Option D – 616.50

Question 17. Mohan and Sohan start from P and Q, respectively. Mohan covers a distance from P to Q in 4 hours and Sohan covers a distance from Q to P in 6 hours. Determine the ratio of speed of Mohan and Sohan?

Options

1. 3:2
2. 3:5
3. 2:3
4. 5:3

Answer: Option A – 3:2

Question 18.If the mean deviation is 48:12, the standard deviation of the distribution is empirical relation between mean deviation and standard deviation.

1. 61.15
2. 58.15
3. 60.15
4. 59.15

Answer:

Question 19. Study the following table and answer the questions:

College	Number of teachers	Ratio of male to female teachers	Ratio of Teachers to students	% of non-teaching staff of total strength
M	480	15:17	_:_	15%
N	450	_:_	1:6	10%
O	–	3:2	1:8	–
P	510	8:7	3:10	–
Q	–	2:7	2:5	20%
R	255	_:_	2:7	15%

Note that the total strength of the college is the sum of teaching staff, non-teaching staff and students.

If the total number of students at college P and Q are the same,then teachers at college P are what percentage less than the students of college Q?

Answer: (70%)

Verbal Ability

Q1. Parts of the given sentence have been given as options. One of them contains a grammatical error. Select the option that has an error.

The reason for his prolonged absence from work was because his father had had a heart attack and was hospitalized.

1. and was hospitalized
2. from work was because
3. The reason for his prolonged absence
4. His father had had a heart attack.

Answer: His father had had a heart attack.

Q2. Identify the error in the sentence.

Could you please borrow me that non-fiction book you were talking about yesterday?

1. Could you please borrow
2. Non-fiction book you

3. were talking about yesterday?

4. me that informative.

Answer: Could you please borrow

Q3. Each sentence contains four underlined phrases. Three of these phrases have been correctly used and one has been incorrectly used. Choose the phrase from the options which best replaces the wrong phrase in the sentence.

We went to see him as many times as we could since he was put in very close to our house.

1. Was putting up
2. So many times
3. Close from
4. We should have

Answer: was putting up

Q4. Choose the appropriate idioms to complete the given sentence/s.

I was _____while choosing a gift for my parent's 50th wedding anniversary. Finally,

I was _____when I saw just the thing for them.

1. In the doldrums; on cloud nine.
2. In the doldrums' under a cloud
3. At sea; on cloud nine
4. At sea; under a cloud

Answer: C – At sea; on cloud nine

Q5. Sentences of a paragraph are given below in jumbled order. Arrange the sentences in the correct order to form a meaningful passage.

1. Most unsettled sea boundaries go unnoticed unlike land-border conflicts, but the former can provide an opportunity for politicians to win favor from voters
2. But the recent scramble for offshore resources has expanded fishing and drilling zones, and formalized countries' rights to claims based on the country's shores.
3. Countries calculate their maritime claims according to a simplified outline of their territory.
4. For example, during the Brexit negotiations, the British cast fishing rights as essential for national sovereignty, even though its maritime borders with its neighbors were not in doubt.

1. 3,2,1,4
2. 3,4,2,1
3. 1,3,4,2
4. 1,4,3,2

Answer – 3214

Q6. *Select the most appropriate set of options to fill the blanks.*

The Metal Man stands in a dark, dusty corner of the Tyburn College Museum. The visitor who gives it a closer view (A) _____at the silent tragedy in the set, determined expression and at the (B) _____mark upon the chest. It is a six-sided blot, of a deep crimson hue, with strange pink lines (C) _____from it. Of course it is generally (D) _____that the Metal Man was once Professor Thomas Kelvin of the Geology Department.

1. (A) amazed (B) strange (C) spreading (D) planned.
2. (A) marvels (B) peculiar (C) radiating (D) known.
3. (A) wonders (B) familiar (C) developing (D) received.
4. (A) surprise (B) hideous (C) following (D) accepted.

Answer: (A) marvels (B) peculiar (C) radiating (D) known.

Question 7 :Choose the most appropriate set of idioms that would fill in the blanks and complete the text given here.

The road to success is paved with a lot of challenges. There is no point 1. _____ imagining we can move the world as we wish and that our journey to success is going to be 2. _____. It's time we called 3. _____and accepted the harsh reality that there will be 4. _____all along our career path – from unemployment to high cost of higher education and not forgetting the red tape we have to deal with.

1. 1. Living in a bird paradise 2. A thorny bed 3. A spade a spade 4. Stumbling stones
2. 1. Living in a fool's kingdom 2. A bed of roses 3. A hammer a hammer 4. Crumbling blocks
3. 1. Living in a fool's paradise 2. A cake walk 3. A spade a spade 4. Building blocks
4. 1. Living in a fool's paradise 2. A bed of roses 3. A spade a spade 4. Stumbling blocks

Answer – 1. Living in a fool's paradise 2. A bed of roses 3. A spade a spade 4. Stumbling blocks

Four idioms are given below. Choose their sequence that would fill in the blanks and the complete the text given below.

When you start a new job, although you _____but it takes some time before you feel confident and familiar with the work, the place, and the people. Ideally, an employer recognizes this and allows you to _____before taking on anything too difficult. But life isn't always ideal, so you may be _____, and then you _____.

1. Find your feet
2. Sink or swim
3. Thrown in at the deep end
4. Bounce off the walls

1. 1234
2. 4132
3. 2413
4. 4123

Answer: 1234

Q9. Choose the most appropriate question to complete the following sentences?

Antibiotic-resistant _____and were first documented just four years after penicillin became widely available. Over the last 20 years, antibiotic resistance _ _____ problems

1. Bacteria rapidly evolved ,has become an increasingly serious
2. Bacteria rapidly evolved, has became an increasingly serious
3. Rapidly evolved bacteria, has become an increasingly serious
4. Rapidly bacteria evolved, has become an increasingly serious

Answer – Bacteria rapidly evolved,has become an increasingly serious

Q10. Substitute one word for the underlined part of the sentence

Riddhima talks a lot, when it is inappropriate

Options

1. Tacitum
2. Loud
3. Reticent

4. Loquacious

Answer – Loquacious

Q11. Choose the correct meaning for the underlined idiom in the sentence

His final argument hit the nail on the head

Options

1. Nasty
2. Cause Headache
3. Exactly to the point
4. Reckless

Answer – Exactly to the point

Q12. *Choose the most appropriate option to complete the following sentence.*

Learned behaviors contrast with innate behaviors, _____and can be performed without any prior experience or training. Of course, some behaviors have _____ elements.

1. Which genetically are hardwired; learned and innate both
2. Which are genetically hardwired; both learned and innate
3. Which genetically is hardwired; learned and innate both
4. Genetically which are hardwired; both learned and innate

Answer: Which are genetically hardwired; both learned and innate

Q13. *Sentences of a paragraph are given below in jumbled order. Arrange the sentences in the correct order to form a meaningful and coherent paragraph*

1. Space agencies and private companies have proposed various methods to clean the skies of space junk, but this is no easy task.
2. Even when ownership is known, it is not clear who would be responsible if such bodies were accidentally nudged in the wrong direction, only to blow up prematures.
3. Our skies are becoming increasingly cluttered with large pieces of fast-moving space junk, which pose a threat to working satellites.
4. Handling space debris belonging to other countries is a violation of international laws, and so far only a fraction of the pieces of orbital junk have a known launching scale.

Options

1. 3, 1, 4, 2
2. 3, 4, 1, 2
3. 1, 4, 2, 3
4. 1, 4, 3, 2

Answer – 3142

Q14. *For the four sentence (S1 to S4) paragraph below, sentences S1 and S4 are given. From the options P, Q, R, and S. Choose the appropriate sentences for S2 and S3, respectively.*

S1. A large number of industries have been established in post- independence India in private, public and joint sectors.

S2. _____

S3. _____

S4. Whether large scale or small scale, both private and public sectors have grown side by side since independence.

1. They debated titles in favor of the private sector.
2. 'Contractualism' is the new slogan today.
3. Bhilai, Bokaro, Rourkela, Ranchi, Jamshedpur, Renukoot, etc emerged as major centres during the first one and a half decades of independence.
4. However, later on, industrialisation at medium and small scale was taken up in all the states.

1. PR
2. RS
3. QP
4. PS

Answer: RS

Q15. *For the four sentence (S1 to S4) paragraph below, sentences S1 and S4 are given. From the options P, Q, R, and Schoose the appropriate sentences for S2 and S3, respectively.*

S1: In the Rig Veda, it is said that Yama and Yami the twins were extremely fond of each other and lived an idyllic life on Earth where the day never ended.

S2:_____

S3:_____

S4: Not wanting to disturb him, she waited for him to wake up

P: When he did not wake up for a long time while, she woke him up.

Q: One day when Yami returned home, she found Yama laying under a tree appearing to be asleep

R: Yami started to weep with such great sorrow that her tears threatened to flood the world as she missed him tremendously.

S: They went where they pleased and did what they wanted

Answer: _____

Answer – SQ

Q16 Among V S Naipaul's fictional works, The Enigma of Arrival (1987) has emerged as one of his finest books. Its 1. _____is indistinguishable from the author describing Naipaul's 2. _____of studying in London, living in Wiltshire, his neighbors and the landscape around Salisbury. It _____how he freed himself from the memory of Trinidad and came to find his true self by 4. _____with English culture. It is an examination of the narrator's cultural roots, while also being a story of change and death.

Blank 1. A. narrator B. storyteller C. reporter D. speaker

Blank 2. A. knowledge B. experience C. skill D. adventure

Blank 3. A. announces B. informs C. reveals D. confesses

Blank 4. A. identify B. identifying C. identified D. identifies

Options:

1. (1)-A, (2)-B, (3)-C, (4)-B
2. (1)-B, (2)-D, (3)-C, (4)-A
3. (1)-C, (2)-B, (3)-A, (4)-B
4. (1)-D, (2)-A, (3)-B, (4)-C

Answer – (1)-A, (2)-B, (3)-C, (4)-B

Q17. My friend is only 25 but he 1. _____perfectly. He's single, confident, passionate and ambitious. He's willing to start 2. _____and, is not afraid 3. _____to the grindstone for those 80 hour weeks. He has 4. _____to start his own business now.

Options:

1. 1. Fits the bill 2, from a scratch 3. To put his nose to the grindstone 4. Made up his mind
2. 1. Customized to size 2. From a scratch 3. To nose around everything 4. Made up for
3. 1. Fetch the bill 2. After scratching his back 3. To his stakes into one basket 4. Made up his heart
4. Fits the bill 2. Cut corners 3. To put his head into the grindstone 4. Made up his mind

Answer – 1. Fits the bill 2, from a scratch 3. To put his nose to the grindstone 4. Made up his mind

Q18 Read the given passage and answer the questions that follow:

The people of the village, numbering some fifty men, women and children were in the abject terror, and though the sun was still up when I arrived, I found the entire population inside their homes behind locked doors, and it was not until my men had made fire in the country and I was sitting down to a cup of tea that door here and there cautiously opened, and frightened inmates emerged.

I was informed that for five days, no one has gone beyond their own doorsteps- the insanitary condition of the courtyard to the truth of this statement– that food was running short, and that the people would starve if the tiger was not killed or driven away.

That the tiger was still in the vicinity was apparent. For three nights it had been heard calling on the road, distant a hundred yards from the houses, and that very day it had been seen on the cultivated land at the lower end of the village.

The headman of the village willingly placed a room at my disposal, but as there were right to us share it, and the only door it possessed opened on to the insanitary courtyard. I refused to spend the night in the open.

After a scratch meal which had to do duty for dinner, I saw my men safely shut into the room and myself took up a position on the side of the road, with my back to a tree. The villagers said the tiger was in the habit of perambulating along this road, and as the moon was at full I thought there was a chance of my getting a shot provided I saw it first.

I had spent many nights in the jungle looking for game, but this was the first time I had ever spent a night looking for a man-eater. The length of road immediately in front of me was brilliantly lit by the moon, but to right and left the overhanging trees cast dark shadows, and when the night wind agitated the branches and the shadows moved, I saw a dozen tigers advancing on me, and bitterly regretted the impulse that had induced me to place myself at the man-eater's mercy. I lacked the courage to return to the village and admit I was too frightened to carry out my self-imposed task, and with teeth chattering, as much from fear as from cold, I sat out the long night. As the grey dawn was lighting up the snowy range which I was facing, I rested my head on my drawn-up knees, and it was in this position my men an hour later found me fast asleep; of the tiger I had neither heard nor seen anything.

Which of the following statements does NOT hold good as per the passage?

Options

1. The tiger's incessant calling and close proximity to its visibility nearby on the very day of the arrival of the narrator was proof enough that it is still in the vicinity of the village.
2. The narrator had an elaborated dinner at his headman's house and set off to spend the night in the open as he was not ready to share the same room with eight more men
3. The narrator was aware of the danger that he was in when he decided to spend the night out in the open on the very road where the tiger was often seen.
4. The people of the small village were terrified because of the man-eater which lurked in their vicinity and were not ready to come out even for basic necessities.

Answer – B

Q19. "I saw a dozen tigers advancing on me…" What caused this to happen and what was the narrator's reaction?

1. The shadows created by the branches of the trees gave an impression that there were numerous dangerous beasts lurking around. The narrator regretted his impulsive decision to spend the night out in the open at the mercy of the man-eater.
2. The village that the narrator had gone to was infested with tigers which had made life difficult for the villagers. On seeing so many tigers so close to him, the narrator was terrified and regretted his decision to come cut in the open.
3. The villagers had given a wrong report to the narrator about the existence of a single tiger, when in reality there were about a dozen of them in the vicinity. The narrator repented about his foolish decision to spend the night out in the open.
4. The narrator was terrified at the possibility of spending the night in close proximity to the man-eater and dreamt of several tigers advancing upon him and he lay on the tree. On getting up from his sleep, the narrator regretted his foolish decision of not getting any of his armed men along with him.

Answer – A

Reasoning Ability

Question 1.Identify the letter cluster that does not belong to the given series:- DE19,

FH30, IL45, MQ64, RX63, XD62

1. RX63
2. IL45
3. XD62
4. MQ64

Ans. RX63

Question 2. Identify the letter cluster that does not belong to the given series:-

PZLP, QWMN, RTNJ, SQOG, TNPD

Ans. QWMN

Enter the answer in the space provided on the screen. Answer should be in whole numbers without any symbol (XY, %, etc)

Question 3. Four letter – cluster pairs have been given, out of which there are alike in some manner and one is different. Select the one that is different.

1. SUYEMW : CAYWQI
2. QSWAGN : AWTXDH
3. CEIOWG : ASMKIG
4. DFJPXH : BTNLJH

Answer: QSWAGN : AWTXDH

Question 4. A statement is given followed by two courses of action numbered I and IL Assuming that everything in the statement is true, decide wc of the logically follow(s).

Statement:

From last few years people are investing much in cryptocurrency and losing a lot of money. People invest after seeing advertisements of celebrities and in the hope of getting rich quickly.

Courses of Action:

1. The government should organise awareness campaign.
2. People should make themselves more aware by researching about the cryptocurrency and its fluctuation in market.

1. Only course of action follows
2. Only course of action follows
3. Both courses of action I and II follow
4. Neither course of action I nor II follows

Answer: C

Question 5. Study the given information carefully and answer the question that follows

In M.A. Social Work final year there are five papers of 100 marks each. Following are the passing criteria in each paper and the course.

A student must :-

1. a) secure at least 40 marks in each paper except paper V, where passing marks are 50
2. b) pass paper V and at least any 2 other papers to appear (re-appear) again in subsequent examination, else he/she will be declared fail
3. c) Up to 2 grace marks each may be given in any of the two papers or maximum 4 marks in any one paper for passing the course
4. d) Grace marks equivalent of 2% of the total final year course marks may be given to a student to enable him acquire 1st division(60%) or distinction (70%)

Based on the criteria given above and without assuming any additional information, take a decision about the result of the following candidates.

Geetansh appeared for the M.A. Social Work final year examination in June 2021 and obtained 56, 37.52, 43, and 46 marks in paper I, II, III, IV and V respectively.

1. He must be declared fail in the course
2. He must be declared pass in the course.
3. He must be asked to re-appear for paper I.
4. He must be asked to re-appear for paper II and V.

Answer : He must be declared fail in the course

Question 6.

- If A + B means A is the father of B
- IF A * B means A is the son-in-law of B
- If A / B means B is the brother of A
- If A $ B means B is the sister of A
- If A # B means B is the mother of AWhich two signs should replace the Question mark (?) in the following expression in proper sequence to establish that E is the brother-in-law of J?

D * E + F ? G H ? J

1. $ and /
2. $ and #
3. # and /
4. / and #

Answer – $ and /

Question 7: Two cars started from the same point and at the same time. The first one is going in the east direction at 10 KMPH and the second one is going towards

the north direction at a speed of 24 KMPH. How far will the two cars will be from each other after 3 hrs

1. 68 kms
2. 72 kms
3. 78 kms
4. 98 km

Answer : 78 kms Question 8:

Statement:

"We need to recruit more skilled and qualified math facilitators for grade XI and XII in our school". The director inform the school staff during staff meeting

Assumptions:

1. Candidates are available for expected post.
2. The math facilitators who are teaching to grade XI and XII at present are not skilled.

Options

1. Both assumptions I and II are implicit.
2. Neither assumptions I nor II is implicit.
3. Only Assumption I is implicit
4. Only assumption II is implicit
5. Only assumption II is implicit

Answer : Only assumption II is implicit

Question 9:

1. If A + B means A is the WIFE of B
2. IF A − B means A is the mother of B
3. If A * B means A is the son of B
4. If A / B means A is the BROTHER of B

Based on the above how is N related to Q, if M -Q-L/J *T *K + N?

1. Brother
2. Father in law
3. Brother in law
4. Father

Question 10 : Following are the criteria required to be fullfiled for getting admission to a college for MSC Bio Informatics.

1. The candidate must have scored more than 70% marks in the intermediate science stream
2. The candidate must possess a graduation degree in Zoology, Botany, Mathematics or Computer Science with minimum of 65% marks.
3. The candidate should have cleared the MSc entrance exam with at least 75% marks and interview with atleast 65% marks.
4. The candidate should be at least 21 years and at most 28 years as of 1 July 2022. In case a candidate fullfills all criteria except the required percentage as mentioned in the criteria but has scored 75% and above marks in the personal interview then the case is to be referred to the Director of the college.

In case a candidate fulfils all criteria except the maximum age criteria as mentioned in IV but belongs to SC/ST community, the case is to be referred to the SC/ST cell for consideration. Refer to the details of a candidate provided below and the four options that follow. Select the appropriate option that applies to the person's candidature.

Romesh Kharwar passed his B.Sc. computer science on in 2018 when he was 19 years of age. At the age of 16 years, he topped his state board for the Intermediate science examination and secured more than 90% marks. He has obtained one-sixth of the five hundred fifty marks, one-tenth of seven hundred sixty five and 5/6th of ninety-one in his B.Sc, entrance exam and interview respectively. He belongs to an ST community.

1. The case is to be referred to the Director of the college
2. The case is to be referred to the SC/ST cell for consideration
3. The candidate is to be selected
4. The candidate is to be rejected

Answer : The candidate is to be selected

Advanced Coding

Question 1

This vacation you went to visit the golden house. There are N rooms in this golden house and its owner needs someone to take care of the management of this house. As you have been unemployed for a long time, you are interested in this job. Owner of this house wanted an intelligent manager for this role, so he created one puzzle within that golden house. The person who will be able to solve that puzzle will be the manager of the golden house.

Owner of the house kept some numbers of golden coins in each room. You have to choose two rooms, one from where you will enter and other one from where you will exit. From any room either you can exit, or you can move to the next room. While visiting any room you will collect all the gold coins, and if you enter any room then you can't skip collecting gold coins from that room, you have to take those coins. Owner wants to have exactly K coins, when you exit the room, he guarantees that there will be at least one possible solution for this puzzle.

Given number of rooms (N), and number of gold coins in N rooms. You have to find room numbers from where you will start and from where you will exit. If there are more than one solution possible, then you have to provide a solution with a smaller starting room number.
You can assume that room numbers will start from 1 and end at N.

Hint: Find a continuous subsequence whose sum will be exactly equal to K.

Example 1:

- **Input:**
  10 15 -> N =10, K = 15
  5 3 7 14 18 1 18 4 8 3 -> Number of gold coins in each room.
- **Output:**
  1 3

Explanation: There are ten rooms in the house. You want to have the Total sum of gold coins in continuous sequence of room to be 15 There are two solutions from this i.e. [1, 3] and [8, 10] then the solution with a smaller starting room number will be printed hence [1, 3] is output.

Python

```
def fun(arr, n):
  ans = []
  t = 1
  if arr[0] > 0:
    t = 0
  i = 0
  while i < n:
    if t == 0:
      j = i
      while j < n:
        if arr[j] > 0:
          j += 1
        else:
          break
      ans.append(max(arr[i:j]))
      i = j
      t = 1
    else:
      j = i
      while j < n:
        if arr[j] < 0:
          j += 1
        else:
          break
      ans.append(max(arr[i:j]))
      i = j
      t = 0
  return sum(ans)


n = int(input())
ar = list(map(int, input().split()))
print(fun(ar, n))
```

Question 2

Bob is going to bet today on horse riding. There are N horses listed in a sequence of 1 to N.

The probability of winning of each horse is different so the prices for making a bet on the horses are not the same. There is no limit on the number of horses on which he can bet, but he thinks that if he bets on a continuous sequence of horses then he has a better chance to win. Bob will get K units of money if any horse on which he bets will win. But as the award is only K units so he wants to put money less than K. Bob wants to bet on as many horses as he can. As you are his best friend, he reached out to you for help, can you please find the length of the maximum continuous sequence of horses on which Bob can make a bet, and remember he will

invest money less than K units. If there are more than one possible combinations, Bob will bet randomly on any one of them.

Given the number of horses(N), reward money(K), and price of betting on N horses in order.

Hint: For each starting index of a horse, its end index in sequences will be equal to or greater than the end index of the previous starting index.

Example 1:

- **Input:**
  90 100 -> N = 10, K=100
  30 40 50 20 20 10 90 10 10 10 -> Price to make bet on each horse in order
- **Output:**
  3
- **Explanation:**
  There are 10 horses, and the reward money is 100. So, Bob will put money less than 100. There are two possible o sequences of length three whose total money for betting is less than 100, i.e. [50 20 20] (sum is 90) and [10 10 10] (sum is 30). Bob will choose randomly one sequence from these two. As none of the other sequences with length greater than 3 will have a price less than 100 so the answer will be 3.

Example 2:

- **Input:**
  10 100 -> N = 10, K=100
  10 90 80 20 90 60 40 60 70 75 -> Price to make bet on each horse in order

- **Output:**
  1

- **Explanation:**
  There are no two consecutive horses for which the sum of price is less than 100. So, Bob will choose randomly any one horse. And the max length of the sequence will be 1.

Constraints:

- 2<=N<=105
- 1<= K<=109
- 1<=A1, A3... AN<=109

The Input format for testing:

The candidate has to write the code to accept 2 inputs.

- **First Input:** It will contain two integer N (number of horses) and K (reward money)
- **Second Input:** It will contain N integers, each separated

Python

```python
def fun(n, k, arr):
  ans = 0
  if min(arr) < k:
    ans = 1
  for i in range(n - 1):
    for j in range(i + 1, n):
      if sum(arr[i:j]) < k:
        ans = max(ans, j - i)
      else:
        break
  return ans


n, k = map(int, input().split())
arr = list(map(int, input().split()))
print(fun(n, k, arr))
```

Advanced Quantitative

Question 1: The sum of two numbers x and y is 30 and the sum of their reciprocals 1/x and 1/y is 10/63. The numbers are:

1. 9, 21
2. 14, 16
3. 18, 12
4. 17, 13

Answer: 9, 21

Question 2. There are three violet, four yellow and five orange cards. In how many ways these cards can be arranged such that no two violet cards are adjacent to each other?

Answer: 1960; 132

Question 3: Let the expressions be 4 < h < 9, 7 < g < 13. If the possible values of g, h lies between a and b, then values a and b satisfies:

1. a + b = 83
2. 3a + b = 230

3. b − a = 89
4. 5a + 4b = 327

Answer: a + b = 83

Question 4 : Study the following table and answer the following questions:

Days	Distance Upstream	Speed of the boat	Speed of the stream	Total Time Taken
Sunday	480	–	6	–
Monday	–	–	–	60
Tuesday	500	–	–	–
Wednesday	–	–	5	–
Thursday	250	10	5	–
Friday	–	14	7	–
Saturday	100	–	–	50

The total time taken by boat on thursday to travel upstream and downstream is:

1. 51.45
2. 66.67
3. 49.85
4. 50.02

Answer: 66.67

Question 5: In reference to above table, on sunday if the difference between the time taken by the boat to go upstream and downstream is 12 hours, then the total time taken by the boat to go upstream and downstream together is: (round to one decimal)

1. 52.3
2. 50.3
3. 45.4
4. 52.5

Answer: 52.5

Question 6: In reference to above table , On saturday, if the ratio of the speed of the stream, to the speed of boat is 2:3 then the difference between the time taken by the boat to go upstream to that of downstream is: (round to one decimal)

1. 6.5 hrs
2. 7.5 hrs
3. 6 hrs
4. 4 hrs '

Answer: 6.5 hrs

Question 7: Suppose **A** and **B** are the roots of the polynomial $2x^2 + 21x - 3 = 0$. Find the value of **1/A + 1/B**

Answer: 7

Question 8: Find the ratio of the area of a rectangular hexagon (a 6-gon with equal sides and equal internal angles) and the area of the circle passing through the vertices of the hexagon.

1. $2\sqrt{3}/\pi$
2. $3\sqrt{3}/\pi$
3. $\sqrt{3}/\pi$
4. $3\sqrt{3}/2\pi$

Answer : $3\sqrt{3}/2\pi$

Question 9: If **x,y** and **z** are the roots of $3x^3 + 2x^2 - 4x - 1$, then find the value of **(1/x + 1/y + 1/z)(x + y + z)** *Answer : 8*

Question 10. A pair of dice is rolled together till a sum of either 6 or 7 is obtained. If x denotes the probability that 7 comes before 6, then the value of x is (correct up to four decimal places)

1. 0.7692
2. 0.8571
3. 0.8333
4. 0.5454

Answer: 0.8333

Advanced Reasoning

Question 1. In a certain code language, 'BOARD' is written as '114263'. How will 'DARE' be written in that language?

Enter the answer in the space provided on the screen. Answer should be in whole numbers without any symbols (Eg, %, kms, ms etc)

Answer:

Question 2. Statement is given followed by two courses of action numbered I and II. Assuming that everything in the statement is true…..logically follows.

Statement: The standard of education at most of the government primary schools is pathetic.

Course of Action:

1. The Government should make it mandatory for political leaders to enroll their child in government primary school.
2. Government should improve the student-teacher ratio.

Options

1. Neither course of action I nor II follows
2. Only course of action I follows
3. Both courses of action I and II follow
4. Only course of action II follows

Answer : Only course of action II follows

Question 3. Statement is given followed by two course of action numbered I and II. Assuming that everything in the statement is true…..logically follows.

Statement:- It is observed in some of the government primary schools that the teachers are not very well educated to teach the children.

Course of Action:-

1. The government should remove caste based reservation.

2. The government should conduct training program for the teachers at regular interval of time.

Options

1. Both courses of action I and II follow.
2. Only course of action I follows
3. Only course of action II follows
4. Neither course of action I nor II follows

Answer: Only course of action II follows

Question 4. A questions is given, followed by two statements labelled I and II. Identify which of the statements is/are sufficient to answer the question.

Questions: In a tutorial, there are six students- Phani, Kiran, Jwalith, Ram, Shyam and Tony of different ages. Who is the oldest among them?

Statements:

1. Ram is older than Phani and Jwalith. Ram is younger than Kiran. Shyam is older than only Tony.
2. Shyam is older than Jwalith but younger than Phani. Tony is older than only Ram. Phani is not the oldest.

Options

1. Data either in statement I alone or in statement II alone is sufficient to answer the question.
2. Data in both statements I and II together are not sufficient to answer the question
3. Data in statement II alone is sufficient to answer the question, while the data in statement I alone is not sufficient to answer the question
4. Data in statement I alone is sufficient to answer the question, while the data in statement II alone is not sufficient to answer the question.

Answer: Data either in statement I alone or in statement II alone is sufficient to answer the question.

Question 5. In a certain code language, "FONDLE" is coded as "122610303214". How will DERAIL be coded in this language?

1. 28225401210
2. 129118512
3. 141132075

4. 26204381210

Answer:

Question 6. There is an acute need of an architect for the firm of Teena, who is a successful architect practitioner and running a very big architect firm. The candidates should be well-qualified, skilled, highly experienced and reliable. A placement agency has recommended a candidate named Preeti who has recently graduated in architecture from one of the best schools of architecture as the topper of the institute. She is a gold medalist. She has successfully completed her internship for one year and registered with the government. Decide whether the candidate is suitable for teena or no.

Answer : No. (Not experienced)

Question 7. In a corona ration queue, 8 people are standing. Jaffar is standing to the left of Raquib but to the right of Pushpa. Omkar is standing to the right of Naresh and the left of Prithvi.. Sanju is standing to the right of Raquib and to the left of Tanu. Pushpa is first and Prithivi is last in the queue. Who is standing to the left of Naresh?

Answer : Raquib

Question 8. In a theatre, nine person – K, L, M, N, O , P, Q , R, S and T are sitting in a straight row facing the screen (north) but not necessarily in the same orfer . M is fourth to the left of Q. P is fourth to the right of K and second to the left of S, who is fifth to the right of N. L is not an immediate neighbor of either S or M. There are only three persons between O and N. Q is second to the right of K. Who among the following sits to the right of R?

Answer : K