**CRITIRCAL AND CREATIVE THINKING ITEMS**

**CLASS IX : CHAPTER 1 : NUMBER SYSTEM**

**INDEX**

|  |  |
| --- | --- |
| **S.No.** | **Theme of the item** |
|  | Birds Wing span |
|  | Birthday celebration |
|  | Cheese pizza |
|  | Vegetable garden |
|  | Pedometer |

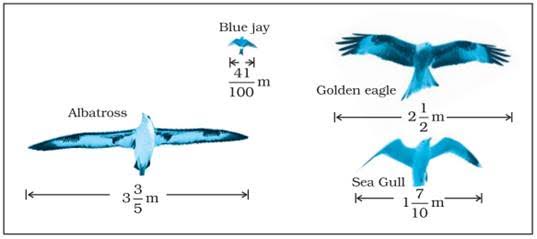
**Theme – 1**

**Birds Wing span**

Birds have many physical features, besides wings, that work together to enable them to fly. They need lightweight, streamlined, rigid structures for flight. The shape of a bird**’**s wing is important for producing lift. The increased speed over a curved, larger wing area creates a longer path of air. This means the air is moving more quickly over the top surface of the wing, reducing air pressure on the top of the wing and creating lift. Also, the angle of the wing (tilted) deflects air downwards, causing a reaction force in the opposite direction and creating lift.



Larger wings produce greater lift than smaller wings. So the smaller-winged birds need to fly faster to maintain the same lift as those with larger wings. The diagram shows the wing spans of different species of birds. Use the diagram to answer the question given below:



Q1: How much longer is the wingspan of the Albatross than the wingspan of a Sea gull?

…………………………………………………………………………………………………………………………..

Q2: Find the ratio of the wingspan of a Golden eagle to the wingspan of a Blue jay?

…………………………………………………………………………………………………………………………..

Q3: As per the given information which bird can cover maximum distance in 10 minutes?

…………………………………………………………………………………………………………………………..

Q4: If all birds shown in the figure were made to fly at the same time, then which one will be third from last?

1. Albatross B) Golden Eagle C) Sea gull D) Blue Jay

Theme- 2

Birthday Celebration

Aryan was given Rs 20000 by his parents to arrange a party for his birthday. He planned to spend on food, of the remaining amount on decoration and of remaining on the return gifts to be given. His parents were very happy to see his planning as he could save some amount but suddenly they come to know that he needs Rs 10000 urgently as his friend needs his help.



Q1: How much money will Aryan borrow from his parents so that he can help his friend?

(A) Rs 5500

(B) Rs 3000

(C) Rs 7000

(D) Rs 6500

Q2: The amount that Aryan borrowed from his parents was

(A) of amount what he got for birthday party

(B) half of what he left after all expenses of birthday

(C) of amount he spent on return gifts

(D) of amount he spent on decoration

Q3: Aryan found that his friends gave him gifts which are equivalent to of amount that he spent on decoration and food. What was the amount on gifts that he received?

(A) Rs 5700

(B) Rs 4500

(C) Rs 3600

(D) Rs 5000

Q4: Had Aryan spent of the remaining amount (after decoration) on return gifts, then the amount left would be a number having decimal expansion

1. terminating and non-repeating
2. non terminating repeating
3. non terminating non-repeating
4. can’t be determined

**Theme- 3**

**CHEESE PIZZA**

A man is eating a cheese pizza and he is fond of it. During the first day he eats the half of the pizza. On the second day, he eats the 1/3rd of the remaining part of the pizza. The third day he eats 1/4th of what is left and 4th day he eats 1/5th of what still remains. He continues eating pizza in the same process of fraction like on 5th day he eats 1/6th, on 6th day he eats 1/7th of what remains and so on.

Q1: If pizza got stale after 4th day then what fraction of original pizza is still available?

1. 0.25 (B)

(C) (D)

Q2: What fraction of pizza he would eat on 7th day if pizza is still fresh.

1. (B)

(C) (D)

Q3: If his sister Ankara also joined him on 5th day and she eats pizza twice of what her brother had, then what fraction of pizza is left?

1. (B)

(C) (D)

Q4: Based upon information given, what would be correct formula for fraction of pizza eaten on nth day?

1. (B)

(C) (D)

Q5: After ‘n’ days what would be the fraction of pizza left?

(A) (B)

(C) (D)

**Theme – 4**

**VEGETABLE GARDEN**

Ritu and Meena grow vegetables in the rectangular garden in their backyard. They were standing in a garden on a sunny day. They noticed that the length of their shadow were of different lengths. Ritu measured Meena’s shadow and found it was 1.7m (66 inches appx.) long. Then Meena measured Ritu’s shadow and found it was 2.0m (78 inches appx.) long. The length of garden is ten times of Ritu’s shadow and breadth is ten times of Meena’s shadow.

**Q1:**Ritu is saying to Meena that she is taller than Meena . Is this statement ~~is~~ correct?

………………………………………………………………………………………………………………………………………

**Q2:** If Ritu is 5 feet 4 inches tall, then how tall is Meena?

………………………………………………………………………………………………………………………………………

**Q3:** If Ritu and Meena standing on opposite corner of garden.

Which of the following can be drawn from this information?

Click ‘Yes’ or “No’ for each conclusion.

|  |  |
| --- | --- |
| Conclusion | Can this be drawn? |
| Distance between them is a rational no. | Yes/No |
| Distance between them is an irrational no. | Yes/No |
| Area of garden is 17 times its breadth | Yes/No |
| Perimeter of garden is twice the sum of their heights | Yes/No |

**Theme - 5**

**PEDOMETER**

Mannu goes for a walk daily & counts the steps using pedometer and notes them in a diary. One of his diary pages shows the record of a week in the month of September. His daily target was 9000 steps.

|  |  |
| --- | --- |
| Monday | 9490 steps |
| Tuesday | steps |
| Wednesday | 6264 steps |
| Thursday | steps |
| Friday | 11435 steps |
| Saturday | 1. steps |

**Q:**1 How many days did he achieve the daily target?

……………………………………………………………………………..

**Q2:** After approximation and rounding off the daily steps to nearest 100, the maximum and minimum values among the approximations will be?

1. Max value = 10500, Min value = 4000
2. Max value = 12000, Min value = 3500
3. Max value = 11400, Min value = 4500
4. Max value = 11500, Min value = 4700

**Q3:** What is ratio of steps taken for Tuesday and Thursday?

Q4: Find the average steps he walked in a week.

…………………………………………………………………………….

Q5: How many more steps he should take on so that his daily average steps for the week will be 9000?

………………………………………………………………………………………………………..