DIVISION BY FRACTIONS
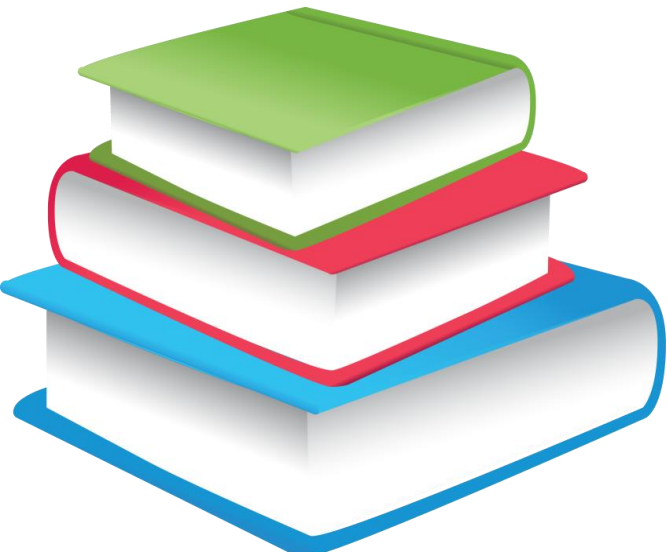
GROUP MEMBERS:
BINDU

RAMA

PALAK

SCENARIO

- 1 3/4 DIVIDED BY 1/2

We will be observing performances of some U.S and Chinese teachers

INVERT
AND
MULTIPLY

U.S TEACHERS

RESPONSE	NO. OF TEACHERS	%
Correct Algorithm,Complete answer	9	43
Correct Algorithm,Incomplete answer	2	9
Incomplete algorithm, unsure , incomplete answer	4	19
Fragmentary memory of the algorithm, no answer	5	24
Wrong strategy, no answer	1	5
TOTAL	21	100

Common phrase used by Chinese teachers

DIVIDING BY A NUMBER
IS EQUIVALENT TO
MULTIPLYING BY ITS
RECIPROCAL

Performances by Chinese teachers

All the 72 teachers computed correctly

Also they gave different approaches to the same problem.

Understanding the Algorithm

- I Method:
- 1 3/4 ÷ 1/2
- = 1 3/4 ÷ (1 ÷ 2)
- = 1 3/4 ÷ 1 * 2
- = 1 3/4 * 2 ÷ 1
- = 1 3/4 * (2 ÷ 1)
- = 1 3/4 * 2

- II Method
- 1 3/4 ÷ 1/2
- = (1 3/4 * 2/1) ÷ (1/2 * 2/1)
- = (1 3/4 * 2/1) ÷ 1
- = 1 3/4 * 2/1
- 3 1/2

Alternative Computational Approaches

- 1) Dividing using decimals
- 1 3/4 ÷ 1/2
- =1.75 ÷ 0.5
- = 3.5

- 2) U don't have to multiply
- **1 3/4 ÷ 1/2**
- **= 7/4 ÷ 1/2**
- **= (7÷1)/ (4÷2) =7/2= 3 1/2**

- 3) **Using Distributive law**
- 1 3/4 ÷ 1/2
- =(1 + 3/4)÷ 1/2
- =(1 + 3/4) * 2
- =(1*2) + (3/4 * 2)
- = 2 + 1 1/2
- = 3 1/2

POINT TO NOTE

- The result of dividing by a fraction less than 1 will be larger than the dividend.

The Models of division by fractions

MORE QUESTIONS

- How many 50 ps are there in Rs1.75?
- A person has 1 3/4 of similar cakes.How many half cakes can he make out of it?
- Raju has 1 3/4 m of a stick. How many 1/2 m sticks can he cut out from it?
- If half of a length is 1 3/4 m,how long is the whole?(This is called Partitive model of Division)

PARTITIVE MODEL OF DIVISION

Finding a Number such that 1/2 of it is 1 3/4

CONCLUSION

- U.S TEACHERS
- Their knowledge about basic features of fractions was very limited.

- CHINESE TRS
- Their way of doing mathematics showed significant conceptual understanding.

THANK YOU