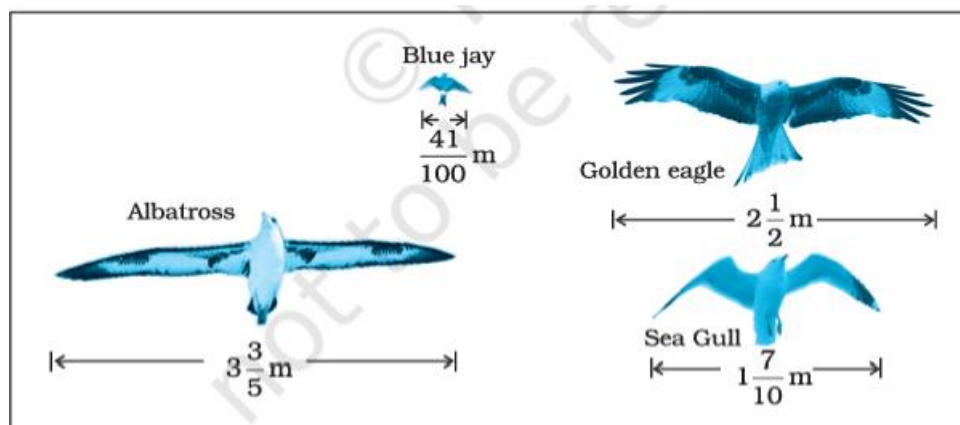
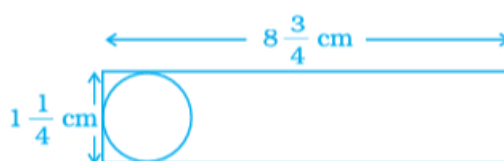


**EduFest Academy Junior, Pune**  
8<sup>th</sup> Maths Rational Number Casa Study

1. The diagram shows the wingspans of different species of birds. Use the diagram to answer the question given below:



- (a) How much longer is the wingspan of an Albatross than the wingspan of a Sea gull?  
 (b) How much longer is the wingspan of a Golden eagle than the wingspan of a Blue jay?
2. Shalini has to cut out circles of diameter  $1\frac{1}{4}$  cm from an aluminium strip of dimensions  $8\frac{3}{4}$  cm by  $1\frac{1}{4}$  cm. How many full circles can Shalini cut? Also calculate the wastage of the aluminium strip.



3. One fruit salad recipe requires  $\frac{1}{2}$  cup of sugar. Another recipe for the same fruit salad requires 2 tablespoons of sugar. If 1 tablespoon is equivalent to  $\frac{1}{16}$  cup, how much more sugar does the first recipe require?
4. Four friends had a competition to see how far could they hop on one foot. The table given shows the distance covered by each.

| Name  | Distance covered (km) |
|-------|-----------------------|
| Seema | $\frac{1}{25}$        |
| Nancy | $\frac{1}{32}$        |
| Megha | $\frac{1}{40}$        |
| Soni  | $\frac{1}{20}$        |

- (a) How farther did Soni hop than Nancy?  
 (b) What is the total distance covered by Seema and Megha?  
 (c) Who walked farther, Nancy or Megha?

5. The table given below shows the distances, in kilometres, between four villages of a state. To find the distance between two villages, locate the square where the row for one village and the column for the other village intersect.

|          | Sonapur          | Ramgarh          | Himgaon          | Rawalpur        |
|----------|------------------|------------------|------------------|-----------------|
| Sonapur  |                  | $40\frac{2}{3}$  | $100\frac{5}{6}$ | $16\frac{1}{2}$ |
| Ramgarh  | $40\frac{2}{3}$  |                  | $210\frac{3}{8}$ | $16\frac{2}{3}$ |
| Himgaon  | $100\frac{5}{6}$ | $210\frac{3}{8}$ |                  | $98\frac{3}{4}$ |
| Rawalpur | $16\frac{1}{2}$  | $30\frac{2}{3}$  | $98\frac{3}{4}$  |                 |

- (a) Compare the distance between Himgaon and Rawalpur to Sonapur and Ramgarh?  
 (b) If you drove from Himgaon to Sonapur and then from Sonapur to Rawalpur, how far would you drive?
6. The table shows the portion of some common materials that are recycled.

| Material       | Recycled       |
|----------------|----------------|
| Paper          | $\frac{5}{11}$ |
| Aluminium cans | $\frac{5}{8}$  |
| Glass          | $\frac{2}{5}$  |
| Scrap          | $\frac{3}{4}$  |

- (a) Is the rational number expressing the amount of paper recycled more than  $\frac{1}{2}$  or less than  $\frac{1}{2}$ ?  
 (b) Which items have a recycled amount less than  $\frac{1}{2}$ ?  
 (c) Is the quantity of aluminium cans recycled more (or less) than half of the quantity of aluminium cans?  
 (d) Arrange the rate of recycling the materials from the greatest to the smallest.
7. The overall width in cm of several wide-screen televisions are 97.28 cm,  $98\frac{4}{9}$  cm,  $98\frac{1}{25}$  cm and 97.94 cm. Express these numbers as rational numbers in the form  $\frac{p}{q}$  and arrange the widths in ascending order.
8. Roller Coaster at an amusement park is  $\frac{2}{3}$  m high. If a new roller coaster is built that is  $\frac{3}{5}$  times the height of the existing coaster, what will be the height of the new roller coaster?
9. Here is a table which gives the information about the total rainfall for several months compared to the average monthly rains of a town. Write each decimal in the form of rational number  $\frac{p}{q}$

| Month  | Above/Below normal (in cm) |
|--------|----------------------------|
| May    | 2.6924                     |
| June   | 0.6096                     |
| July   | - 6.9088                   |
| August | - 8.636                    |

10. The average life expectancies of males for several states are shown in the table. Express each decimal in the form  $\frac{p}{q}$  and arrange the states from the least to the greatest male life expectancy. State-wise data are included below; more indicators can be found in the “FACTFILE” section on the homepage for each state.

| State            | Male | $\frac{p}{q}$ form | Lowest terms |
|------------------|------|--------------------|--------------|
| Andhra Pradesh   | 61.6 |                    |              |
| Assam            | 57.1 |                    |              |
| Bihar            | 60.7 |                    |              |
| Gujarat          | 61.9 |                    |              |
| Haryana          | 64.1 |                    |              |
| Himachal Pradesh | 65.1 |                    |              |
| Karnataka        | 62.4 |                    |              |
| Kerala           | 70.6 |                    |              |
| Madhya Pradesh   | 56.5 |                    |              |
| Maharashtra      | 64.5 |                    |              |
| Orissa           | 57.6 |                    |              |
| Punjab           | 66.9 |                    |              |
| Rajasthan        | 59.8 |                    |              |
| Tamil Nadu       | 63.7 |                    |              |
| Uttar Pradesh    | 58.9 |                    |              |
| West Bengal      | 62.8 |                    |              |
| India            | 60.8 |                    |              |

Source: Registrar General of India (2003) SRS Based Abridged Life Tables. SRS Analytical Studies, Report No. 3 of 2003, New Delhi: Registrar General of India. The data are for the 1995-99 period; states subsequently divided are therefore included in their pre-partition states (Chhatisgarh in MP, Uttaranchal in UP and Jharkhand in Bihar)

11. A skirt that is  $35\frac{7}{8}$  cm long has a hem of  $3\frac{1}{8}$  cm. How long will the skirt be if the hem is let down?
12. Manavi and Kuber each receives an equal allowance. The table shows the fraction of their allowance each deposits into his/her saving account and the fraction each spends at the mall. If allowance of each is Rs. 1260 find the amount left with each.

| Where money goes | Fraction of allowance |               |
|------------------|-----------------------|---------------|
|                  | Manavi                | Kuber         |
| Saving Account   | $\frac{1}{2}$         | $\frac{1}{3}$ |
| Spend at mall    | $\frac{1}{4}$         | $\frac{3}{5}$ |
| Left over        | ?                     | ?             |