



I love Math Circles



15 Sept 2024

I was doing the math circle with Priyasha Advit And Anvi.

For the first problem all of us were having difficulties understanding, then Advit who had done the problem before told us his approach. After him Anvi shared her approach. We then tried to solve the problem together.

I learnt the unitary method in this problem. In this problem first we divided 360 Kms by 18 to find out how much the bus will cover in 1 hour = 20 Km in 1 Hour.

Now we have find how much time it took to cover 50 Kms = 50 divided by 20.= 2 and a half hours. So if she started at 8 am, she would reach at 10:30 am

**Answer**  
**10:30**

**Problem 1:**

**Kilometer**

Shiksha takes 18 hours by bus to go to her grand parent's place which is 360 meters away from her house. The same bus also goes by her office which is 50 kilometres away from her house. If she boards the bus at 8:00 AM when will she reach the office?

360 km for 18 hrs  
1 km run for =  $360/18$   
50 km run for  $360/18$   
into 50  
Reduce to get 2.5 hrs

70  
205

unitary  
method

205 = 2 hrs  
30 min

10:30



Problem to for me was really difficult Anvi who had already done it before give her approach. Advit who understood also gave his approach. I later tried to understand what the solution was.

Anvi suggested that why don't we find how much distance or kilometers he can cover in one hour. After doing that we got the answer as 40 km per hour. Then we have to find how much time it would take to cover 5 Kms. So we said if we divide 40 Km Into 8 parts every part would be 5 km. Then we divided one hour into 8 parts. That we added to one hour to get the answer which 1 hour and 7 ½ mins.

### Problem 2:

Umesh is working in a firm which is 40 km away from his house. He uses his car to go there and it takes one hour to get there. On a rainy day, he needs to go there using some other route and that route is 5 kilometres more than the main route. How much time Umesh will take if he drives at the same speed?

40 km  
per  
hour

45  
kilometers

$$\begin{array}{l} 360 \times 5 \\ \hline 40 \end{array} = \frac{15}{2} = 7.5$$
$$\begin{array}{l} 60 + 7.5 \\ \hline 67.5 \end{array}$$



Other problems we did were also on speed and we solved them together.

### Problem 3:

Vikash is one of the best drivers of racing cars. He can cover up to 102 km in an hour. He participated in a race where the length of the track was 60 km. If he drives with his maximum capable speed how much time will need to cover 10 rounds of the track? 600km

$$\begin{array}{r} 102 \\ \times 600 \\ \hline 6120 \\ \hline \end{array}$$

~~102~~  
~~317~~

$$600 \times 10 = 6000$$
$$\frac{6000}{17} = 352.94$$

352.9  
minutes  
Answer

352.9 min

### Problem 4:

Tania covers 6 rounds of a park in one hour by running and needs 3 hours to cover the same distance by walking. On Sunday morning she started running and after 3 rounds of running her muscles were paining, so rest of the three rounds she covered by walking. How much time did she need to cover 6 rounds of the park on Sunday?

Rounds covered by running: half of an hour = 30 mins  
Rounds covered by walking: half of 3 hrs = 90 mins  
Therefore total distance covered = 30 + 90 = 120 mins = 2 hrs

3 rounds of running = 0.5 hrs  
Sujishnu

3 rounds of walking = 9 hrs  
9 hrs + 0.5 hrs = 9.5 hrs  
Sujishnu

**Three rounds by running = 30 mins**  
**Three rounds by walking = 90 mins**  
**30 mins + 90 mins = 120 minutes**  
**120 mins = 2 hours**



22 Sept 2024

This math circle was based on fractions.

At first all of us read the first problem. The problem was about a boy named Raj who could travel 360 km on  $\frac{3}{5}$ th of his petrol tank. how far could he travel at the same rate with a full tank of petrol.

I told class my Idea was 360 divided by 3 to get one fifth of the tank of petrol which got me the answer as 120 then we multiplied 120 by 5 getting us the answer as 600 that is how I got the answer.

Problem 1	
<p>Raj travels 360 km on three-fifths of his petrol tank. How far would he travel at the same rate with a full tank of petrol?</p>	<p><b>600</b> <b>Isha</b></p> <p><b>600</b></p>
<p><b>360 divided by 3 = 120.</b> <b><math>2 \times 120 = 240</math>.</b> <b><math>240 + 360 = 600</math></b> <b>Sujishnu Sengupta</b></p>	<p><b><math>\frac{3}{5} = 360 \text{ km}</math></b> <b><math>\frac{1}{5} = 360/3 \text{ km}</math></b> <b><math>= 120</math></b> <b><math>\frac{5}{5} = 120 \times 5 \text{ km} = 600 \text{ km}</math></b> <b>Aanvi</b></p>

Problem 2 was a bit hard as I did not understand the percentage but Anvi who had done the problem before told me what she thought about it. Anvi had first - 75% From 100% she had gotten 25 percent as rupees 600. therefore we did 600 into 4 equal 2400 to get the answer hence the answer is 2400 .

**Problem 2**

Priya

 $\frac{3}{4}$ 

A person goes shopping and spends 75% of his money. If he is now left with Rs. 600, find out how much he had in the beginning.

$$\begin{aligned} 25\% &= \text{Rs } 600 \\ 100\% &= \text{Rs } 600 \times 4 \\ &= \text{Rs } 2400 \text{ Aanvi} \end{aligned}$$

**2400**  
Isha

Similar ways we solve the rest of the problem. I have shown you the Jamboards of the third problem below. In the third problem  $12\frac{3}{4}$  is equal to  $51\frac{1}{4}$  m hence answer is zero.

**Problem 3**

A piece of wire is of length  $12\frac{3}{4}$  m. If it is cut into two pieces in such a way that the length of one piece is  $51\frac{1}{4}$  m. What is the length of the other piece?

**zero<**  
Isha

**Problem 4**

Find the fraction which is as much greater than  $\frac{5}{8}$  as is less than  $\frac{6}{7}$

$$\begin{aligned} \frac{5}{8} + \frac{6}{7} &= \\ \frac{48+35}{56} &= \frac{83}{56} \\ \frac{83}{56} \text{ by } \\ \frac{2}{1} &= \frac{83}{56} \times \frac{1}{2} = \frac{83}{112} \end{aligned}$$

112  
Isha