

# Fractions

\* Fraction → A Fraction is defined as a part of a whole number. It can be expressed as a ratio between two integers separated by a solidus.

Ex:-  $\frac{3}{7}$  → 3 is the numerator.

7 → 7 is the denominator.

It is read as three-sevenths.

## Types of Fractions

- Proper fractions → It is a type of fraction where the denominator is always greater than the numerator. Ex:-  $\frac{4}{5}$
- Improper fractions → It is a type of fraction where the denominator is always less than the numerator. Ex:-  $\frac{7}{3}$
- Mixed fractions → The type of fractions which consists of a whole number and a proper fraction. Ex:-  $16\frac{3}{4}$
- Like fractions → The type of fractions which have same denominators are called like fractions. Ex  $\frac{1}{15}$

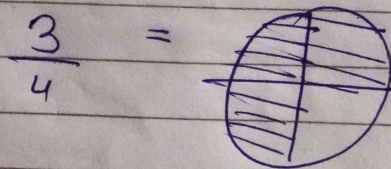
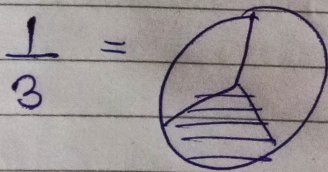
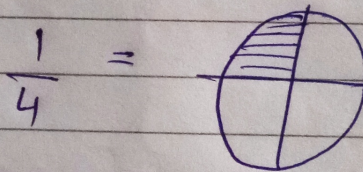
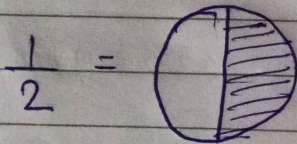


- Unlike fractions → The type of fractions which have different denominators are called, unlike fractions. Ex →  $\frac{6}{27}$

$$\star \text{ Fraction} = \frac{\text{Numerator}}{\text{Denominator}}$$

### ★ Representing fractions

- Fractions can be represented using numbers, figures or words.





Day - 4 Nov 2020

Ch-8

MY Practice Time - 1

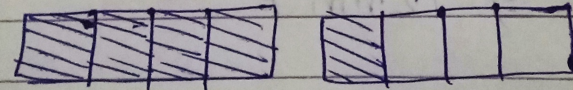
Q1. Colour all the proper fractions, red & improper fractions, green.

$\frac{1}{2}$ Red	$\frac{8}{4}$ Green	$\frac{5}{4}$ Green	$\frac{3}{5}$ Red	$\frac{7}{9}$ Red	$\frac{8}{11}$ Red
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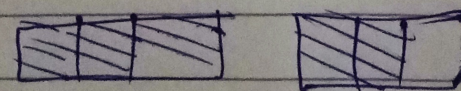
$\frac{1}{5}$ Red	$\frac{5}{10}$ Red	$\frac{6}{5}$ Green	$\frac{2}{3}$ Red	$\frac{13}{3}$ Green	$\frac{9}{11}$ Red	$\frac{9}{7}$ Green
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$\frac{8}{20}$ Red	$\frac{15}{7}$ Green	$\frac{2}{4}$ Red
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Q2. Show the following improper fractions using diagrams and also convert them into mixed numbers.

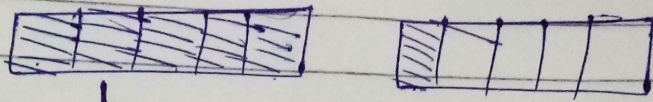
(a)  $\frac{5}{4} =$    $4 \frac{1}{4}$

$\Rightarrow 1 \frac{1}{4}$

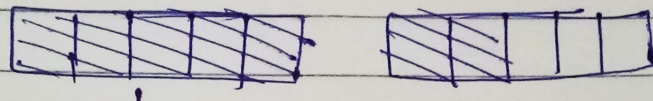
(b)  $\frac{5}{3} =$    $3 \frac{2}{3}$

$\neq 1 \frac{2}{3}$

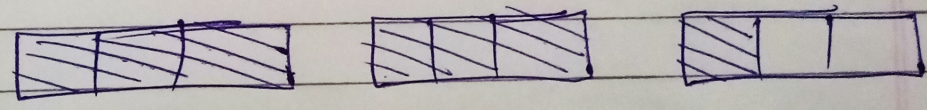


(c)  $\frac{6}{5} =$    

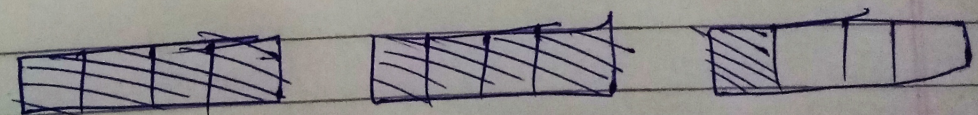
$$\begin{array}{r} 1 \\ 5 \overline{) 6} \\ \underline{-5} \\ 1 \end{array} \Rightarrow 1 \frac{1}{5}$$

(d)  $\frac{7}{5} =$    

$$\begin{array}{r} 1 \\ 5 \overline{) 7} \\ \underline{-5} \\ 2 \end{array} \Rightarrow 1 \frac{2}{5}$$

(e)  $\frac{7}{3} =$    

$$\begin{array}{r} 2 \\ 3 \overline{) 7} \\ \underline{-6} \\ 1 \end{array} \Rightarrow 2 \frac{1}{3}$$

(f)  $\frac{9}{4} =$    

$$\begin{array}{r} 2 \\ 4 \overline{) 9} \\ \underline{-8} \\ 1 \end{array} \Rightarrow 2 \frac{1}{4}$$



Day 17 Nov 2020

Chapter - 6

My Practice Time 1

Q3. Convert the following into mixed numbers by dividing:-

$$(i) \frac{3}{2} = \frac{2 \sqrt{3} \begin{array}{l} 1 \leftarrow 9 \\ -2 \\ \hline 1 \leftarrow R \end{array}}{2} = 1 \frac{1}{2}$$

$$(ii) \frac{5}{4} = \frac{4 \sqrt{5} \begin{array}{l} 1 \leftarrow 9 \\ -4 \\ \hline 1 \leftarrow R \end{array}}{4} = 1 \frac{1}{4}$$

$$(iii) \frac{9}{6} = \frac{6 \sqrt{9} \begin{array}{l} 1 \leftarrow 9 \\ -6 \\ \hline 3 \leftarrow R \end{array}}{6} = 1 \frac{3}{6}$$

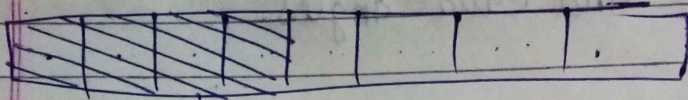
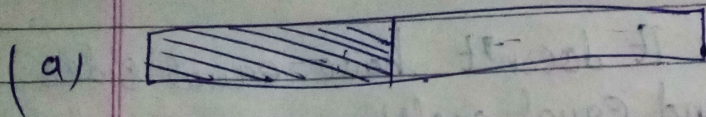
$$(iv) \frac{4}{3} = \frac{3 \sqrt{4} \begin{array}{l} 1 \leftarrow 9 \\ -3 \\ \hline 1 \leftarrow R \end{array}}{3} = 1 \frac{1}{3}$$

$$(v) \frac{11}{3} = \frac{3 \sqrt{11} \begin{array}{l} 3 \leftarrow 9 \\ -9 \\ \hline 2 \leftarrow R \end{array}}{3} = 3 \frac{2}{3}$$

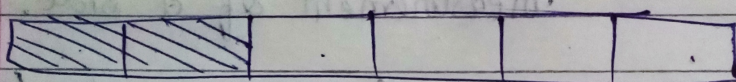
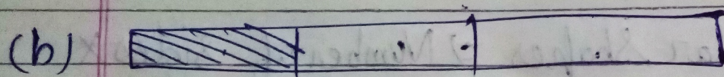
$$(vi) \frac{12}{5} = \frac{5 \sqrt{12} \begin{array}{l} 2 \leftarrow 9 \\ -10 \\ \hline 2 \leftarrow R \end{array}}{5} = 2 \frac{2}{5}$$



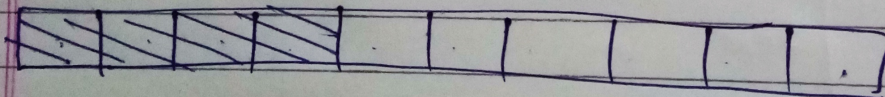
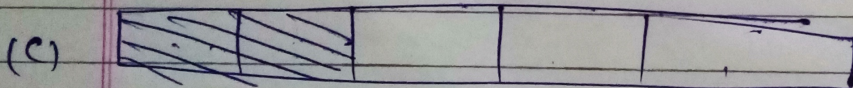
Q4. Shade the two diagrams in such a way that they show equivalent fractions. Write the fractions in the circle.



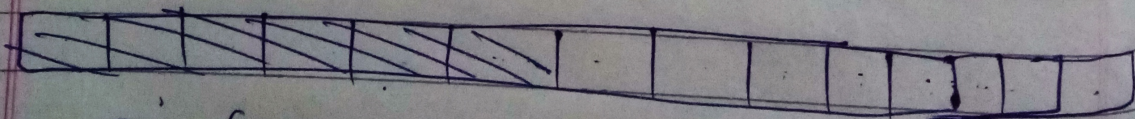
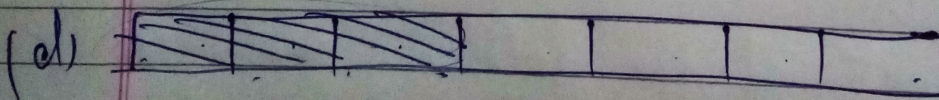
$\left(\frac{1}{2}\right) = \frac{4}{8} \left(\frac{1}{2}\right)$  are equivalent.



$\left(\frac{1}{3}\right) = \frac{2}{6} \left(\frac{1}{3}\right)$  are equivalent.



$\left(\frac{2}{5}\right) = \frac{4}{10} \left(\frac{2}{5}\right)$  are equivalent.



$\left(\frac{3}{7}\right) = \frac{6}{14} \left(\frac{3}{7}\right)$  are equivalent.



Day 18 Nov 2020

Chapter - 6

Q5. Find the equivalent fractions for the following.

(a)  $\frac{2}{3} = \frac{4}{6} \quad \frac{6}{9} \quad \frac{8}{12} \quad \frac{10}{15} \quad \frac{12}{18} \quad \frac{14}{21} \quad \frac{16}{24} \quad \frac{18}{27} \quad \frac{20}{30}$  Multiples of 3  
Multiples of 2

(b)  $\frac{1}{4} = \frac{2}{8} \quad \frac{4}{16} \quad \frac{6}{24} \quad \frac{8}{32} \quad \frac{10}{40} \quad \frac{12}{48} \quad \frac{14}{56} \quad \frac{16}{64} \quad \frac{18}{72}$  Multiples of 4  
Multiples of 2

(c)  $\frac{4}{9} = \frac{8}{18} \quad \frac{12}{27} \quad \frac{16}{36} \quad \frac{20}{45} \quad \frac{24}{54} \quad \frac{28}{63} \quad \frac{32}{72} \quad \frac{36}{81} \quad \frac{40}{90}$  Multiples of 4  
Multiples of 9

Q6. Write any 4 equivalent fractions for the following.

(a)  $\frac{2}{5}$

$\frac{2}{5} \times \frac{2}{2} = \frac{4}{10}$ ,  $\frac{2}{5} \times \frac{3}{3} = \frac{6}{15}$ ,  $\frac{2}{5} \times \frac{4}{4} = \frac{8}{20}$

$\frac{2}{5} \times \frac{5}{5} = \frac{10}{25}$

$\Rightarrow \frac{2}{5} \Rightarrow \frac{4}{10}, \frac{6}{15}, \frac{8}{20}, \frac{10}{25}$

(b)  $\frac{1}{4}$

$\frac{1}{4} \times \frac{2}{2} = \frac{2}{8}$ ,  $\frac{1}{4} \times \frac{3}{3} = \frac{3}{12}$ ,  $\frac{1}{4} \times \frac{4}{4} = \frac{4}{16}$ ,  $\frac{1}{4} \times \frac{5}{5} = \frac{5}{20}$

$\frac{1}{4} \Rightarrow \frac{2}{8}, \frac{3}{12}, \frac{4}{16}, \frac{5}{20}$



$$(c) \frac{4}{8} \Rightarrow \frac{8}{16}, \frac{12}{24}, \frac{16}{32}, \frac{20}{40}$$

$$(d) \frac{4}{9} \Rightarrow \frac{8}{18}, \frac{12}{27}, \frac{16}{36}, \frac{20}{45}$$

$$(e) \frac{2}{9} \Rightarrow \frac{4}{18}, \frac{6}{27}, \frac{8}{36}, \frac{10}{45}$$

$$(f) \frac{1}{3} \Rightarrow \frac{2}{6}, \frac{3}{9}, \frac{4}{12}, \frac{5}{15}$$

$$(g) \frac{1}{8} \Rightarrow \frac{2}{16}, \frac{3}{24}, \frac{4}{32}, \frac{5}{40}$$

$$(h) \frac{6}{18} \Rightarrow \frac{12}{36}, \frac{18}{54}, \frac{24}{72}, \frac{30}{90}$$

Q7. Find the missing numerator and denominator in the following equivalent fractions.

$$(a) \frac{1}{10} = \frac{\boxed{2}}{20} \quad = 10 \times \boxed{\phantom{0}} = 1 \times 20$$

$$10 \times \boxed{\phantom{0}} = 20$$

$$\boxed{\phantom{0}} = \frac{20}{10} = 2$$

$$(b) \frac{4}{6} = \frac{8}{\boxed{12}}$$

$$\Rightarrow 4 \times \boxed{\phantom{0}} = 6 \times 8$$

$$4 \times \boxed{\phantom{0}} = 48$$

$$\boxed{\phantom{0}} = \frac{48}{4} = 12$$



$$(c) \frac{1}{8} \rightarrow \frac{5}{40} \Rightarrow 8 \times \square = 1 \times 40$$

$$8 \times \square = 40$$

$$\square = \frac{40}{8} = 5$$

$$(d) \frac{2}{5} \rightarrow \frac{8}{20} \Rightarrow 5 \times \square = 2 \times 20$$

$$5 \times \square = 40$$

$$\square = \frac{40}{5} = 8$$

$$(e) \frac{4}{9} \rightarrow \frac{36}{81} \Rightarrow 9 \times \square = 4 \times 81$$

$$9 \times \square = 324$$

$$\square = \frac{324}{9} = 36$$

$$(f) \frac{4}{6} \rightarrow \frac{16}{24} \Rightarrow \square \times 16 = 4 \times 24$$

$$\square \times 16 = 96$$

$$\square = \frac{96}{16} = 6$$

$$(g) \frac{1}{21} \rightarrow \frac{3}{63} \Rightarrow 1 \times \square = 3 \times 21$$

$$1 \times \square = 63$$

$$\square = \frac{63}{1} = 63$$

$$(h) \frac{2}{5} \rightarrow \frac{10}{25} \Rightarrow 5 \times \square = 2 \times 25$$

$$5 \times \square = 50$$

$$\square = \frac{50}{5} = 10$$



Day 18 Nov 2020

1. Like Fractions  $\Rightarrow$  When two or more fractions have the same denominator, they are called like fractions.

Example :-  $\frac{8}{3}$ ,  $\frac{7}{3}$ ,  $\frac{5}{3}$ ,  $\frac{1}{3}$  &  $\frac{2}{3}$

2. Unlike Fractions  $\Rightarrow$  When fractions have different denominator, they are called unlike fractions.

Example :-  $\frac{1}{4}$ ,  $\frac{2}{5}$ ,  $\frac{3}{7}$  and  $\frac{4}{3}$



Day 19 Nov 2020

## Chapter - 6

Q8. Find which among the following are like fractions and which are unlike fraction:-

(a)  $\frac{1}{3}, \frac{2}{3}, \frac{7}{3}, \frac{4}{3} \Rightarrow$  Like fractions.

(b)  $\frac{1}{5}, \frac{2}{7}, \frac{3}{9}, \frac{1}{4} \Rightarrow$  Unlike fractions.

(c)  $\frac{2}{7}, \frac{1}{7}, \frac{5}{7}, \frac{8}{7} \Rightarrow$  Like fractions.

(d)  $\frac{7}{5}, \frac{1}{5}, \frac{2}{5}, \frac{4}{5} \Rightarrow$  Like fractions.

(e)  $\frac{1}{9}, \frac{3}{5}, \frac{2}{6}, \frac{4}{7} \Rightarrow$  Unlike fractions.

(f)  $\frac{2}{3}, \frac{1}{7}, \frac{4}{9}, \frac{5}{6} \Rightarrow$  Unlike fractions.

Q9. Reduce the following to the lowest terms.

(a)  $\frac{3}{6} \Rightarrow \frac{3 \div 3}{6 \div 3} \Rightarrow \frac{1}{2}$

(b)  $\frac{9}{36} \Rightarrow \frac{9 \div 9}{36 \div 9} \Rightarrow \frac{1}{4}$



$$(c) \frac{5}{15} \Rightarrow \frac{5 \div 5}{15 \div 5} \Rightarrow \frac{1}{3}$$

$$(d) \frac{4}{12} \Rightarrow \frac{4 \div 4}{12 \div 4} \Rightarrow \frac{1}{3}$$

$$(e) \frac{8}{32} \Rightarrow \frac{8 \div 8}{32 \div 8} \Rightarrow \frac{1}{4}$$

$$(f) \frac{10}{16} \Rightarrow \frac{10 \div 2}{16 \div 2} \Rightarrow \frac{5}{8}$$

$$(g) \frac{20}{35} \Rightarrow \frac{20 \div 5}{35 \div 5} \Rightarrow \frac{4}{7}$$

$$(h) \frac{9}{12} \Rightarrow \frac{9 \div 3}{12 \div 3} \Rightarrow \frac{3}{4}$$

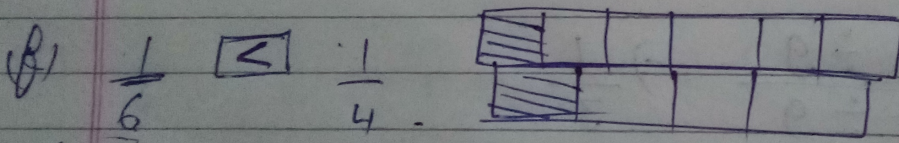
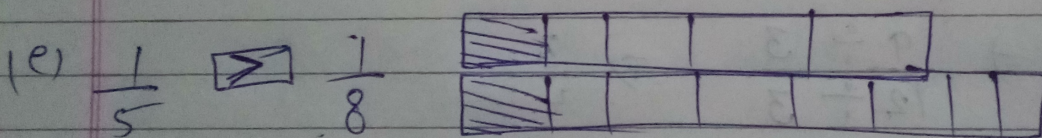
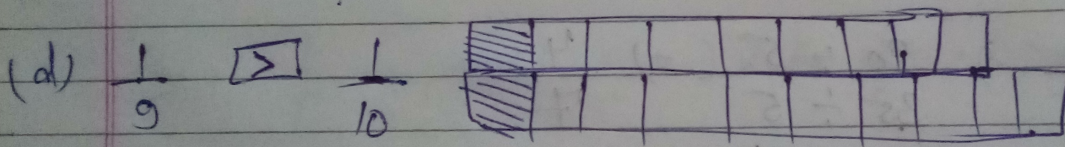
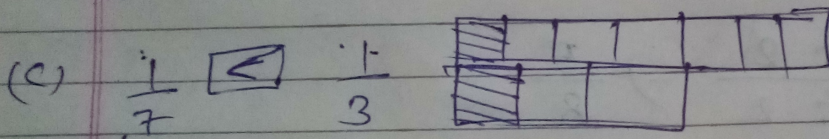
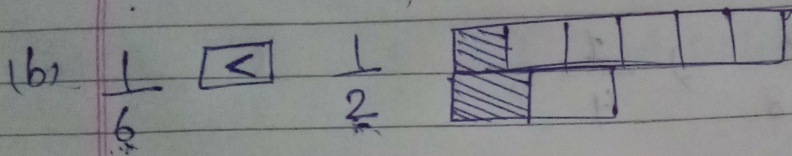
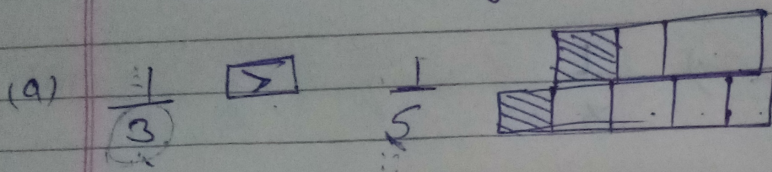
$$(i) \frac{9}{27} \Rightarrow \frac{9 \div 9}{27 \div 9} \Rightarrow \frac{1}{3}$$

$$(j) \frac{12}{15} \Rightarrow \frac{12 \div 3}{15 \div 3} \Rightarrow \frac{4}{5}$$



## My Practice Time - 2

Q. Use diagram to find which is greater and write < or > sign. (one has been done for you)

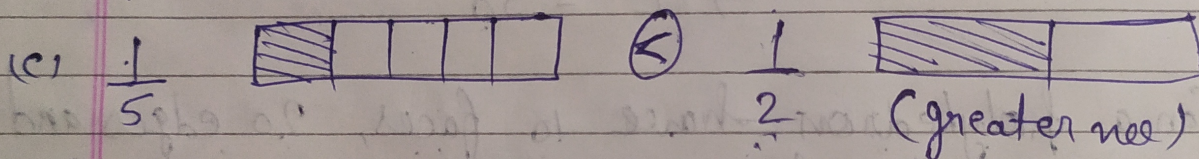
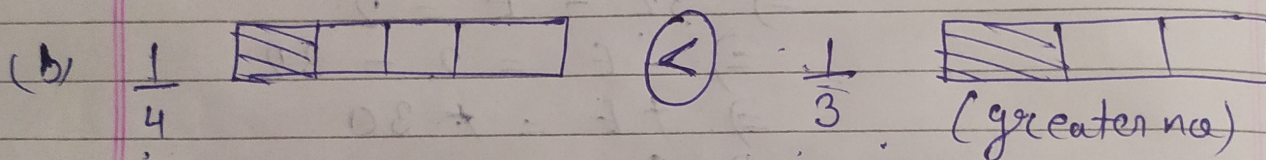
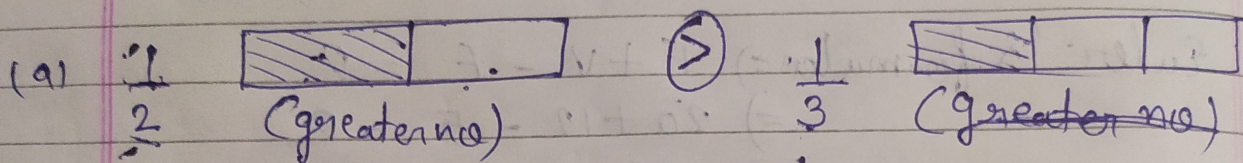




Day - 20 Nov 2020

Chapter - 6  
My Practice Time - 2

Q2. Look at the following diagrams. Colour the required number of parts and say which is greater.



Q3. Compare the following fractions using  $>$ ,  $<$  or  $=$  Sign.

(a)  $\frac{1}{4} < \frac{2}{4}$  (b)  $\frac{4}{6} > \frac{1}{6}$  (c)  $\frac{5}{7} < \frac{6}{7}$

(d)  $\frac{3}{4} = \frac{3}{4}$  (e)  $\frac{1}{3} < \frac{2}{3}$  (f)  $\frac{6}{7} = \frac{6}{7}$

(g)  $\frac{4}{5} > \frac{2}{5}$  (h)  $\frac{1}{5} < \frac{2}{5}$



$$(c) \frac{3}{5} + \frac{1}{5} \Rightarrow \frac{4}{5}$$

$$(f) \frac{3}{10} + \frac{4}{10} \Rightarrow \frac{7}{10}$$

$$(g) \frac{4}{11} + \frac{2}{11} \Rightarrow \frac{6}{11}$$

$$(h) \frac{1}{6} + \frac{3}{6} \Rightarrow \frac{4}{6}$$

Q2. Subtract the following:-

$$(a) \frac{5}{8} - \frac{4}{8} \Rightarrow \frac{1}{8}$$

$$(b) \frac{8}{11} - \frac{5}{11} \Rightarrow \frac{3}{11}$$

$$(c) \frac{5}{9} - \frac{2}{9} \Rightarrow \frac{3}{9}$$

$$(d) \frac{3}{6} - \frac{2}{6} \Rightarrow \frac{1}{6}$$

$$(e) \frac{9}{10} - \frac{4}{10} \Rightarrow \frac{5}{10}$$



Day 21 Nov 2020

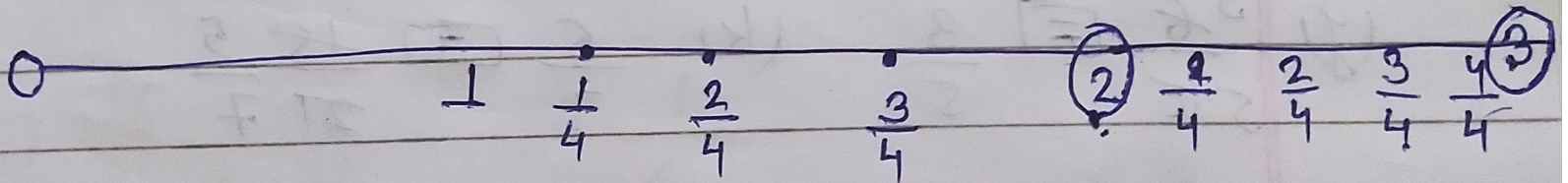
My Practice Time 4

Q1. Tick (✓) the correct option.

(a) Salman gave  $2\frac{3}{4}$  of his chocolates to his friends.

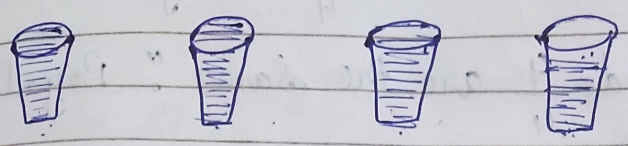
The number of chocolates he gave is between.

- (i) 3 and 4    (ii)  2 and 3    (iii) 5 and 6    (iv) 1 and 2





Q6) How much liquid is there in the glasses below?



- (i) 3 glasses
- (ii)  $3\frac{1}{2}$  glasses
- ~~(iii)  $3\frac{3}{4}$  glasses~~
- (iv)  $3\frac{1}{4}$  glasses

Q2. Rita and Julie had ribbons of same length. Rita cut her ribbon into halves and used one piece out of it. Julie cut her ribbon into thirds and used one piece out of it. Who used more ribbon?

sol. Let the length of ribbon = 1m.

According to question:

Rita cut her ribbon into halves  $\Rightarrow \frac{1}{2} \left( \frac{1}{2} + \frac{1}{2} = \frac{1}{2} \right)$

Fraction of used piece  $\Rightarrow \frac{1}{2}$

Julie cut her ribbon into thirds  $= \frac{1}{3} \left( \frac{1}{3} + \frac{1}{3} + \frac{1}{3} = \frac{1}{3} \right)$

Fraction of ~~the~~ piece used by Julie  $= \frac{1}{3}$

$\frac{1}{2} > \frac{1}{3}$

Rita is used more ribbon.



$$\frac{3}{3} \cdot 1 = \frac{4}{4} \cdot 1$$

Q3. Rahim said  $\frac{3}{3}$  is more than  $\frac{4}{4}$ . Shyam said ~~no~~

Said, "No,  $\frac{3}{3}$  and  $\frac{4}{4}$  are the same". Payal

Who was listening to this said, "Both of you are wrong.  $\frac{3}{3}$  is smaller than  $\frac{4}{4}$ ". Who is correct? Give reasons for your answer.

Sol. Shyam is correct. Because  $\frac{3}{3} = 1$  and  $\frac{4}{4} = 1$

$$1 = 1.$$

Q4. Rahul collected 24 stamps. If he used 4 out of them, what fraction of the stamps are still with him?

Sol. Total number of stamps  $\Rightarrow$  24.

~~Used~~ Number of used stamps = 4

Fraction of used stamp  $\Rightarrow \frac{4}{24} = \frac{1}{6}$

Remaining stamp  $\Rightarrow 24 - 4 \Rightarrow 20$

Fraction of remaining stamp  $\Rightarrow \frac{20}{24} = \frac{5}{6}$



Q5. Tina spends  $\frac{1}{4}$  hour studying Chemistry and  $\frac{3}{4}$  hours studying Biology. How many hours does she study in all?

Sol. Tina spends hour for studying Chemistry =  $\frac{1}{4}$

She spends hours for studying Biology =  $\frac{3}{4}$

Total studying hours  $\Rightarrow \frac{1}{4} + \frac{3}{4} \Rightarrow \frac{4}{4} = 1$  hours.

Q6. Rashmi collected  $\frac{3}{11}$  of the coins and her friend collected  $\frac{4}{11}$  of the coins. How many coins did they collect altogether?

Sol. Rashmi collected number of coins  $\Rightarrow \frac{3}{11}$

Fraction of coins collected by Rashmi =  $\frac{3}{11}$

Fraction of coins collected by her friend =  $\frac{4}{11}$

Total  $\Rightarrow \frac{3}{11} + \frac{4}{11} \Rightarrow \frac{7}{11}$