Computational Thinking

Class 4

Student Handbook

CENTRAL BOARD OF SECONDARY EDUCATION

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PREFACE

The National Education Policy (NEP) aims to position India as a leader in emerging knowledge fields by integrating technologies like AI, Machine Learning, Big Data, and Computational Thinking into school education. It promotes technology-enabled, interactive, and gamified learning using tools such as Augmented Reality (AR), Virtual Reality (VR), and virtual labs to foster creativity, problem-solving, and interdisciplinary exploration. NCFSE 23 carries this recommendation further for implementation.

While Artificial Intelligence (AI) is an important requirement, Computational Thinking (CT) should be a broader skill, developing a foundation for learning AI. It can cover various aspects like Cybersecurity, basic network, etc. Hence, CBSE approaches this by Integrating Computational Thinking with AI and other technological advancements, without dependence on any platform.

The book focuses on strengthening logical reasoning through structured visual, numerical, and real-life problems involving pattern progression, symmetry, transformations, ordering, and multi-step thinking. Learners engage with tasks that require comparing possibilities, identifying rules, and breaking problems into smaller parts. The document also outlines age-appropriate pedagogy, learning resources, assessment support, and classroom implementation guidelines to promote competency-based, experiential learning aligned with NEP 2020.

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Introduction

Computational Thinking (CT) is a problem-solving approach that comprises Decomposition, Pattern Recognition, Abstraction, Algorithm Design, Data Analysis and Troubleshooting. Computational Thinking skills involve solving complex problems that promote thinking skills such as critical & creative thinking, abstraction and pattern recognition, as well as algorithmic thinking. Problem identification and problem solving necessitate the application of multidisciplinary understanding for creating effective solutions.

Artificial intelligence (AI) is a cutting-edge technology that empowers machines and computers to perform tasks that usually require mimicking human intelligence. These machines can perform complex thinking processes such as data analysis, pattern recognition, prediction of trends, solving problems and decision making. Thus, AI involves simulating cognitive processes associated with human intelligence and is widely applicable in various sectors such as banking, healthcare, defense, education, entertainment, agriculture and others for processing information, solving intricate problems and for planning.

The National Education Policy (NEP) aims for India to emerge as a global leader in new emerging knowledge domains such as artificial intelligence, machine learning, data analytics, 3-D machining etc. To realise this goal, the policy suggests teaching students Mathematics and Computational Thinking, along with new subjects like Artificial Intelligence, Machine Learning, and Data Science during their school education. The policy also focuses on technology-enabled learning and classrooms by using tools like artificial intelligence, machine learning, and adaptive testing to create knowledge.

The National Curriculum for School Education draws from this policy aspiration and emphasizes the need to introduce these emerging domains of study and technologies in the school curriculum. It recommends inclusion of subjects such as design thinking, augmented reality, virtual reality, artificial intelligence, and computational thinking. Additionally, it promotes the use of gamified content, interactive content, and immersive experiences (such as AR, VR, or virtual labs) to enhance student learning. In a variety of subjects, including design, music, art, and sciences, these resources support students in knowledge creation and exploration, and development of capacities such as problem-solving, critical and creative thinking.

CBSE under the aegis of the Department of School Education and Literacy, Ministry of Education, Govt. of India, is implementing a Curriculum on Computational Thinking and Artificial Intelligence (CT & AI) to inculcate AI-readiness in school students. This curriculum will be implemented from classes 3rd to 8th, in the session 2026-27, and aims to develop AI-Ready learners, by focusing on Computational Thinking skills. The AI-readiness, so inculcated through CT Skills, will help develop the capacities of learners to use computational thinking, such as logical thinking, problem solving, pattern recognition, and so on, and understand the role and use of Artificial Intelligence in daily life. The Curriculum aims to build strong foundations in computational thinking, digital literacy, and responsible use of technology, along with nurturing innovation, critical thinking, and ethical decision-making capacities.

1. Relevance: Importance of Introducing CT and AI

Introducing CT and AI at the Grade 4 level is vital for positioning students as future-ready digital citizens.

- **Foundation for AI:** Computational thinking is the intellectual backbone and cognitive framework required to understand and eventually create AI-driven solutions
- **Cognitive Development:** It fosters essential human capacities such as logical thinking, systematic problem-solving, and pattern recognition
- **Preparation for the Future:** Early exposure equips individuals with the ability to use data effectively and apply technology ethically, which is necessary for the modern world of work
- **Holistic Growth:** It promotes interdisciplinary learning, helping students see that knowledge is not compartmentalized by connecting Math, Science, and Humanities

2. Objectives (Curricular Goals)

For Grade 4 (part of the Preparatory Stage), the curriculum focuses on three primary goals:

- **CG-1:** Develop basic problem-solving skills with procedural fluency to solve daily-life problems as a step toward formal computational thinking
- **CG-2:** Develop basic capacities of analytical thinking, verbal, and visual reasoning
- **CG-3:** Demonstrate understanding of basic concepts of computers and knowledge of hardware and software

3. Learning Outcomes

ABSTRACT THINKING

Students will be able to solve moderate to highly moderate problems with partially visible or incomplete ideas, using:

- Different viewpoints of 3D objects
- Changes in shapes after flips, turns, cuts/folds, or rotations
- Hidden or missing parts in incomplete shapes or patterns
- Mirror images and identical halves based on symmetry

PATTERN RECOGNITION

Students will be able to identify patterns involving one or more changes in consecutive terms, formed using:

- Numbers
- Shapes or images
- Letters
- Or a mix of the above

DECOMPOSITION

Students will be able to break down problems involving a cluster of moderate clues, using information from:

- Number clues (place values, sum/difference/product)
- 3D objects and their parts (faces, edges, corners)
- Step-by-step exchanges or transfers (money, objects, digits, quantities)
- Tables or charts with multiple pieces of information
- Conditions for counting/grouping/sorting items

ALGORITHMIC THINKING

Students will be able to follow a set of well-defined, elaborate conditions to solve moderate to complex problems involving:

- Number sequences formed using simple operations
- Movements on grids or direction-based paths
- Values that increase or decrease across steps
- Multi-step instructions involving moves, changes, transfers, swaps
- People/Events arranged in an order using attributes or chronological clues
- Simple counting instructions

4. Mapped with NEP and NCF 2023

The curriculum is directly aligned with national educational reforms:

- **NEP 2020 Vision:** It fulfils the goal of making India a global leader in emerging domains like AI and Machine Learning by integrating them into school education
- **NCF-SE 2023 Alignment:** The learning standards (Goals Competencies Outcomes) are derived from the framework suggested in the National Curriculum Framework for School Education 2023
- **Phased Implementation:** Following NCF recommendations, the curriculum introduces CT first as a basis for learning AI later in higher classes

5. Time Allocation

- **Annual Hours:** A total of 50 hours annually is suggested for the Preparatory Stage (Classes 3–5)
- **Balanced Integration:** To avoid overburdening students, this time is not added as an extra subject but is integrated into existing Mathematics and "The World Around Us" (TWAU) periods

6. Approach / Pedagogy

The pedagogical approach for Grade 4 is designed to be playful and experiential:

- **Activity-Based:** Learning is driven by fun math games, puzzles, and hands-on exercises using specialized worksheets
- **Problem-Solving Focus:** Teachers guide students to break larger problems into smaller parts and interpret visual representations like charts and diagrams
- **Collaborative Learning:** The curriculum emphasizes peer discussions and group tasks to solve problems collectively

7. Assessment

Assessment for Grade 4 shifts from rote memorization to continuous and competency-based methods:

- **Interactive Tools:** Methods include written tests with CT puzzles, interactive group activities and the use of a Teacher Observation Journal to track progress
- **Qualitative Focus:** The goal is to assess a student's ability to apply knowledge and think creatively

How to Use This Book?

This book is designed as a companion to the Mathematics textbook and is intended to be used alongside regular classroom teaching. Since it follows the same chapter sequence, the Mathematics teacher can seamlessly integrate it into daily instruction. As concepts are introduced in class, the corresponding questions from this book can be used to deepen understanding and encourage application.

Before beginning a chapter, the teacher is encouraged to go through the content of this book, identify the underlying concepts required for each question, and plan how to align them with classroom teaching. As these concepts are taught, the teacher can introduce the related thinking questions to students.

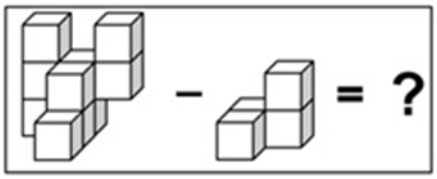
It is important to note that the questions in this book are thinking-based and designed to promote analysis, reasoning, and problem-solving. Teachers should adopt a facilitative approach, guiding students through prompts and discussions rather than directly providing solutions. Students should be given time to think and attempt independently, followed by classroom discussions where different approaches are shared and explored.

Some chapters also include activities that build intuition and engagement. These should be conducted before attempting the questions, as they help students approach the problems with better understanding.

Teachers should approach this book with the mindset that the process of thinking is more important than arriving at the correct answer. Creating a safe and encouraging environment where students feel comfortable making mistakes, exploring multiple strategies, and expressing their reasoning is essential. The goal is to nurture confident, independent thinkers rather than focus solely on correctness.

Chapter 1: Shapes Around Us

1. **What will come in place of "?"**
   Note: *You cannot rotate the images*



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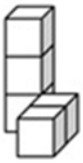
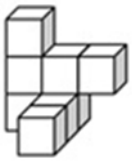
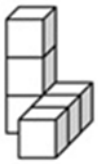
b) 
c) 
d) 

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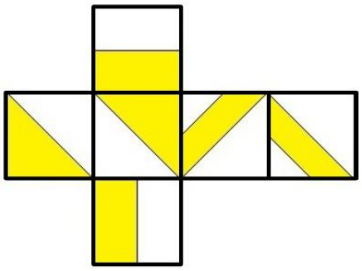
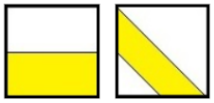
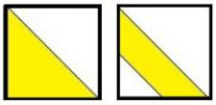
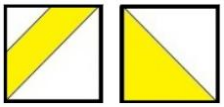
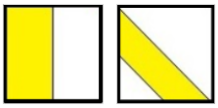
2. **The figure below forms a cube when folded. Which of the following options represents a pair of opposite faces of the cube?**
   Note: *You cannot rotate the question or option images*



a) 
b) 
c) 
d) 

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3. **From a rectangular piece of paper, a shape having which of the following number of angles CANNOT be formed by making only a SINGLE STRAIGHT CUT in any direction?**

   a) 3 angles b) 4 angles c) 5 angles d) 6 angles

---

4. **Count the number of TRIANGLES in the image given below.**

   a) 4 b) 5 c) 3 d) 2

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5. **Find the ODD one out.**

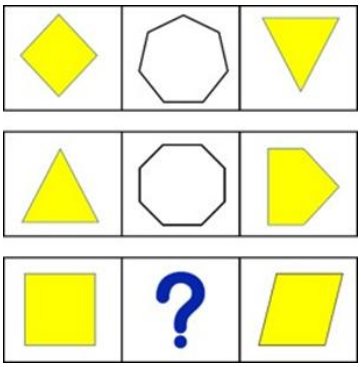
a) 

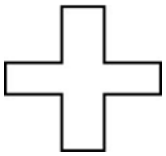
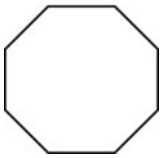
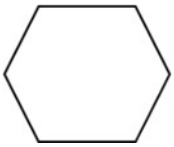
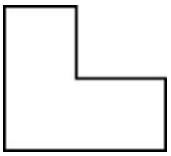
b) 

c) 

d) 

6. If each of the given terms follows the same theme, what will come in place of "?"



a)  b)  c)  d) 

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7. Each face of a triangular prism is coloured with a colour in such a way that no two adjacent faces have the same colour. What is the MINIMUM number of colours required to do this?

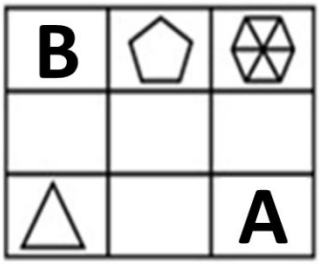
Note: *Two faces are said to be adjacent if they share a common edge*

a) 2 b) 3 c) 4 d) 5

---

8. Which of these shapes will come in place of A and B, such that no two shapes having the same number of sides, pattern, or colour appear in the same row or column?

Note: *Not all blocks will necessarily have a shape present in them*



a) A =  B = 

b) A =  B = 

c) A =  B = 

d) A =  B = 

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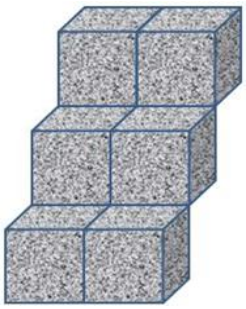
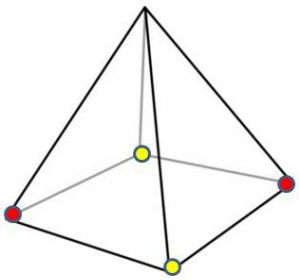
9. Six concrete blocks of cubical shape are used for building the stairs as shown below. How many faces of these blocks are not visible?



a) 12 b) 15 c) 21 d) 24

10. How many edges of the pyramid shown below have a yellow dot at one of their corners but do not have a red dot on the other corner?

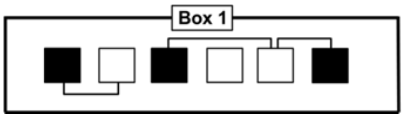


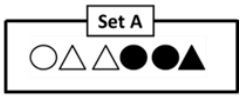
a) 1 b) 2 c) 3 d) 4

The Thinking Spot

All the shapes of Set A must be placed into the squares present in Box 1, such that
- **Each square has EXACTLY ONE shape**
- **The shape and the square CANNOT be of the same colour**
- **Two squares connected by a line CANNOT have the same shape inside them**

Which option shows the shapes which are NOT next to each other in the final arrangement?

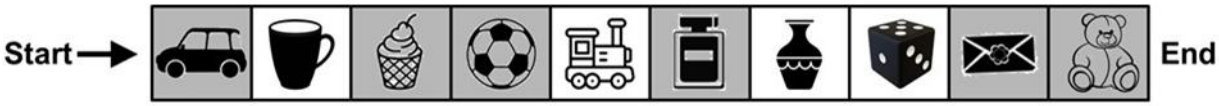




(a)  (b)  (c)  (d) 

Chapter 2: Hide and Seek

1. **Sam travels from Start to End by visiting every block. He collects an item from every block except from the block which comes immediately after a GREY BLOCK.**
   What is the TOTAL NUMBER of items he will collect?



a) 4 b) 5 c) 6 d) 7

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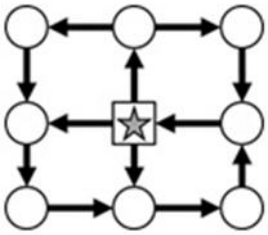
2. **The star must follow the arrows and return back to the square. How many different paths can it take?**

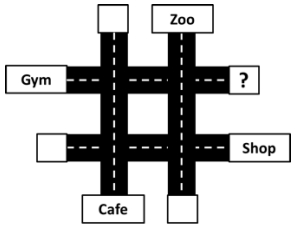


a) 4 b) 5 c) 2 d) 3

---

3. **A, B, C, and D each go to one of the following places: the Zoo, the Shop, the Cafe, and the Gym.**
   - **Each person visits a DIFFERENT location and starts from a DIFFERENT white square**
   - **B reaches the Gym in exactly 1 turn**
   - **A reaches the Cafe in exactly 2 turns**
   - **D did not take any turns to reach his destination**

   Who among them started from the square having the question mark?



a) A b) B c) C d) D

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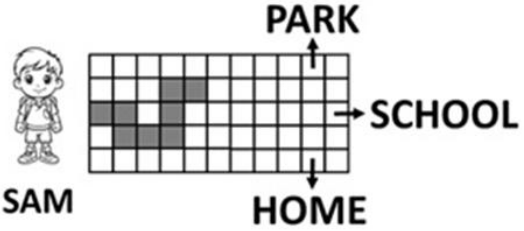
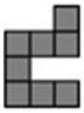
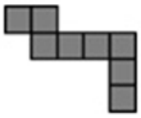
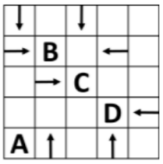
4. **Sam wants to reach HOME by walking along the GREY STRIP. Identify the missing part of the strip.**
   Note: *You are not allowed to rotate any of the option images*



a)  b)  c)  d) 

5. In the grid given below, which letter has the MOST number of arrows pointing towards it?



a) A b) B c) C d) D

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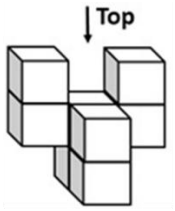
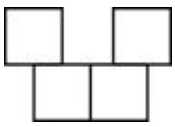
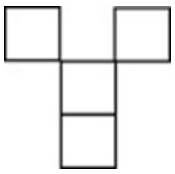
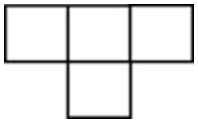
6. Which of the following options is the Top view of the question image?
Note: *You cannot rotate the question or option images*

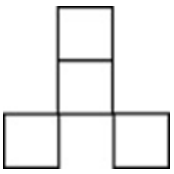


Question Image

a) 

b) 

c) 

d) 

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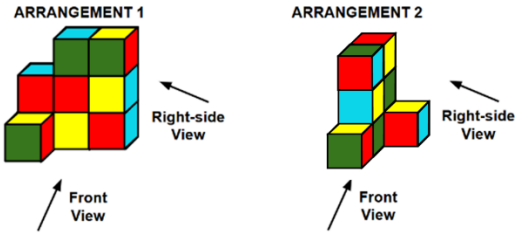
7. Which of the views given in the options shows the highest number of different colours?



a) Front View – ARRANGEMENT 1
b) Right-side View – ARRANGEMENT 1
c) Front View – ARRANGEMENT 2
d) Right-side View – ARRANGEMENT 2

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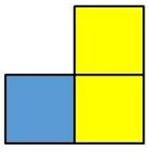
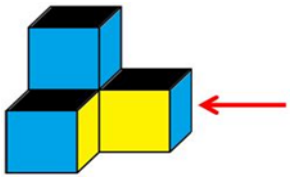
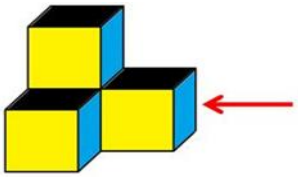
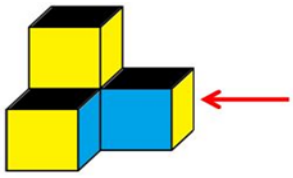
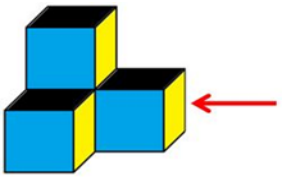
8. Which of the following options will look like Figure X when viewed along the direction of the arrow? Note: *You cannot rotate the question or option images*



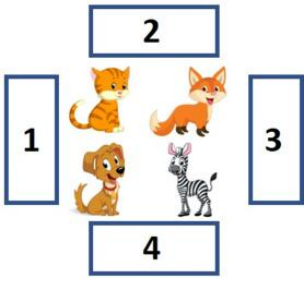
a) 

b) 

c) 

d) 

9. If a person is standing on block number 3, facing the animals, what will be the position of the cat with respect to the fox from his point of view?

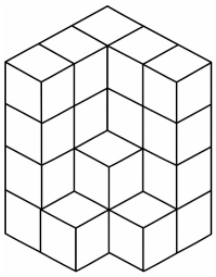


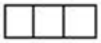
a) In front b) Behind c) Left d) Right

---

10. Which of the following figures is the top view of the solid?

Note: *You cannot rotate the question or option images*



a)  b)  c)  d) 

The Thinking Spot

Ten coins are distributed among four people P, Q, R, and S such that one of them gets one coin, another gets two coins, the third gets three coins, and the fourth gets four coins. It is known that Q gets more coins than P; and S gets fewer coins than R.

If R gets at least two more coins than S, then which one of the following is necessarily true?

(a) Q gets at least two more coins than S
(b) Q and R together get seven coins every time
(c) P gets more coins than S
(d) P and Q together get at least five coins

Chapter 3: Patterns Around Us

Activity Time

Odd and Even Numbers

Activity: Coin Flip Magic

You have a grid and double-coloured coins with black and white sides. Ask someone to randomly arrange the coins, white side up or black side up, in a 4×4 grid pattern. This will ensure that you are not familiar with the pattern. You will add one more row and one more column, creating a 5×5 grid pattern with the following details in mind. While adding the extra row and column, ensure each row and column has an even number of black sides up (zero is also even). Close your eyes and have someone flip any one coin on the grid pattern. When you open your eyes, you can figure out which coin was flipped. Let us see how?

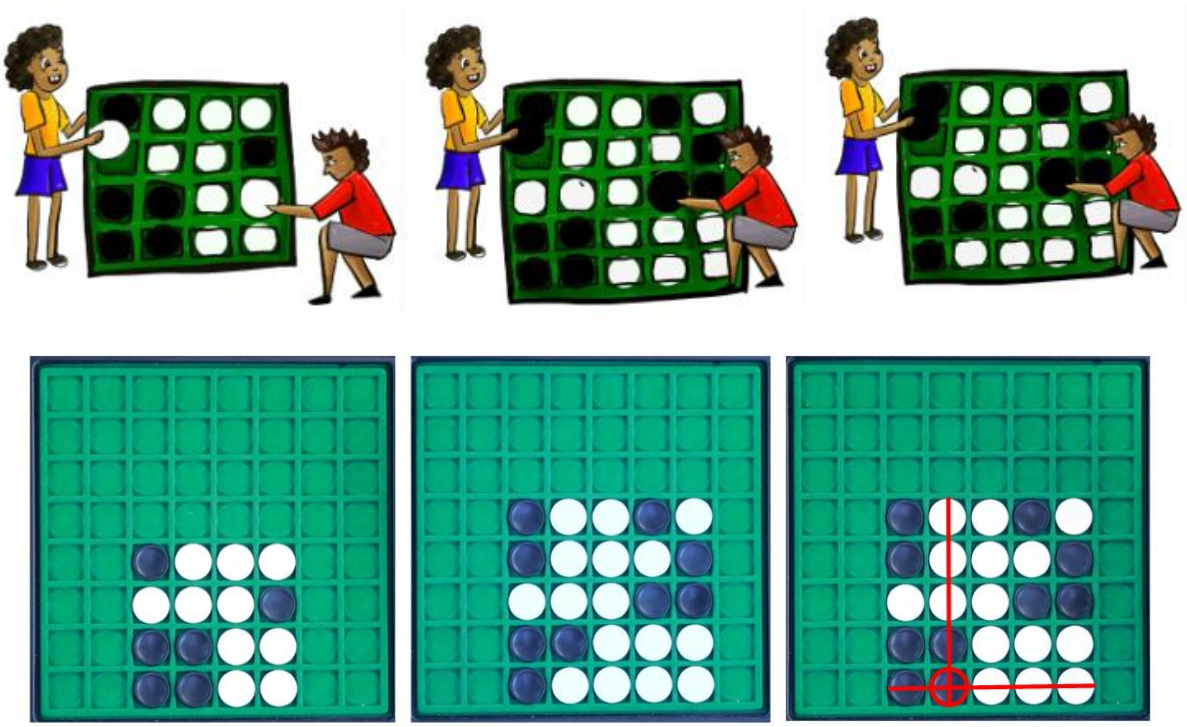


Figure: Activity Setup and Trick

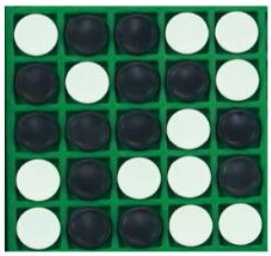
1. **When we flipped the black coin in the 5th row and 2nd column, what changes in the given row and column?**

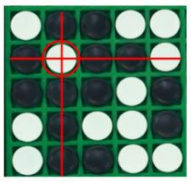
   a) The number of white coins increases, and it becomes odd
   b) The number of black coins decreases, and it becomes odd
   c) The number of black coins increases, and it becomes odd
   d) The number of white coins decreases, and it becomes odd

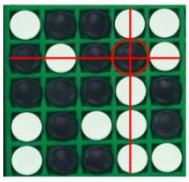
   By observing rows and columns that have an odd number of black coins, we can figure out which coin was flipped in the activity.

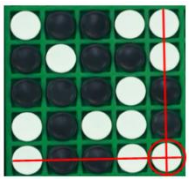
Explorations

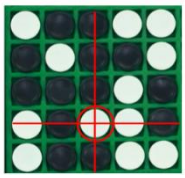
1. **Based on what you saw above, can you identify which coin was flipped in the given grid pattern?**



a) 

b) 

c) 

d) 

---

2. **For the given 3 x 3 grid pattern, which would be the corresponding 4 x 4 grid pattern that will help to detect which coin was flipped?**

a) 

b) 

c) 

d) 

---

3. **Instead of a 4×4 grid pattern, if we started with a 6×6 grid pattern, how many coins would be needed for the extra row and column?**

a) 13 b) 14 c) 15 d) 16

Questions

1. **Given below are 8 squares, to be filled with unique numbers from 1 to 8, and some numbers are already filled as shown below.**
   If the result of all the four operations is always a single-digit ODD NUMBER, then which of the following can NEVER be the result of any operation?

   3 + ☐ =
   8 − ☐ =
   2 + ☐ =
   7 − ☐ =

   a) 1 b) 3 c) 5 d) 7

---

2. **XY is a two-digit odd number. The sum of X and Y is a single-digit odd number. At maximum, how many different possible values can X have?**

   a) 2 b) 3 c) 4 d) More than 4

---

3. **Six consecutive even numbers are written on the faces of a single dice. If the smallest number is 8, then what will be the largest number?**

   a) 18 b) 28 c) 16 d) 20

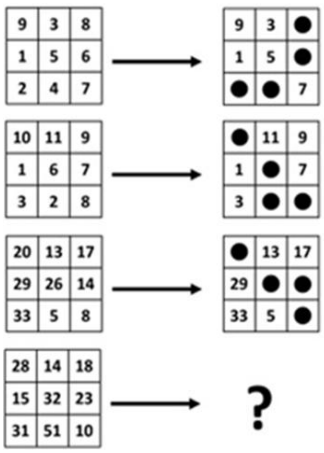
---

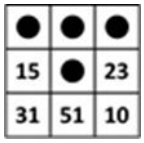
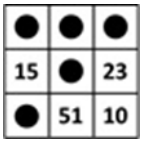
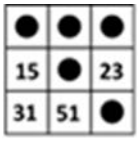
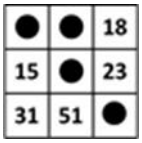
4. **What will come in place of "?" in the given series?**

   a)  b)  c)  d) 

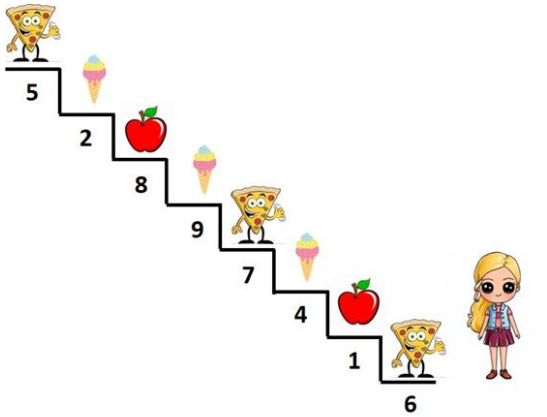
---

5. **What will come in place of "?"**



   a)  b)  c)  d) 

6. **Diya wants to pick only the items placed on the steps marked with even numbers. Which of the following options shows the food items she would collect?**



a) 2 Pizzas, 2 Ice-creams, and 1 Apple
b) 1 Pizza, 1 Ice-cream, and 2 Apples
c) 1 Pizza, 2 Ice-creams, and 1 Apple
d) 2 Pizzas, 1 Ice-cream, and 1 Apple

---

7. **Mani has some sweets with him. He wants to divide them between him and his friend Swami equally. He tries many times but is not able to divide the sweets equally. What could be the reason?**
Note: *A full sweet cannot be split into parts*

a) The number of sweets that Mani has is even
b) The number of sweets that Mani has is odd
c) The number of sweets that Mani has is 46
d) None of these

---

8. **Statement: The sum of two natural numbers is 39.**
Which of the given options can be understood from the given statement?

a) One of the two natural numbers is odd
b) Both the natural numbers are odd
c) One of the two natural numbers is even
d) Both a and c

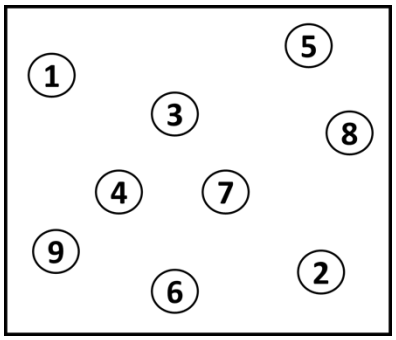
---

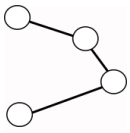
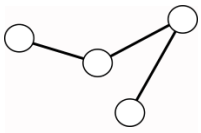
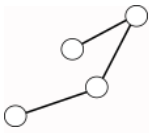
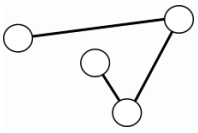
9. **There are only 4 people, A, B, C, and D, standing in a queue.**
1. A is not standing at an even-numbered position from the front
2. D is standing immediately ahead of B
If B is not standing last, then who is standing last?

a) A
b) B
c) C
d) D

---

10. **If any 4 odd numbers in the figure shown below are connected in the ascending order by using straight lines, then which of the following figures CANNOT be made?**



a) 
b) 
c) 
d) 

11. Question: Is M = N?
Statement 1: N is an even number.
Statement 2: M is an odd number.
To answer the given question, which of the given statements is/are sufficient?

a) Only 1
b) Only 2
c) Both 1 and 2 together
d) Question cannot be answered even if both statements are used

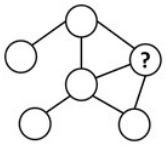
---

The Thinking Spot

Given below is an arrangement of 6 circles, each filled with a different colour: Yellow, Black, Purple, Red, Blue, and Green.

- **The Yellow circle is connected to all circles except the Black circle**
- **The Black circle is only connected to the Purple circle**
- **The Yellow circle is the only circle that is connected to the Red circle**
- **The Blue circle is directly connected to the Yellow circle and to only one other circle**

What is the colour of the circle marked with "?"



(a) Red (b) Purple (c) Green (d) Blue

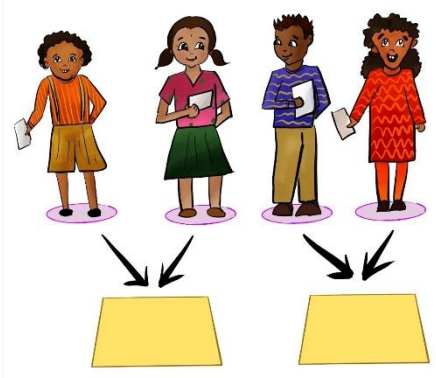
Chapter 4: Thousands Around Us

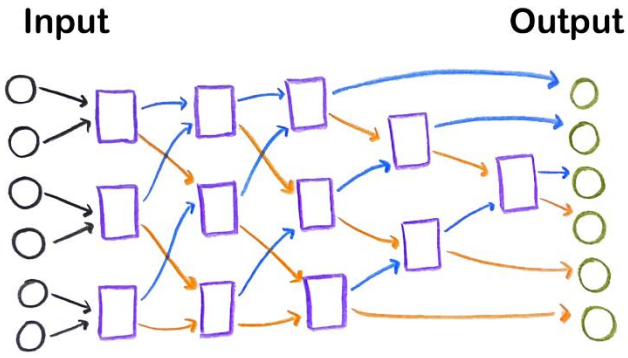
Activity Time

Activity: Sorting Network

Ever wondered how computers sort random things into order so quickly? Books in library, dictionaries, list of students in the classroom, are arranged in an order for convenience. Without sorting, finding information would be much more difficult. This activity uses the network template to be drawn on a floor using chalk (or use flex print) and demonstrates how the numbers can be arranged in an order.

- 6 students in the class will take A4 sheet with numbers 1 to 6 on it.
- Stand on the input circles in any order of the numbers.
- The rectangle box is a comparison box.
- The one with the smaller number will follow the blue and the other bigger number will follow the orange.
- At the end of the network, you will see that the numbers are in sorted order.



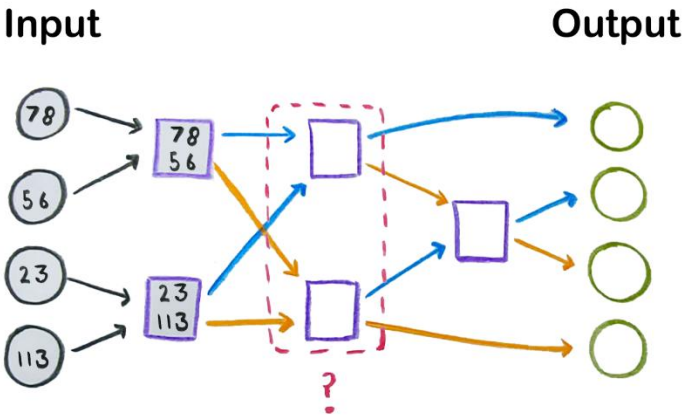


Explorations

Explore the activity with different orders of the numbers in the starting position. Are numbers getting sorted at the end for every input sequence? Instead of numbers 1 to 6, take 2-digit and 3-digit numbers. For example: {23, 56, 78, 113, 378, 667}.

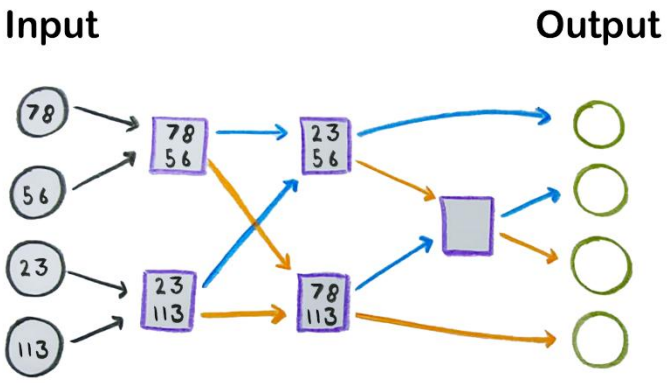
Similarly, the same activity can also be done for sorting students with their names in an alphabetical order. Students will ask each other's name in the comparison box. The one with prior in order will go to left, the other one to the right. See if the names are in order at the end or not at the end. Try the same activity by comparing their height.

Consider the network to sort any 4 input numbers. The input numbers are {78, 56, 23, 113}. From the input circle position, move the numbers forward to the rectangle box and compare them. The smaller number will follow the blue line and bigger will follow the orange line.

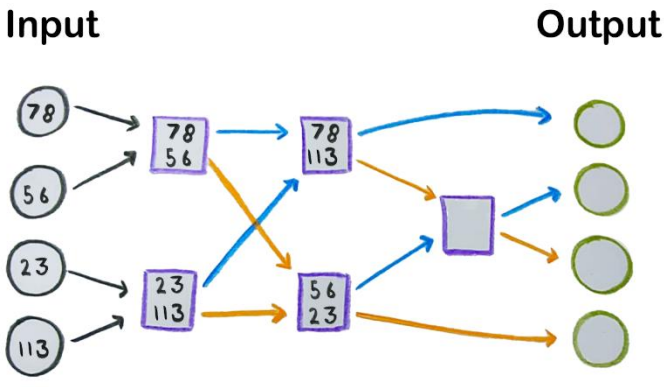


1. What will be correct positions of input numbers after the first level of comparison?

a)

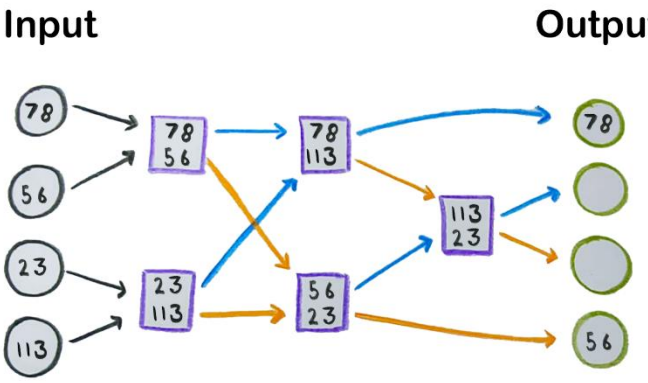


b)

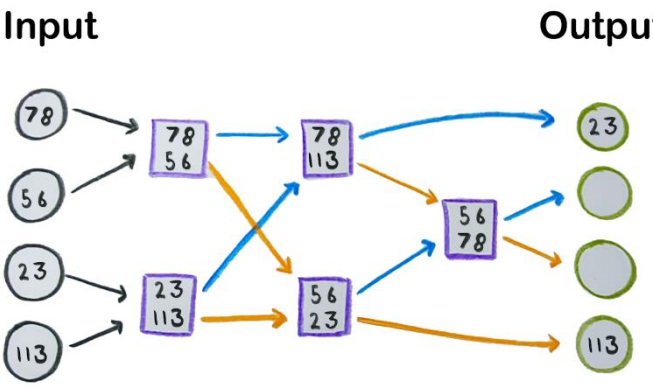


2. What will be correct positions of input numbers after the second level of comparison?

a)



b)



Now consider the reversal in the rule. Instead of smaller follows the blue, now bigger number from the comparison box will follow the blue arrow. The bigger number will follow the orange arrow.

---

3. What will be the output order of the numbers at the end, if comparison box rule reversed?

a) No difference, output will be same

b) Output numbers will be in reverse order - descending

c) The output depends on input number order

d) Can't say anything about the order

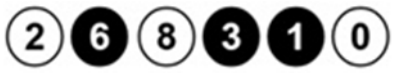
Questions

1. **15A9 and 1A79 are two 4-digit numbers where A represents one of their digits. Which of these conditions about these 4-digit numbers CAN be true, when A is less than 6?**

   a) 15A9 > 1A79 b) 15A9 < 1A79 c) 15A9 = 1A79 d) Either A or B

---

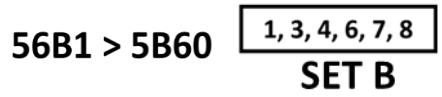
2. **What is the smallest possible 4-digit number formed using 4 different circles from the grid given below, such that the number of white circles in the number formed is less than that of the black circles?**



   a) 1360 b) 1023 c) 1063 d) 1036

---

3. **In the given expression, 56B1 and 5B60 represent two 4-digit numbers, where "B" represents one of the digits. How many DIFFERENT VALUES can "B" take from SET B to satisfy the given condition?**



   a) 5 b) 4 c) 3 d) 2

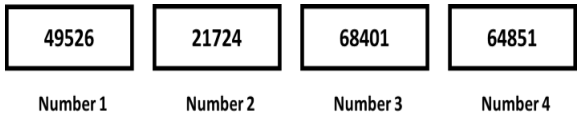
---

4. **Using the digits 4, 8, 7, 6, 1, 3, and 5, form the largest and the smallest 4-digit numbers such that no digit repeats within a number. Which digit will be common in both numbers?**

   a) 3 b) 4 c) 5 d) 6

---

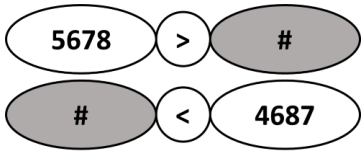
5. **If you remove the digit that is common to all four numbers shown below, which number will become the largest?**
   Note: *You cannot re-arrange the digits to form a number*



   a) Number 1 b) Number 2 c) Number 3 d) Number 4

---

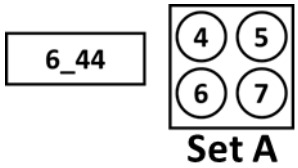
6. **Which of the following numbers can come in place of "#" in the given expression?**



   a) 5321 b) 6489 c) 4897 d) 4678

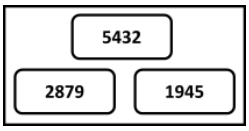
---

7. **How many numbers from Set A can be placed in the blank, to form a number greater than 6632?**



   a) 1 b) 2 c) 3 d) 4

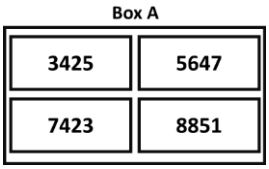
8. If you add ALL the digits in the HUNDREDS place of the numbers given below, what will be the digit in the TENS place of the resulting number?



a) 1 b) 2 c) 3 d) 0

---

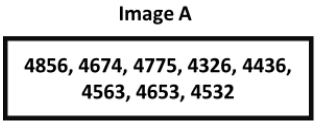
9. How many numbers in Box A, after swapping their tens and thousands digits, will be less than 3000?

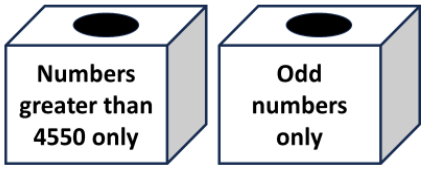


a) 4 b) 3 c) 2 d) 1

---

10. How many numbers from "Image A" can be placed in BOTH the boxes given below?

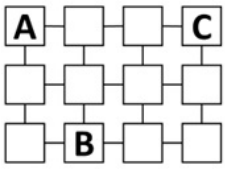




a) 2 b) 3 c) 4 d) 5

The Thinking Spot

A, B, and C want to meet. They cannot meet in the boxes they are currently standing in or in any boxes immediately connected to them. In how many boxes can they meet?



(a) 1 (b) 2 (c) 3 (d) 4

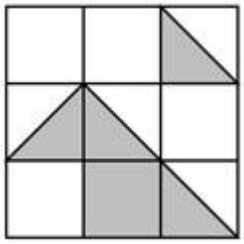
Chapter 5: Sharing and Measuring

1. How many bottles in the image below are filled to less than half their capacity?

a) 2 b) 3 c) 4 d) 5

---

2. What fraction of the given image is shaded grey?



a) 5/18 b) 5/9 c) 6/18 d) 7/9

---

3. Diksha bought some pens for exactly Rs. 80. If each pen costs the same, which of the following CANNOT be the price of a pen?

a) Rs. 4 b) Rs. 5 c) Rs. 6 d) Rs. 8

---

4. What will come in place of "?" in the given series?

a)  b)  c)  d) 

---

5. Which of the following options shows the correct number of minutes in (1/4 + 1/2) hour?

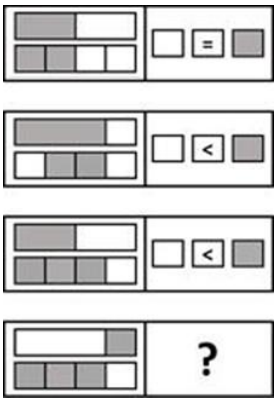
a) 5 × 8 minutes b) 60 - 10 minutes c) 21 + 24 minutes d) 3 × 10 minutes

---

6. Find the ODD one out.

a)  b)  c)  d) 

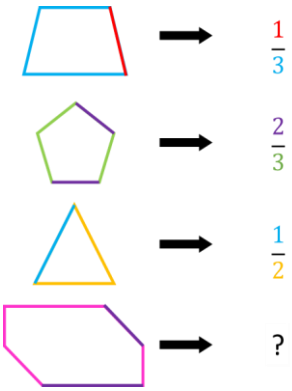
7. If each of the given terms follows the same theme, what will come in place of "?"



a) □ = ■ b) □ > ■ c) □ < ■ d) None of these

---

8. What will come in place of "?"



a) $\frac{2}{4}$ b) $\frac{2}{5}$ c) $\frac{2}{4}$ d) $\frac{2}{5}$

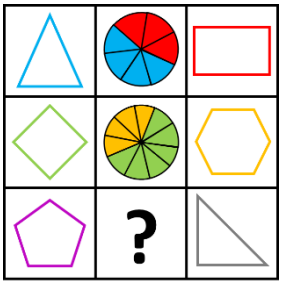
---

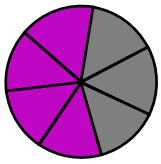
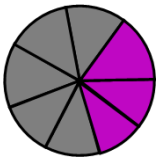
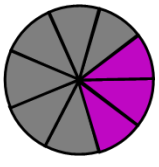
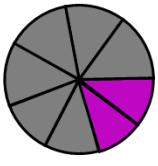
9. A piece of paper is shaped like a rhombus, but not a square. At most, how many times can it be folded so that each fold divides it into two identical halves?

a) 0 b) 1 c) 2 d) 3

---

10. What will come in place of "?"



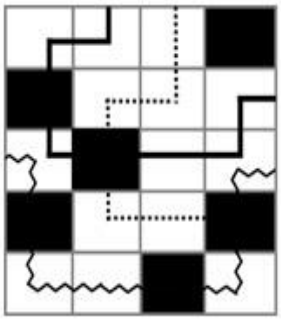
a)  b)  c)  d) 

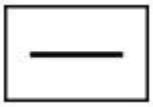
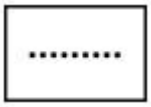
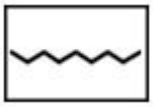
The Thinking Spot

At a party, there are 10 people. Each person at the party knows at least one other person there. Which of the following statements can never be true?
Note: *If A knows B, then it does not necessarily mean that B knows A*
(a) Every person knows only one other person
(b) Every person knows all the other people
(c) Every person knows a different number of people
(d) Every person knows exactly two other people

Chapter 6: Measuring Length

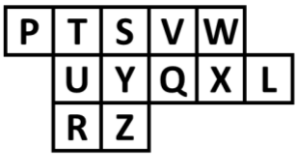
1. **In the image given below, there are 20 small squares, each of the same size. Which line has the longest part hidden behind the black squares?**



a)  b)  c)  d) Both a and b

---

2. **If Block __ is removed from the given Figure, the perimeter of the Figure will be decreased. Fill in the blank appropriately.**

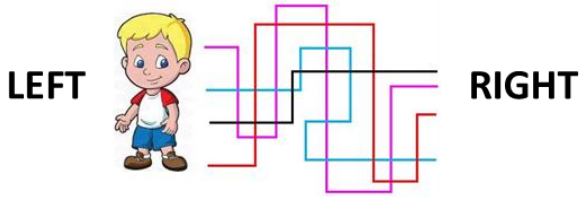


Figure

a) Q b) S c) R d) P

---

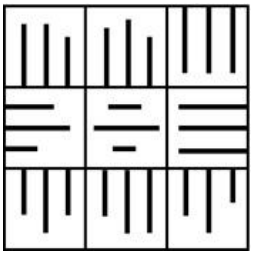
3. **Every coloured line represents a path and through this path the boy on the LEFT can reach the RIGHT side. If he chooses the shortest path, how many junctions will he come across?**
Note: *A junction is the point where any two coloured lines cross each other*



a) 6 b) 7 c) 8 d) 9

---

4. **Count the number of blocks that have ALL THREE lines of different lengths.**



a) 3 b) 4 c) 5 d) 6

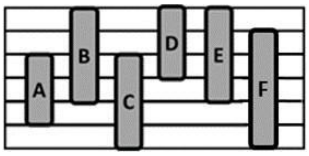
5. **Given below are lines of different lengths. They are to be categorized into three groups based on their lengths:**
   - **Group 1 for lines taller than line E**
   - **Group 2 for lines shorter than line D**
   - **Group 3 for lines taller than line B**

   Which line will belong to all three groups?

a) A b) F c) C d) D

---

6. **In the set of bars given below, which bar does NOT have any other bar of the SAME height?**



a) Bar E b) Bar D c) Bar C d) Bar F

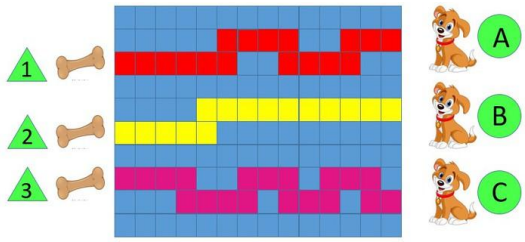
---

7. **Which option will come in place of "?"**

a) % + / > b) / % + > c) % > + / d) % + > /

---

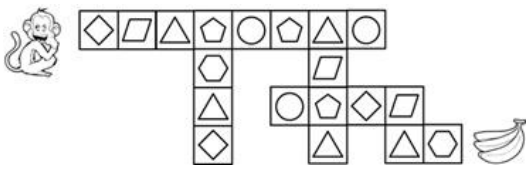
8. **Each of the dogs A, B, and C use the red, yellow, and pink paths (in the same order), to go to their bone. If each dog takes 10 minutes to reach the bone, which dog runs the fastest?**

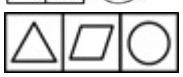


a) Dog A b) Dog B
c) Dog C d) Cannot be determined

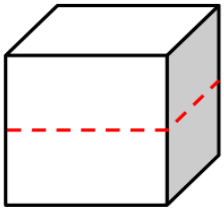
---

9. **If the monkey follows the shortest path to reach the banana, which of the following options represents the tiles that will appear immediately one after another on its path? The tiles must appear in the same SEQUENCE as they appear in the original path.**
   Note: *The monkey can move only horizontally or vertically along the tiles, not diagonally*



a)  b)  c)  d) 

10. The cube shown below is cut horizontally along the red dotted line into two EQUAL halves. In each resulting shape, how many faces will still have the same perimeter as a face of the original cube?



a) 1 b) 2 c) 4 d) 6

The Thinking Spot

E-1, E-2, and E-3 are three engineering students writing their assignments at night. Each of them starts at a different time and completes the assignment at a different time. The digit in their name cannot match the order in which they start or complete the assignment. (For example, E-1 cannot be the first to start or the first to complete the assignment because his name contains the digit 1.)
The last student to start is the first to complete the assignment.
Who is the first student to start writing the assignment?

(a) E-1 (b) E-2

(c) E-3 (d) Cannot be determined

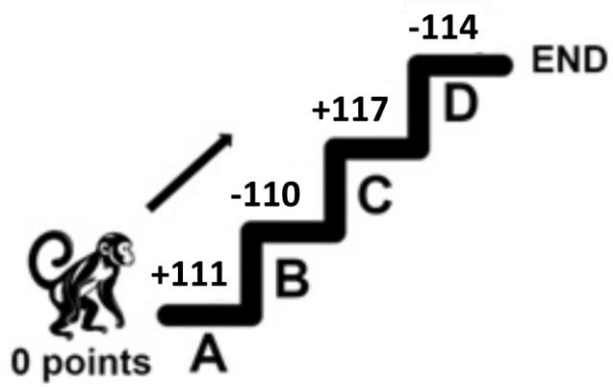
Chapter 7: The Cleanest Village

1. **A and B have Rs. 200 each. Each of them visited a shop and bought an item. A spent Rs. 110 more than B. What could be the highest possible amount spent by B?**

   a) Rs. 200 b) Rs. 180 c) Rs. 100 d) Rs. 90

---

2. **The monkey starts at 0 points and needs to climb the staircase to the END. On each step, it either gains or loses points. Which ONE step must the monkey SKIP to earn exactly 114 points in total?**



   a) A b) B c) C d) D

---

3. **Boxes A, B, and C each have 500 chocolates. Diya removed 222 chocolates from box B and 222 chocolates from box C. Nihal added 111 chocolates to box B, and Jay removed 111 chocolates from box A. Which boxes have an equal number of chocolates at the end?**

   a) A and B
   b) A and C
   c) B and C
   d) No two boxes have the same number of chocolates

---

4. **A, B, and C represent 3 different single-digit numbers in the grid given below. If each of these options represents a 3-digit number formed using A, B, and C, find the option having the highest value.**

4	+	A	=	5
7	-	B	=	C
C	+	5	=	8

   a) BAC b) BCA c) CBA d) ABC

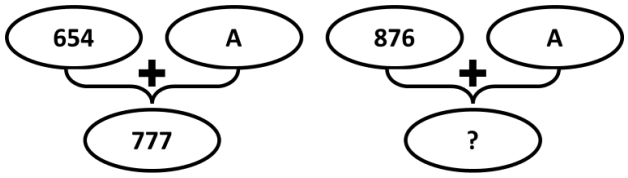
---

5. **Which of the following is the LEAST possible number that can replace the "?" such that the sum of the numbers in Row 2 is GREATER than the sum of the numbers in Row 1?**

Row 1	227	229	222
Row 2	?	228	227

   a) 221 b) 222 c) 223 d) 224

6. What will come in place of "?"



a) 970 b) 989 c) 999 d) 990

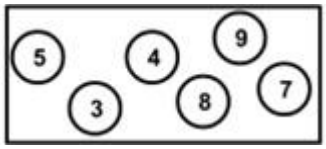
---

7. In a container, there are 20 blue balls and 13 red balls.
• On pressing Red button, 2 blue balls are removed
• On pressing Blue button, 2 red balls are removed
• On pressing Green button, 1 blue ball and 1 red ball is removed
If Sam presses the buttons in the following order, then which option shows the balls remaining in the container?
Red Button → Green Button → Blue Button → Green Button

a) 9 blue balls and 16 red balls b) 16 blue balls and 9 red balls
c) 18 blue balls and 8 red balls d) 16 blue balls and 10 red balls

---

8. Which option represents the difference between the smallest and the largest possible 2-digit numbers (with both digits different) which you can form using the digits given below?



a) 66 b) 64 c) 55 d) 98

---

9. If @ means addition (+) and # means subtraction (-), which of the following options will give the largest number?

a) 434 @ 125 # 236 b) 443 @ 121 # 234 c) 457 # 117 @ 233 d) 441 @ 111 # 50

---

10. What will come in place of "?"

2613 ⟶ 8_7_4

3263 ⟶ 5_8_9

1817 ⟶ 9_9_8

4507 ⟶ ?

a) 5_0_7 b) 9_0_7 c) 9_7_7 d) 9_5_7

The Thinking Spot

If you colour all the shapes that are immediately next to a triangle on both sides, which shape will be coloured the maximum number of times?

(a) 

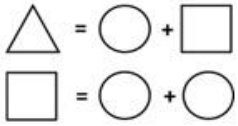
(b) 

(c) 

(d) 

Chapter 8: Weigh It, Pour It

1. If the shapes given below represent weighing stones of different weights, which of the following options is definitely true?



a) 

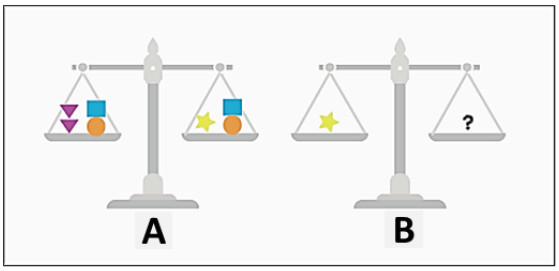
b) 

c) 

d) 

---

2. In Figure A, the balance is equal and each shape has a different weight. Using this information, determine which option, when placed in place of the "?", will balance the scale in Figure B.



a) 

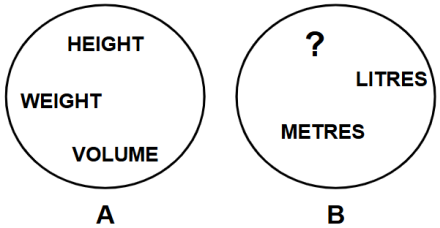
b) 

c) 

d) 

---

3. Which word should replace the question mark in circle B, such that every word in circle A has a word closely related to it in circle B?



a) MINUTES b) STONES c) KILOGRAMS d) BALANCE

---

4. A water cooler has 35 litres of water. There are two bags of empty bottles. One contains 5 bottles of 3 litre capacity each and the other contains 8 bottles of 5 litre capacity each. You have to empty the water cooler by filling in at least one bottle from each bag. When a bottle is picked, it must be filled completely. What is the MAXIMUM number of bottles that can be left empty, finally?

a) 6 b) 5 c) 4 d) 3

5. **You have buckets of capacities 5 litres, 3 litres, and 1 litre. You may use any bucket more than once, but each type must be used at least once. What is the minimum number of buckets required to hold EXACTLY 20 litres of water?**
Note: *Each bucket must be filled completely*

a) 4
b) 8
c) 7
d) 6

---

6. **A flight allows a passenger to carry a maximum of 20 kg of luggage. Johnny already has a bag with him. He wants to find out the maximum additional weight he can carry (other than the bag), without crossing the limit. How can Johnny calculate this?**
a) By adding the weight of bag to 20 kg
b) By subtracting the weight of bag from 20 kg
c) By multiplying the weight of bag to 20 kg
d) None of these

---

7. **Rheya weighs 18 kg less than her father. Her father weighs 10 kg more than her mother. If her mother's weight is 65 kg, find Rheya's weight.**
a) 57 kg
b) 59 kg
c) 47 kg
d) 49 kg

---

8. **Ravi's mother asked him to purchase 3 kg of mangoes and 2 kg of papaya. However, Ravi ended up buying 2 kg of mangoes and 3 kg of strawberry instead. How much extra money did he spend on fruits compared to his mother's list?**

Fruits	Price(kg)
Apples	Rs. 50
Mangoes	Rs. 100
Strawberry	Rs. 150
Papaya	Rs. 170

a) Rs. 10
b) Rs. 20
c) Rs. 40
d) Rs. 50

---

9. **A is taller than B and heavier than C. C is taller than D and heavier than E. If a heavier person is always taller, then who is the tallest?**
a) A
b) B
c) C
d) Cannot be determined

---

10. **Twenty bottles are arranged from left to right in a single row. The position of a bottle from the left end of the row determines the quantity of water it contains. For example, the first bottle from the left has 1 L of water, the second bottle has 2 L, and so on. If the third bottle from the left is interchanged with the sixth bottle from the right, how many litres of water will finally be present in the first six bottles from the left?**
a) 24 L
b) 27 L
c) 31 L
d) 33 L

The Thinking Spot

For a six-faced dice with the numbers 1 to 6 written on its faces (one number on each face), which of the following statements can be definitely implied from the statement given below?
Statement: All numbers opposite to 2 are less than it.

(a) 3 is written adjacent to 2
(b) 3 is written opposite to 2
(c) 4 is written opposite to 5
(d) None of these

Chapter 9: Equal Groups

1. **When 22 is added to a number, the resultant number is three times the number itself. What was the number?**

   a) 11 b) 22 c) 33 d) 44

---

2. **On a dice, different numbers are written on each face from 1 to 6 such that:**
   - **6 is adjacent to ALL the faces having odd numbers**
   - **2 is adjacent to ALL its multiples**

   How many DIFFERENT POSSIBLE numbers can be opposite to 1?

   a) 5 b) 2 c) 4 d) 3

---

3. **In a row of 50 boys, both Deepak and Mayank are positioned at multiples of 10 from the left end. Mayank's position is twice that of Deepak's position, and Deepak is not positioned at the 10th place from the left end. What will be Mayank's position from the right end?**

   a) 10th b) 40th c) 11th d) 41st

---

4. **A sequence of numbers is given: 13, 26, 52, 104, 208.**
   What would be the rule that is governing this sequence?

   a) Every term is 13 more than the previous term
   b) Every term is thrice the previous term
   c) Every term is two times the previous term
   d) Every term is 26 more than the previous term

---

5. **Radha has some five-rupee coins. Her friend Seeta asks how much money she has. What should Radha do to answer Seeta's question?**

   a) Multiply the number of five-rupee coins she has with 2
   b) Multiply the number of five-rupee coins she has with 5
   c) Multiply the number of five-rupee coins she has with 0.5
   d) Multiply the number of five-rupee coins she has with 50

---

6. **In the middle of a round pool lies a beautiful water lily. The water lily doubles in size every day. After exactly 20 days, the lily will cover the complete pool. After how many days will the water lily cover half of the pool?**

   a) 5 b) 10 c) 15 d) 19

---

7. **I am a vehicle. To carry a group of 60 students, 8 vehicles like me are needed. To carry a group of 55 students, 7 vehicles like me are needed. How many students can I carry at most?**

   a) 6 b) 7 c) 8 d) 9

---

8. **The number of sisters that Raj has is double the number of brothers he has. Raj does not have more than 5 brothers. At most, how many sisters will any sister of Raj have?**

   a) 6 b) 7 c) 8 d) 9

---

9. **If A = 6, Y is double of B, B is double of Z, and Z is double of A, which of the following expressions has the HIGHEST value?**

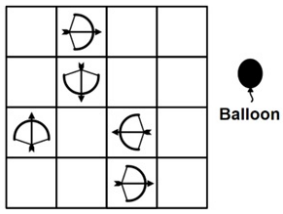
   a) $2 \times B - Z$ b) $3 \times Z + A$ c) $Y + Z - A$ d) $2 \times Y - B$

10. A square sheet has a side length of 10 cm. Among the options given below, how many equal-sized square sheets CANNOT be cut from this sheet such that no portion of the sheet remains?

a) 4 b) 9 c) 10 d) 16

The Thinking Spot

If arrows can only travel straight in the direction they are pointing, then in how many empty cells can you place the balloon such that NO arrow can shoot it?



(a) 2 (b) 3 (c) 4 (d) 5

Chapter 10: Elephants, Tigers, and Leopards

1. **There is a three-digit number. In this number, one odd digit occurs twice. The third digit is a sum of the digits occurring twice. What is the sum of all the digits?**

   a) 4 or 12 b) 12 or 20 c) 20 or 28 d) 28 or 36

---

2. **Chris bought a notebook for ₹120, a compass box for ₹20 less than the notebook, and a water bottle for ₹80 more than the compass box. What is the total cost of all the three items?**

   a) ₹380 b) ₹420 c) ₹400 d) ₹360

---

3. **B has some money which could be in denominations of ₹10, ₹20, or ₹50. If B has four notes and only two types (denominations) of currency notes, then which of the following CANNOT be true regarding the amount of money B has?**

   a) B has a total of 50 Rupees
   b) B has a total of 70 Rupees
   c) B has a total of 90 Rupees
   d) B has a total of 110 Rupees

---

4. **A, B, C, and D represent different digits in the 4-digit numbers given below. What will come in place of B and D?**

$$\begin{array}{r} 5B23 \\ -\ A69C \\ \hline 41D9 \end{array}$$

   a) B = 7 and D = 2
   b) B = 8 and D = 6
   c) B = 8 and D = 2
   d) B = 5 and D = 3

---

5. **Ram, Rohit, and Rohan are best friends, and each of them has some money. Ram has Rs. 10 more than Rohit, and Rohan has Rs. 10 less than Rohit. They decide to pool all their money and divide it equally. After the division, who gets more money than what he had before the division?**

   a) Ram
   b) Rohit
   c) Rohan
   d) Cannot be determined

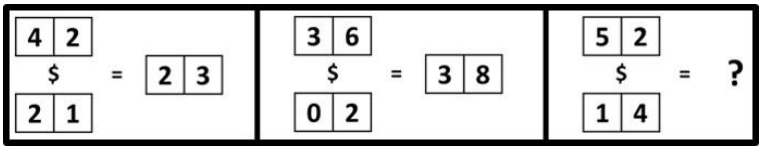
---

6. **When the digits of a 3-digit number are reversed, the difference between the new number and the original number comes out to be zero. What is the minimum possible sum of the digits of the original number?**

   a) 1 b) 2 c) 3 d) 4

---

7. **What will come in place of "?"**



   a) 6 6 b) 6 2 c) 4 2 d) 4 6

8. If all the rows and columns follow the same rule, then find the missing box in the given image.

4	12	8
?	9	2
7	3	10

a) 3 b) 3 c) 11 d) 11

---

9. A 4-digit number (which may or may not have repeating digits) is selected such that the sum of its digits is not less than 34. How many single-digit whole numbers will not appear in such numbers?

a) 2 b) 7 c) 8 d) 9

---

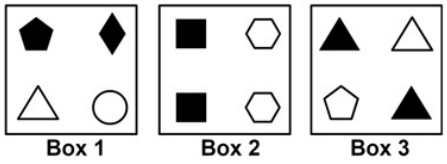
10. Each row follows a certain rule. Choose an option for the box with a question mark?

82	10	1
49	13	4
74	11	?

a) 4 b) 2 c) 8 d) 6

The Thinking Spot

Sam collects 2 objects of different colours from each box. If all 6 items which he collected from the 3 boxes are of different shapes, which shapes did he select from Box 1?



(a) 

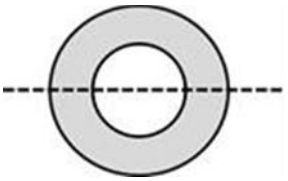
(b) 

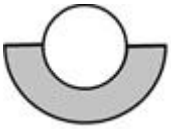
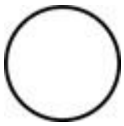
(c) 

(d) 

Chapter 11: Fun with Symmetry

1. **As shown below in the question image, a grey circular paper with a round hole in the middle (the white part) is folded along the dotted line. How will it look after folding?**

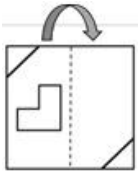
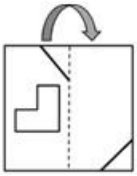
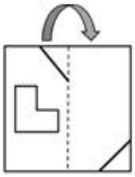
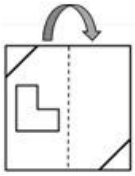


a) 
b) 
c) 
d) 

---

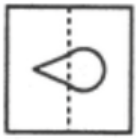
2. **Which transparent sheet from the given options, when folded in half as shown by the arrow, will result in Image X?**

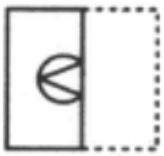
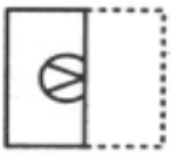
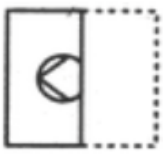
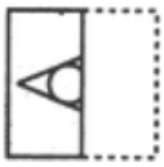

Image X

a) 
b) 
c) 
d) 

---

3. **The given paper X is a transparent sheet with the design shown. If paper X is folded along the dotted line, which of the following options represents the pattern that will appear on the folded paper?**


(X)

a) 
b) 
c) 
d) 

---

4. **Which of the following options DOES not exhibit BOTH vertical and horizontal symmetry together?**

a) The alphabet 'O' b) The alphabet 'E' c) The alphabet 'H' d) The alphabet 'I'

5. Which of the following options represents the mirror image of Image A when the mirror is placed along line XY?

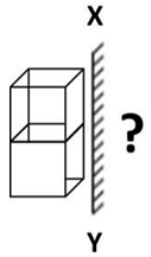
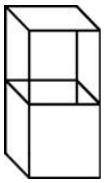
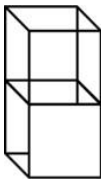
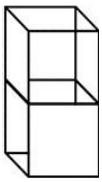
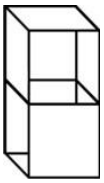


Image A

a)  b)  c)  d) 

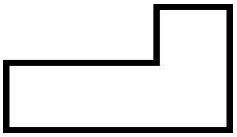
---

6. What will come in place of "?"

a)  b)  c)  d) 

---

7. Which type of symmetry(s) is/are present in the given figure?



a) Vertical Symmetry b) Horizontal Symmetry c) Both of these d) None of these

---

8. Some letters are written on the board: V, N, A, H, U, X, C, D, K.
What fraction of these letters have only vertical symmetry?

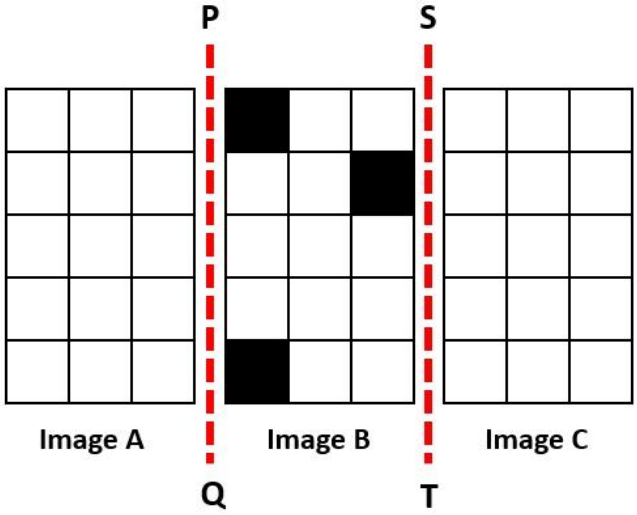
a) 2/3 b) 1/3 c) 1/2 d) 5/6

---

9. Which image will come in place of the question mark if the Question image is symmetrical?

a)  b)  c)  d) 

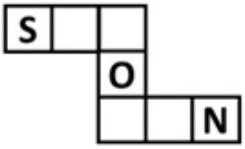
10. If Images A and C are mirror images of Image B when a mirror is placed along lines PQ and ST, as shown below, then Images A and C will be _____.



a) Different from each other
b) Same as each other
c) Same as Image B
d) None of these

The Thinking Spot

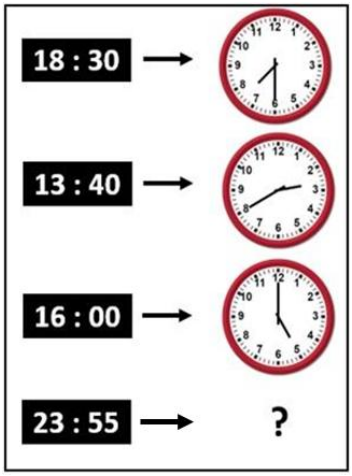
Use the letters N, W, and O to fill in the blanks below to form three meaningful 3-letter English words. If none of the words has repeating letters within itself, which letter will be COMMON to all three words?



(a) Only O
(b) Only N
(c) Both O and N
(d) Both W and O

Chapter 12: Ticking Clocks and Turning Calendar

1. What will come in place of "?"



a)  b)  c)  d) 

---

2. Ramaswami was studying for his examinations when the lights went off. It was around 1:00 a.m. He lit two uniform candles of equal length, but one was thicker than the other. The thick candle is supposed to last six hours, and the thin candle two hours less. When he finally went to sleep, the thick candle was twice as long as the thin candle. For how long did Ramaswami study in candlelight?

a) 2 hours b) 3 hours c) 2 hours 30 minutes d) 4 hours

---

3. A man has a job which requires him to work 8 straight days and rest on the ninth day. If he started work on a Monday, the 12th time he rests will be on what day of the week?

a) Sunday b) Wednesday c) Tuesday d) Friday

---

4. Paul is running in a playground. He takes 5 minutes to run one complete round of the playground each time. Also, after every two rounds, he takes a rest of 5 minutes and then starts running again. If he has just completed his 6th round at 4:45 PM, at what time did he start running?

a) 04:00 PM b) 04:05 PM c) 04:10 PM d) 03:55 PM

---

5. Alex takes 10 minutes to reach school, while Tim reaches 15 minutes after Alex. If Tim reaches at 5:00 PM, at what time did Alex leave for school?

a) 4:40 PM b) 4:45 PM c) 4:35 PM d) 4:30 PM

---

6. Raj went to Pune in February. He went on a date which is a SINGLE-DIGIT NUMBER i.e. a date less than 10. 1st February in that year was a Sunday. If Raj went to Pune on a Saturday, on which date did he go to Pune?

a) 5th February b) 7th February
c) 9th February d) 8th February

7. **You go to a fair and want to attend all four events A, B, C, and D. Each event lasts 30 minutes, and each event takes place twice at the times shown. You can attend only one event at a time and must attend exactly one session of each event. You must start your day with the earliest possible event, and Event A must be attended before Event C. Based on these conditions, which of the following schedules is possible?**

Event A Character Parade	 11:15 am	 12:00 pm
Event B Pie eating Contest	 10:30 am	 12:00 pm
Event C Dart and Balloon game	 10:00 am	 12:00 pm
Event D Fishing	 10:00 am	 11:30 am

a) D-B-A-C b) D-A-B-C c) B-D-A-C d) D-B-C-A

---

8. **A clock shows the correct time as 2:30 PM. After this, the minute hand gains 5 extra minutes every half hour. What will be the actual time when the clock shows 9:30 PM?**

a) 08:10 PM b) 08:20 PM c) 8:30 PM d) 08:40 PM

---

9. **Our cricket match is going to take place on the last day of the 4th month of the year. On which of the following dates will we have our match?**

a) 31st April b) 31st May c) 30th April d) 30th May

---

10. **A sequence of time periods is given: 2 PM to 4:40 PM, 3:20 AM to 6 AM, 11:30 AM to 2:10 PM, 7 PM to 9:40 PM. What would be the rule that is governing this sequence?**

a) The number of minutes in each of these time periods is 140
b) The number of minutes in each of these time periods is 160
c) The number of minutes in each of these time periods is different
d) None of these

---

11. **Each month of the year has at least 28 days. Which of the given options can be understood from the given statement?**

a) A year has at most 390 days b) A year has at least 336 days
c) Some years have 350 days d) Every month of the year has only 28 days

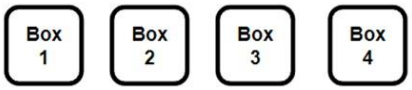
---

12. **The conditions below help us find when Jaanhavi was born.**
- Jaanhavi's birth month starts with A.
- Jaanhavi's birth month has 5 letters.
- Jaanhavi was born on an even date.
- Jaanhavi was born between the 20th and 30th of the month.
When was Jaanhavi born?

a) April 22nd b) April 25th c) August 20th d) April 12th

The Thinking Spot

2 circles, a triangle, and a square are packed in the given boxes, one shape in each box.
• The circles are placed in the adjacent boxes
• The square and the triangle are NOT present in the adjacent boxes
Given that you know the above information, at a minimum, how many boxes must you open to identify the specific shape present in each box?
Note: *Adjacent means adjoining or next to something*



(a) 3 (b) 2 (c) 1 (d) 0

Chapter 13: The Transport Museum

1. **A train can carry four times the passengers as that of a bus. Which of these statements gives the same information as the given statement?**
   a) Bus is smaller than Train
   b) Capacity of a bus is a quarter of the capacity of a train
   c) Ship is larger than a Train
   d) All of these

---

2. **Bholu, Shalu, and Rinku distributed 120 bananas equally among themselves. Which of the given statements can be TRUE?**
   a) Bholu has more than 35 bananas
   b) Shalu has 40 bananas
   c) Rinku has less than 60 bananas
   d) All of these

---

3. **There are three brothers: Sumit, Suraj, and Sagar. The product of their ages is 175. Sumit and Suraj are twins. How old is Sagar?**
   a) 5 b) 6 c) 7 d) 8

---

4. **Shreya has 10 toffees, Kriti has 12 toffees, Aishwarya has 14 toffees, and Aditi has 18 toffees. Which two of them have a number of toffees that can be shared equally among three people?**
   a) Kriti and Aditi
   b) Shreya and Kriti
   c) Aishwarya and Aditi
   d) Aditi and Shreya

---

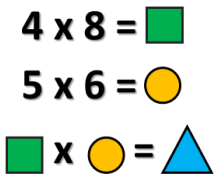
5. **A cube of side length 8 cm is cut into 64 smaller cubes of equal size. What would be the side length of each smaller cube formed?**
   a) 1 cm b) 4 cm c) 2 cm d) None of these

---

6. **An online sale for electronic gadgets lasts for 3 hours. The entire buying process for one product takes 10 minutes. Sameer manages to buy the maximum number of products during the sale hours. Since he needs more products, he calls his friend to help buy the remaining products one hour before the end of the sale. What is the maximum number of products both of them can buy together during the sale?**
   a) 22 b) 24 c) 28 d) 20

---

7. **Based on the equations given below, find the value of the triangle.**



   a) 96 b) 720 c) 960 d) 992

8. **Which of the following statements is/are sufficient to answer the given question?**
Question: X is a 3-digit number. Is X divisible by 3?
Statement 1: Both the first and last digits of X are divisible by 3
Statement 2: X is a prime number

a) Only statement 1 alone is sufficient
b) Only statement 2 alone is sufficient
c) Both 1 and 2 are together required
d) Question cannot be answered even if both pieces of information are used

---

9. **P, Q, R, S, and T buy mangoes in each round. They have 4 rounds, and the following conditions apply in every round:**
   - **Each person buys a different number of mangoes, ranging from 1 to 5**
   - **P buys the least, T buys the most, and R buys more than Q but less than S**
   - **After 4 such rounds, all the mangoes are shared equally among the five of them**

Who gets the same number of mangoes as the total number of mangoes that he himself buys?

a) P b) Q c) R d) S

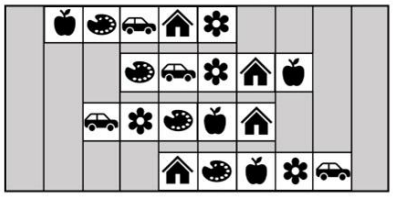
---

10. **In a garden, plants are arranged in 140 rows and 2 columns, where each row has the same number of plants. If the same number of plants are rearranged in a different number of rows and columns, with each row having the same number of plants, which of the following would never be the number of plants in a row?**

a) 70 b) 40 c) 30 d) 28

The Thinking Spot

You have four white-coloured strips, each containing five items. If each strip can be moved one column to the left or right, then which item can occupy the same column for all the strips?



(a)  (b)  (c)  (d) 

Chapter 14: Data Handling

1. **John took an exam in which he received 4 marks for each CORRECT answer and lost 1 mark for each INCORRECT answer.**
   The following table shows John's scores in each exam, where a few of the values are missing. What is the TOTAL number of questions John attempted in all three exams?

SUBJECTS	No. of CORRECT QUESTIONS	No. of INCORRECT QUESTIONS	TOTAL MARKS SCORED
MATHS	8		26
SCIENCE		4	48
ENGLISH	18		65

a) 40 b) 48 c) 55 d) 56

---

2. **The table given below gives marks of 3 friends A, B, and C in 4 different subjects. In how many subjects has C scored more marks than B but less marks than A?**

	English	Mathematics	Science	Hindi
A	70	65	95	82
B	72	80	75	67
C	80	77	60	73

a) 0 b) 1 c) 2 d) 3

---

3. **Each shop sells two types of fruits among Apples, Bananas, Mangoes, and Strawberries. The fruits displayed in a shop are the ones NOT sold there.**
   • Bob bought all the fruits available in SHOP A
   • Tom bought all the fruits available in SHOP B
   Which fruit did they buy in common?

a) Bananas b) Mangoes c) Strawberries d) Apples

---

4. **If the number of units sold by a company each month follows the pattern shown below, and the same trend continues till the end of the year, how many units were sold in one year?**

Month 1	Month 2	Month 3	Month 4
9	19	29	39

a) 768 units b) 897 units c) 649 units d) None of these

---

5. **Some information about the number of pencils each student has is shown in the image below. Which two students, if they put their pencils together, can share them equally among five students?**

Student	Number of pencils
Pranav	12
Tarun	16
Meenakshi	6
Sanjay	10
Sheetal	13

a) Pranav and Sheetal
b) Tarun and Sanjay
c) Pranav and Meenakshi
d) Tarun and Pranav

6. **The table given below gives the marks of 4 friends, A, B, C, and D, in 4 different subjects. Who among them got the least marks in more than one subject?**

	English	Maths	Science	Hindi
A	70	65	75	67
B	72	80	88	78
C	80	73	60	85
D	90	57	85	82

a) A b) B c) C d) D

---

7. **I was NOT born on Tuesday, Thursday, or Saturday. My friend was NOT born on Monday, Wednesday, or Sunday. If both of us were born on the same day, on which day were we born?**

a) Sunday b) Monday c) Friday d) Saturday

---

8. **In a survey of 40 Men and 40 Women, the following results were obtained based on their interests in Cricket and Chess. The number of people who like BOTH Chess and Cricket are GREATER from which of these categories?**

MEN

Like Cricket	25
Like Chess	15
Neither Cricket nor Chess	10

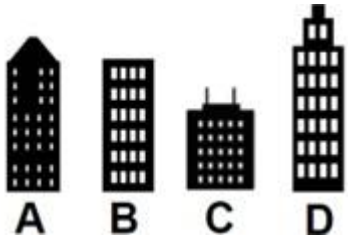
WOMEN

Like Cricket	15
Like Chess	28
Neither Cricket nor Chess	8

a) Men
b) Women
c) Both categories have an equal number of people who like both the games
d) Cannot be determined

---

9. **Some buildings have pet restrictions. The tallest building bans dogs, the second tallest bans cats, and the shortest bans rabbits. If Sam has all three pets, where can he live?**



a) A b) B c) C d) D

---

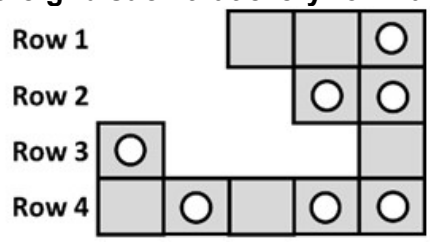
10. **A rabbit, a snake, a monkey, and a frog are named Jack, John, Joe, and Jude.**
Use the clues below to find who Jude is.
Clues:
1. **Joe and the rabbit like each other**
2. **The frog is named John**
3. **Jack is not the rabbit**

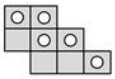
Who is Jude?

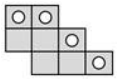
a) Rabbit b) Snake c) Monkey d) Frog

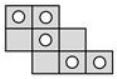
The Thinking Spot

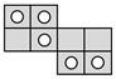
Given below is a part of a 5 x 4 grid. Which of the following will COMPLETE the grid such that every row has exactly 3 circles?



(a) 

(b) 

(c) 

(d) 

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