ESTD. 2000 Reg. No.: S000176

# NAVPRAYAS
(A GROUP OF INNOVATIVE THOUGHTS)

# PUZZLE RACE

## Junior Group (VII-VIII) Question Paper 2025

## Qualifier 1

If

14=116
22=44
38=964
71=491

Then,

73=?

## Round A

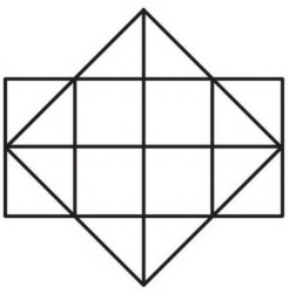
**A1.**
If you divide 50 by a half and add 5, what is the answer?

**A2.**
What is the next number in the series?
4, 22, 7, 19, 10, 16, 13, 13, 16, 10, ?

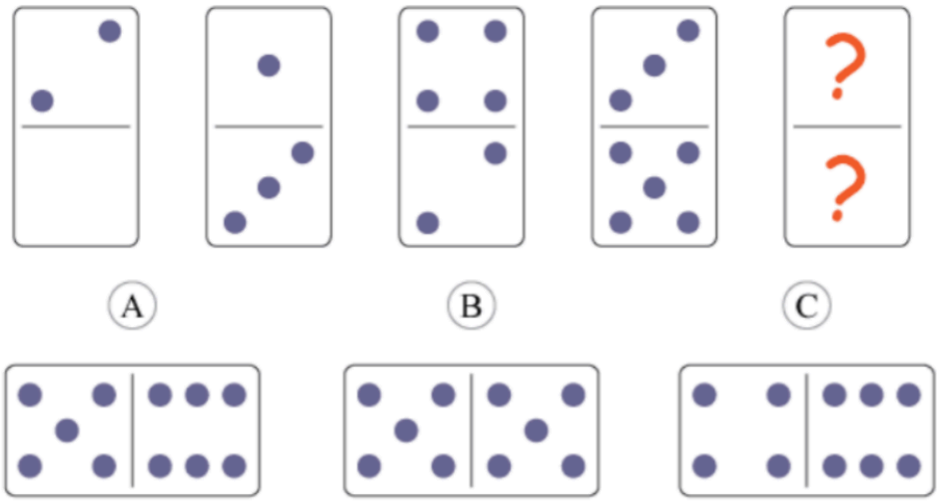
**A3.**
I have four legs in the morning, two in the afternoon, and three in the evening.What am I?
A) A cat B) A clock C) A human D) A table

**A4.**
Two soldiers were sitting in the barracks, a Colonel and a Private.The Private was the son of the Colonel, but the Colonel was not the father of the Private. How is this possible?

**A5.**
How many triangles and squares are there in this diagram separately?



**A6.**
**Which domino completes the row?**




**A7.**
What 3 positive numbers give the same result when multiplied and added together?

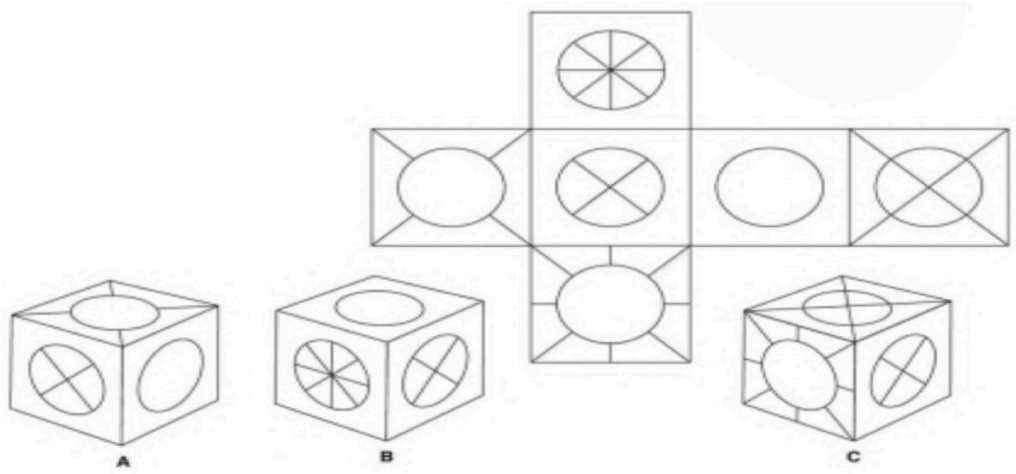
**A8.**
If Mrs. Smith's rooster lays an egg in Mr. Brown's yard, who owns the egg?

**A9.**
You're planning to spend your birthday money taking some friends to the movies.
Case 1: You take 1 friend to the movies twice.
Case 2: You take 2 friends to the movies at the same time.
Which case will be cheaper ?

**A10.**
Julie says to her brother Peter: "I have as many sisters as brothers."
"Yeah, well," replies Peter: "I've got twice as many sisters as I have brothers."
How many sisters and brothers are there?

## Qualifier 2

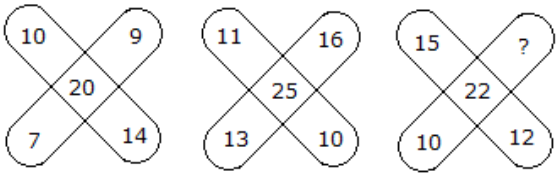
Select the Correct box.




# Round B

**B1.**

Which one will replace the question mark ?




**B2.**

I take birth daily with new words, but never speak. What am I ?

**B3.**

Asha is twice as tall as Radha but twice shorter than Manvi.Ganga is half the height of Radha but twice the height of Sheela.Who is the middle-most girl in height?

**B4.**

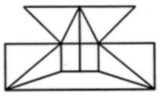
A singles tennis tournament is held in which 30 men participate.If a player is eliminated as soon as he loses a match, how many matches are required to determine the winner?

**B5.**

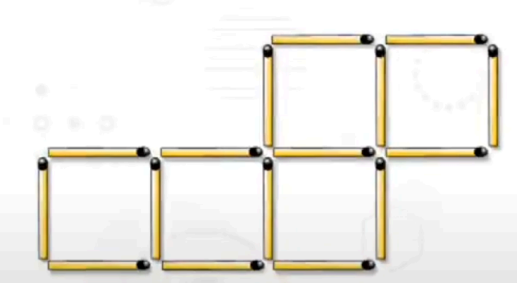
A man goes out for a walk during a storm with nothing to protect him from the rain.He doesn't have a hat,a hood or an umbrella.But by the end of his walk, there isn't a single wet hair on his head. Why doesn't the man have wet hair?

**B6.**
A monkey is trying to climb a coconut tree. He takes 3 steps upward and slips back 2 steps downward. Each upward step is 30 cm and the downward step is 40cm. How many steps to climb a 100cm tree?

**B7.**
Find the minimum number of straight lines required to make the figure.

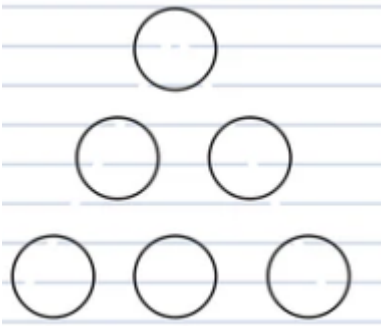


**B8.**
Move 2 matches to new positions to get only 4 squares, no overlapping or loose ends and all squares are also equal. Draw your figure.



**B9.**
An elephant and a tiger were carrying full sacks on their backs. The elephant started complaining that his load was too heavy. The tiger said to him "Why are you complaining? If you gave me one of your sacks I'd have double what you have and if I give you one of my sacks we'd have an even amount." Let elephant and tiger are carrying ‘E’ and ‘T’ no. of sacks respectively. Tell the number of days of the month which come in between ‘E’th and ‘T’th month of the year.

**B10.**
Can you place the digits 1 – 6 into the circles so that each side of the triangle adds to 9, repetition is not allowed?



## Qualifier 3

What’s next in this series?

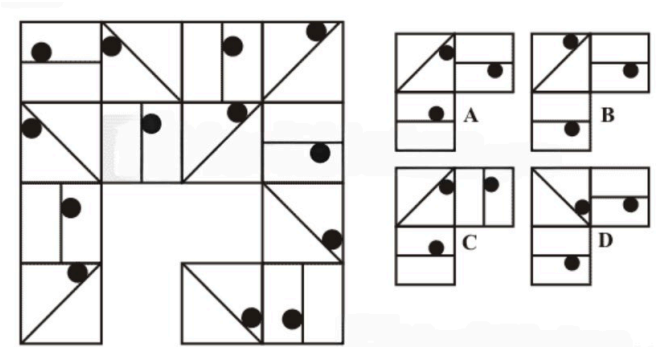
O, T, T, F, F, S, S, E, N, T, E, T, T, F, F, ?

# Round C

**C1.**
What is black when you buy it, red when you use it, and grey when you throw it away?

**C2.**
A train is one mile long. It travels at the rate of one mile a minute through a tunnel which is also one mile long.
Can you say how long it will take for the train to pass completely through the tunnel?

**C3.**
What is the missing piece?




**C4.**
How long will it take to chop a wooden pole into twelve equal pieces if every cut takes a minute?

**C5.**
An addition equation is shown below. Each type of symbols represents a number from 1 to 9.

$$\begin{array}{r} @\,3\;5\;\# \\ +\quad \#\;\$\;2 \\ \hline \$\;1\;4\;\$ \end{array}$$

What are Values of @,#,$ ?

**C6.**
A clock shows the time as 3:15. What is the angle between the hour and the minute hand?

**C7.**
I have keys but no locks. I have space but no room. You can enter, but you can't go outside. What am I ?

**C8.**
You have 15 Rs with you. You go to a shop and the shopkeeper tells you the price as 1 Rs per chocolate. He also tells you that you can get a chocolate in return for 3 wrappers. How many maximum chocolates can you eat?

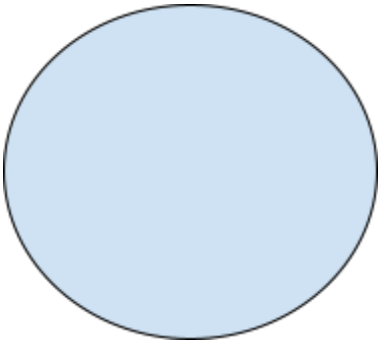
**C9.**
What is the biggest number that can be written with four 9s?

**C10.**
What is the next number in the series?

3, 5, 10, 20, 37, ?

## Qualifier 4

Given a **Circle** and **Four Straight Lines**. What is the maximum number of pieces that one can cut the circle using these four straight lines?



# Round D

**D1.**
It's as light as a feather, but also the strongest person can't hold it for more than five minutes. What is it?

**D2.**
Raja Mahinder Pratap Singh decided to build a wall to protect his kingdom from enemy attacks. The wall had to be 5 meters thick and 13 meters high. The border of the country has a length of 1350 kilometers. If one cubic meter of stone weighs about 2660 kg, how much heavier becomes the earth by building this wall?

**D3.**
Guess the next three letters in the series:

GTNTL…

**D4.**
Sushma and Liya decided to play tennis against each other. They bet $1 on each game they played. Sushma won three bets and Liya won $5. How many games did they play?

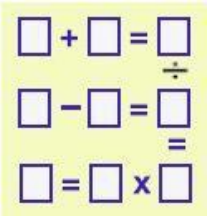
**D5.**
The day before two days after the day before tomorrow is Saturday.What day is it today?

**D6.**
A solid cube is made up of 27 small cubes.Two opposite faces of the cube are painted red, two opposite faces yellow, and the remaining two opposite faces white.How many small cubes have both yellow and white colors and not red color?

**D7.**
A market gardener was planting a new orchard. The young trees were arranged in rows so as to form a square, and it was found that there were 146 trees unplanted. To enlarge the square by an extra row each way he had to buy 31 additional trees.
How many trees were there in the orchard when it was finished(after the enlargement of the square)?

**D8.**
You find a strange digital clock in a locked room.
It shows 14:77, a clearly invalid time.
Next to it is a note:
"To unlock the truth, subtract the minute from the hour,
Then reverse what's left, and you'll have the power."
What 2-digit number unlocks the room?

**D9.**
Use the numbers 1, 2, 3, 4, 5, 6, 7, 8 and 9 to satisfy the given equations. Don't repeat the numbers.



**D10.**
I am a word of seven letters.
My first two letters refer to a man,
My first three letters refer to a woman,
My first four letters refer to a great man,
And the whole word refers to a great woman.
What am I?

## Qualifier 5

What's special about July 6, 1989, specifically at 23:45 PM?

# Round E

**E1.**
Twenty-four red socks and 24 blue socks are lying in a drawer in a dark room. What is the minimum number of socks I must take out of the drawer which will guarantee that I have at least two socks of the same color?

**E2.**
For every Christmas since Vanya's birth, his parents deposit as many coins as she is old. But one year her father did not deposit the money. Now there are 18 coins in the bank. How old is Vanya and on which birthday her father did not deposit the money?

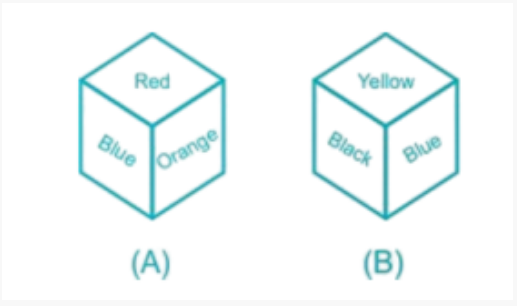
**E3.**
Can you circle exactly **three numbers** that add to 17?

| | | |
|---|---|---|
| 2 | 4 | 1 |
| 1 | 3 | 8 |
| 9 | 2 | 1 |

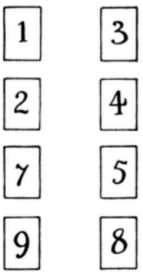
**E4.**
Two twins have certain peculiar characteristics.One of them always lies on Monday, Wednesday, and Friday.The other always lies on Tuesdays, Thursdays and Saturdays.On the other days they tell the truth.You are given a conversation.
Person A -- today is Sunday, my name is Ram.
Person B -- today is Thursday, my name is Shyam.What day is today?

**E5.**
A spy is interrogated. She's told:
"If you tell the truth, you will be imprisoned."
"If you lie, you will be executed."
She replies: "I will be executed."
What will logically happen?
A. She will be executed
B. She will be imprisoned
C. She will be released
D. The system will break—her statement creates an illusion

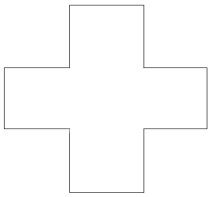
**E6.**
What is the opposite face of "Red"?




**E7.**
Kajal placed eight numbered cards on the breakfast table, as shown here, and asked her young friends to rearrange them, moving as few as possible, so that the two columns should add up alike. Give the rearranged cards of each column and write the number of steps taken.




**E8.**
Here is an ordinary cross.You are allowed to make two straight cuts across it.How do you cut it to make the most pieces?

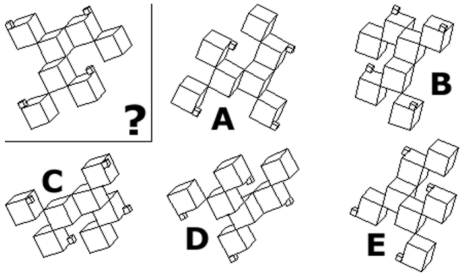


**E9.**
How many such pairs of digits are there in the numbers “2651894” after arranging the digits of the number in increasing order each of which has as many digits between them in the number, as they have between them in the sequence?

**E10.**
Imagine that you have three boxes, one containing two black marbles, one containing two white marbles, and the third, one black marble and one white marble. The boxes were labeled for their contents — BB, WW, and BW — but someone has switched the labels so that every box is now incorrectly labeled. You are allowed to take one marble at a time out of any box, without looking inside, and by this process of sampling you are to determine the contents of all three boxes. What is the smallest number of drawings needed to do this?

## Qualifier 6

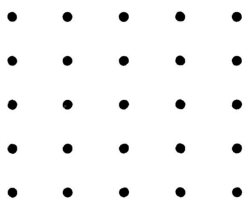
Which of the shape(s) is/are identical to the first one? There might be more than one.



# Round F

**F1.**

Twenty-five dots are arranged in a square formation in 5 rows as shown in the sketch:



Can you connect 12 of these dots with straight lines to form a perfect cross which has five dots inside it and 8 dots outside?

**F2.**

Below you can find a proverb.
The letters have been converted to their location in the alphabet.
For example: CAT = 3 + 1 + 20 = 3 1 2 0
1 2 1 2 1 7 8 2 0 5 1 8 9 1 9 2 0 8 5 2 5 1 9 2 0 1 3 5 4 9 3 9 1 4 5

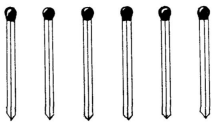
**F3.**

Find out the missing number.

| | | |
|---|---|---|
| **6** | **15** | **49** |
| **6073** | **1011** | **201** |
| **42519** | **340161** | **??** |

**F4.**

Shown in the sketch are six matchsticks.



Rearrange them to make nothing.

**F5.**

There are two candles of equal lengths but of different thicknesses.The thicker candle lasts for 6 hours while the thinner one lasts for 2 hours less than the thicker one.A person lights the two candles at the same time and goes to play.After returning home, the person saw that the thicker candle was twice the length of the thinner one.How long ago did the person light the two candles?

**F6.**

At a village bakery, three customers—Anita, Bimal, and Charu—each bought only one type of pastry: Anita bought chocolate pastries at ₹5 each
Bimal bought cream pastries at ₹3 each
Charu bought fruit pastries at ₹2 each
Each person spent exactly the same total amount of money, and they each bought a whole number of pastries, with no one buying more than 15 pastries.
How many pastries did each person buy, and how much did each spend?

**F7.**

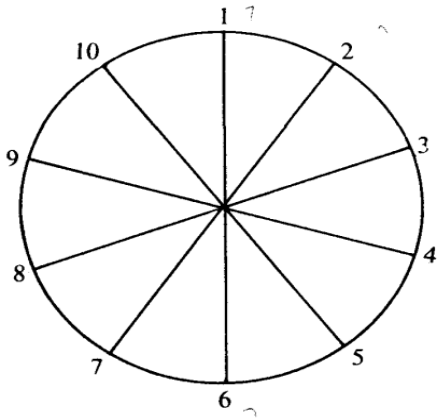
Rearrange the nine digits in the square so that in all the eight directions the difference between one of the digits and the sum of the remaining two shall always be the same.

In the example shown it will be found that all the rows and columns give the difference 3; (thus 4 + 2 - 3, and 1 + 9 - 7, and 6 + 5 - 8, etc.), but the two diagonals are wrong, because 8 - (4 + 1) and 6 - (1 + 2) is not allowed: the sum of two must not be taken from the single digit, but the single digit from the sum.
HINT- The difference throughout is 5.

| | | |
|---|---|---|
| 4 | 3 | 2 |
| 7 | 1 | 9 |
| 6 | 5 | 8 |

**F8.**

Can you rearrange the position of the numbers 1 to 10 so that the sum of any two adjacent numbers is equal to the sum of the pair of numbers at the opposite ends of the diameters?




**F9.**There are 25 horses among which you need to find out the fastest 3 horses. You can conduct a race among at most 5 to find out their relative speed. At no point, you can find out the actual speed of the horse in a race. Find out the minimum no. of races which are required to get the top 3 horses.

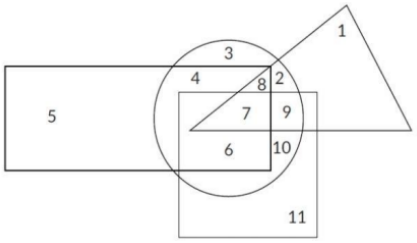
**F10.**Fill the blank squares with a number, using only the digits 1 to 9. Horizontal lines should add up to the totals in the right-hand column, and vertical lines should add up to the totals in the bottom row. There are also two diagonal lines. One runs down from the top left-hand corner to the bottom right-hand corner, and the other runs down from the top right-hand corner. These should add up to 21 and 20 as shown.

| | | | | |
|---|---|---|---|---|
| | | | | 20 |
| | | | 7 | 30 |
| | 1 | | | 11 |
| | | | 4 | 20 |
| | | 3 | | 17 |
| 21 | 12 | 26 | 19 | 21 |

# Booster Round

**1.** How many months have 28 days?

**2.** In the figure, the rectangle, square, circle, and triangle represent the regions of wheat, gram, maize, and rice cultivation respectively. On the basis of the figure, answer the following questions. In which area are all 4 crops cultivated?




**3.** A positive integer that, when added to 2000 gives a sum which is greater than when multiplied by 2000. Find the positive integer.

**4.** What word begins and ends with an ‘e’ but only has one letter?

**5.** How many sets of two letters have as many letters between them as in the English alphabetical order in the word ‘WRISTWATCH’.

**6.** Deepak said to Nitin, "That boy playing with the football is the younger of the two brothers of the daughter of my father's wife." How is the boy playing football related to Deepak?

**7.** A man has four daughters, and each daughter has a brother. How many children does he have ?

**8.** The 22nd and 24th presidents of a country have the same parents but were not brothers. How can this be possible ?

**9.** The clock was set on Thursday, at 4 AM. If the clock gains 20 minutes per hour, then what will be the time that the clock shows on Friday, 8:30 PM?

**10.** A vault contains gold bars, silver bars, and bronze bars. There is less gold weight than silver weight, and fewer silver weight than bronze weight.The total weight is less than 50 kg. No two sets can be combined to make a perfect 10 kg sum. If gold weighs 8 kg each, silver 5 kg, and bronze 3 kg, what could be the number of bars in the vault?

A. 2 gold, 3 silver, 4 bronze
B. 1 gold, 2 silver, 5 bronze
C. 3 gold, 5 silver, 7 bronze
D. 2 gold, 4 silver, 6 bronze

**11.** Bacteria are known to multiply very rapidly. A certain container contains just one bacteria on the first day and there are twice as many on the next day. In this manner the number of bacteria in the container doubles itself everyday. Assuming that the container would be full of bacteria on the 10th day, on which day would the container be half full.

**12.** Nisha found a mysterious map that claimed to lead to a hidden treasure. The map said, "Walk 10 steps north, then double that number to the east, and finally half of the total steps south." If Nisha followed these instructions, how many steps in total did she take?

**13.** If A + B means A is the mother of B; A - B means A is the brother B; A % B means A is the father of B and A x B means A is the sister of B, which of the following shows that P is the maternal uncle of Q?

a)Q - N + M x P

b)P + S x N - Q

c)P - M + N x Q

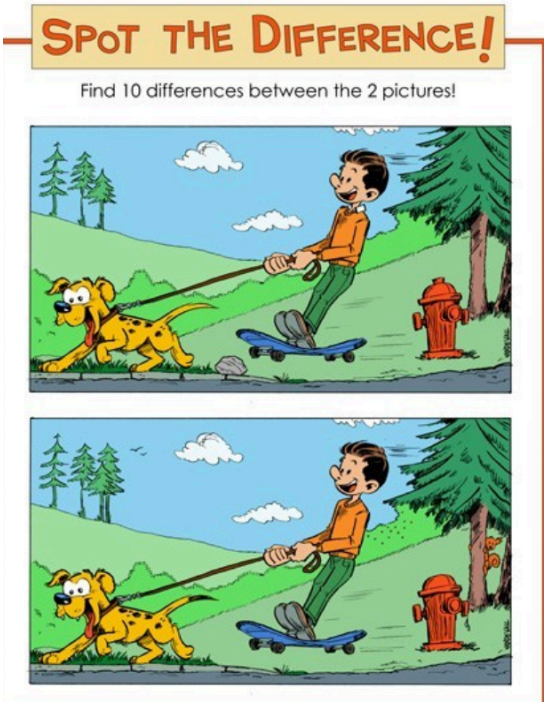
d)Q - S % P

**14.** A Dark Lord is leading his army of Goblin marauders deep into the territory of the White Wizard. Dawn is on its way though, and his Goblin Raiders can't stand sunlight, so he has to move quickly. He really wants to burn down the town of Whitehaven, but doesn't know how far away it is. If his base, Doomtowers, is 40 miles away, Gobton 24 miles away, Sunvale 28 miles away and Wizardskeep 44 miles away, how far is Whitehaven?

**15.** Find missing number

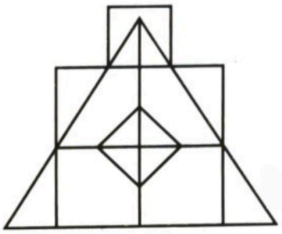
21, 35, 56, 91, 154, ?

**16.** Find 8 differences between the 2 pictures. Circle these things in the given figure.



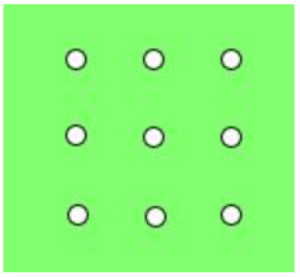

**17.** You roll two dice. What is the probability that the number on the first die divides the number on the second die exactly?

**18.** How many triangles and squares are in the figure?



**19.** Imagine a sheep pen with a bunch of sheep, some of which are ewes.
The number of sheep heads multiplied by the number of sheep hooves multiplied by the number of ewes' tongues equals 100. How many sheep are there, and how many of them are ewes?

**20.** Join all nine dots by drawing a minimum number of straight lines. The straight lines must be continuous i.e. one must not lift the pen from the paper once start drawing.According to you draw your correct one with numbering in arrows.Also, write the number of straight lines



# IQ GAME Round

**1.**

In the 10 cells of Figure 1.7 inscribe a 10-digit number such that the digit in the first cell indicates the total number of zeros in the entire number, the digit in the cell marked “1” indicates the total number of 1’s in the number, and so on to the last cell, whose digit indicates the total number of 9’s in the number. (Zero is a digit, of course.) The answer is unique.

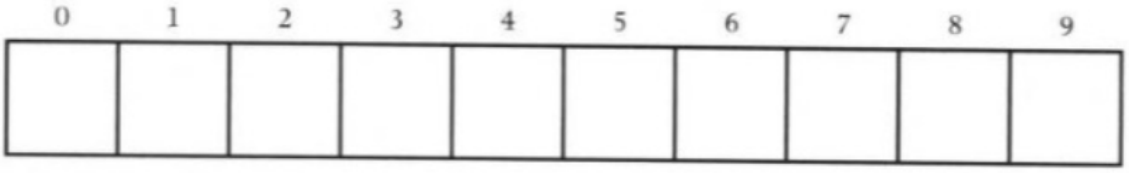



**Figure 1.7**

## OR

**2.**

**Burning ropes**

You have two ropes, each of which takes 1 hour to burn. But both ropes have different densities at different points, so there's no guarantee of consistency in the time each rope takes at different sections within the rope to burn. How do you use these two ropes to measure 45 minutes?

## OR

**3.**

Suppose that you are blindfolded in a room and are told that there are 1000 coins on the floor. 980 of the coins have tails up and the other 20 coins have heads up. Can you separate the coins into two piles so as to guarantee both piles have equal number of heads? Assume that you cannot tell a coin’s side by touching it, but you are allowed to turn over any number of coins.

# Junior Group (VII-VIII)

## ANSWER KEY

## QUALIFIER 1

ANSWER- 499

# ROUND A

**A1. 105**

**A2. 19**

**A3. C) A human**

**A4.** The Colonel was the mother of the Private.

**A5. 12 squares and 24 triangles.**

**A6. The answer is C.**

**A7. 1,2,3**

**A8. No one.**

**A9. Case 2**

**A10. 3 BROTHERS AND 4 SISTERS.**

## QUALIFIER 2

**ANSWER - B is the correct cube.**

# ROUND B

**B1. 7**

**B2. Newspaper**

**B3. Radha**

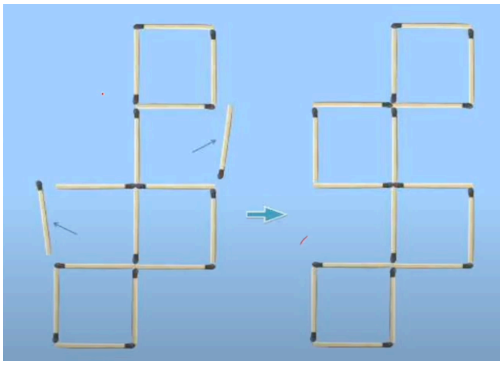
**B4. 29**

**B5. Because he is bald.**

**B6. 8 steps**

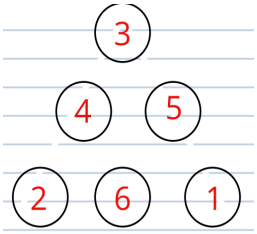
**B7. 17**

**B8.**



**B9. 30**

**B10 . Answer as shown in figure given below and its correct rotations are all valid.**




## QUALIFIER 3

**ANSWER- S**

# ROUND C

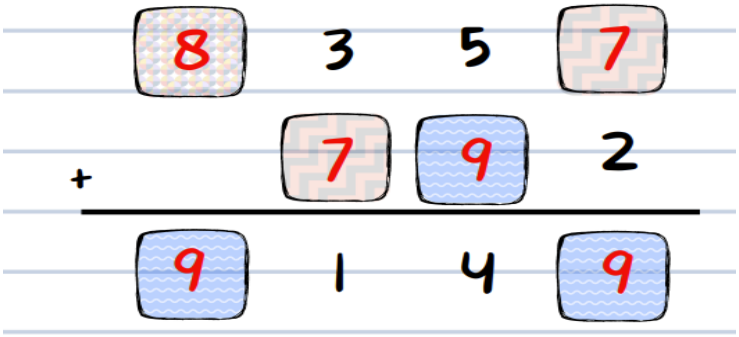
**C1. Coal**

**C2. 2 minutes**

**C3. B** option

**C4. Eleven minutes**

**C5.** @= 8, #= 7, $=9




**C6. 7.5**

**C7. Keyboard**

**C8. 22**

**C9. 9^9^9^9**

**C10. 63**

## QUALIFIER 4

**ANSWER-11**

# ROUND D

**D1.Breathe**

**D2. Zero/No Change,** Obviously the stones are coming from the earth; the mass of the earth of course won't change by building such a big wall.

**D3. I, T, S**

**D4.Eleven.**

**D5. Friday.**

**D6. Correct answer - “Four”**

**D7. 7921**

**D8. Correct Answer- “36”**

**D9. 1 + 7(or 7 +1 ) = 8, 9 - 5 = 4, 6 = 3 x 2**

**D10. Correct answer -”Heroine”**

## QUALIFIER 5

**ANSWER-** It could be written as **23:45 6/7/1989 or 123456789**

# ROUND E

**E1. 3 socks**

**E2. 6 years old and 3rd birthday**

**E3. 2, 13, 2**

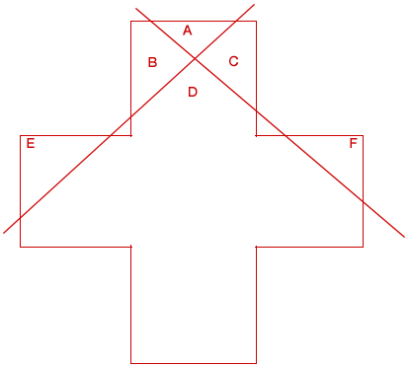
**E4. THURSDAY**

**E5. Correct answer - “D”**

**E6. Yellow**

**E7. (1,2,7,8) and (3,4,5,6) and Steps=2**

**E8. T**his is one way of making **six pieces** with two cuts.




**E9. 7 pairs**

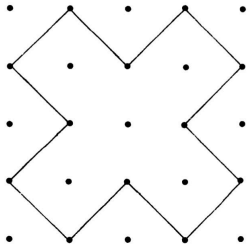
**E10. 1**

## QUALIFIER 6

**ANSWER- C and E**

# ROUND F

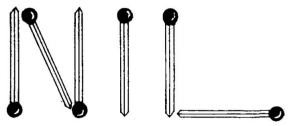
**F1.**



**F2. Laughter is the best medicine.**

**F3. 3061459**

**F4.**




**F5. 3 hours**

**F6. "Anita-6 , Bimal-10 ,Charu-15 "**

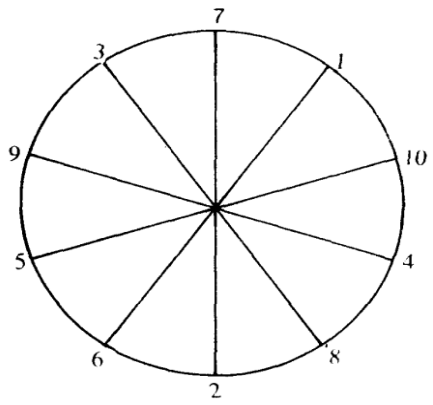
**F7.** Any of the below three grids are correct. (Needless to say, all working rotations like mirror imaged, water imaged of any of these 3 grids are also correct.) The difference throughout is 5.

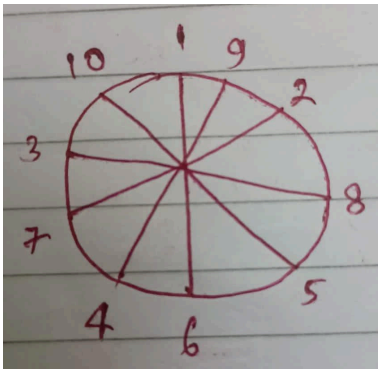
| | | |
|---|---|---|
| 2 | 1 | 4 |
| 3 | 5 | 7 |
| 6 | 9 | 8 |

| | | |
|---|---|---|
| 8 | 1 | 4 |
| 3 | 5 | 7 |
| 6 | 9 | 2 |

| | | |
|---|---|---|
| 2 | 1 | 6 |
| 3 | 5 | 7 |
| 4 | 9 | 8 |

**F8.** Two answers are possible here.




**F9. 7 races**

**F10.**Note that it might be possible to get a solution that's different from the one given here.

| | | | | |
|---|---|---|---|---|
| | | | | 20 |
| 6 | 8 | 9 | 7 | 30 |
| 2 | 1 | 5 | 3 | 11 |
| 6 | 1 | 9 | 4 | 20 |
| 7 | 2 | 3 | 5 | 17 |
| 21 | 12 | 26 | 19 | 21 |

## BOOSTER ROUND

**1. 12**

**2. 7**

**3. 1**

**4. Envelope**

**5. 2**

**6. Brother**

**7. 5**

**8.** They were the **same man OR** they were **brother and sister OR** they were both sisters.

**9. 10 AM of Saturday**

**10. Correct answer 'B'**

**11. 9th**

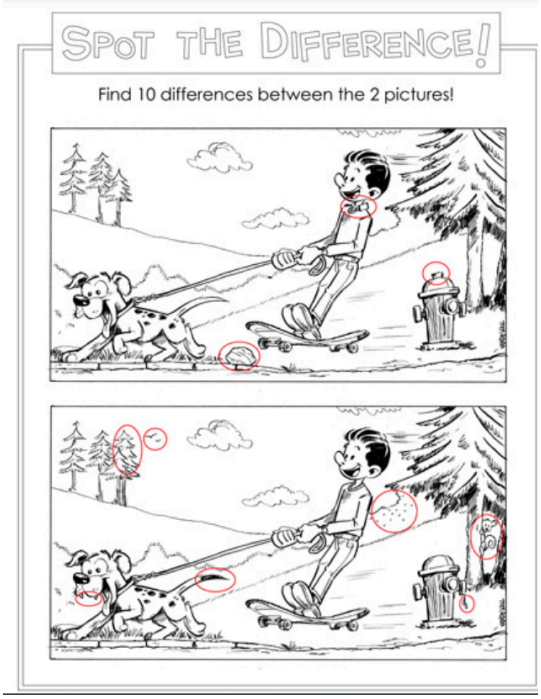
**12. 45**

**13. (c) P - M + N x Q**

**14. 40**

**15. 273**

**16.** There are 10 differences in total. If you've circled any correct 8 or more then it is correct.



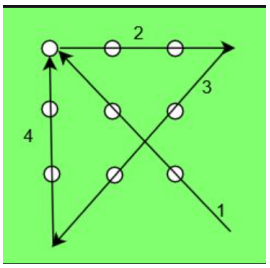
**17. 14/36=7/18**

**18. 21 Triangles and 7 squares**

**19. 5,1**

**20. 4 straight lines**

{ three more figures possible}




**IQ GAME ROUND**

**1. 6210001000**

**2.**

This is a classic brain teaser question. For a rope that takes *x* minutes to burn, if you light both ends of the rope simultaneously, it takes *x/2* minutes to burn. So we should light both ends of the first rope and light one end of the second rope. 30 minutes later, the first rope will get completely burned, while the second rope now becomes a 30-min rope. At that moment, we can light the second rope at the other end (with the first end still burning), and when it is burned out, the total time is exactly 45 minutes.

**3.**

**Answer:**

Let's say that we separate the 1000 coins into two piles with n coins in one pile and 1000 - n coins in the other. **If there are m coins in the first pile with heads up, there must be 20 - m coins in the second pile with heads up.** We also know that there are n - m coins in the first pile with tails up. We clearly cannot guarantee that m = 10 by simply adjusting n.

What other options do we have? **We can turn over coins if we want to**. Since we have no way of knowing what a coin's side is, it won't guarantee anything if we selectively flip coins. However, **if we flip all the coins in the first pile, all heads become tails and all tails become heads**. As a result, it will have **n - m heads and m tails (symmetry)**. So, to start, we need to make the number of tails in the original first pile equal to the number of heads in the second pile; in other words, to make **n - m = 20 - m**. Thus, **n = 20 makes the equation hold.**

**If we take 20 coins at random and turn them all over, the number of heads among these turned-over 20 coins should be the same as the number of heads among the other 980 coins.**