Things To Remember

Chapter-2 : Fraction and Decimals

1) Proper fraction is a fraction that represent a part of whole
ex: 3/4 = $\frac{3}{4}$ 3 out of 4 parts. $\frac{1}{2}$, $\frac{6}{7}$, $\frac{9}{12}$ etc.

Numerator is smaller than denominator.

2) Improper fraction where numerator is bigger than denominator.
eg. $\frac{7}{4}$, $\frac{12}{9}$, $\frac{5}{4}$ etc.

3) Mixed fraction: The improper fraction $\frac{7}{4}$ can be written as $1\frac{3}{4}$ i.e.

$$4\overline{)7}\ 1 \quad -4 \quad 3$$

$\frac{7}{4} = 1\frac{3}{4}$ → remainder
↑ Quotient (answer)

$\left(\text{Quotient} + \frac{\text{Remainder}}{\text{Divisor}}\right)$

4) Equivalent fraction: have same value.

$$\frac{1}{2} = \frac{2}{4} = \frac{4}{8}.$$

When we multiply or divide both the top and bottom by the same number, the fraction keeps it's value.

$$\frac{1}{2} = \frac{1\times2}{2\times2} = \frac{2}{4}, \quad \frac{2}{4} = \frac{2\times3}{4\times3} = \frac{6}{12} \text{ etc.}$$

5) Fractions with the same denominator are called like fractions.
example: $\frac{2}{7}$, $\frac{5}{7}$, $\frac{6}{7}$ etc.

6) Fraction with different denominators are called Unlike fractions.
$\frac{1}{2}$, $\frac{1}{4}$, $\frac{3}{8}$, $\frac{5}{7}$ etc

7) Fractions with numerator 1 are called unit fractions. $\frac{1}{4}, \frac{1}{7}$

8) To convert a mixed fraction into an improper fraction:

$$2\frac{3}{5} = \frac{(2\times5)+3}{5} = \frac{13}{5}$$

9) Standard / Lowest / Simplest form of a fraction: is that form in which the numerator and denominator have no factor in common. $\frac{6}{13}, \frac{7}{9}, \frac{1}{8}$ other than 1.

10) To convert given fraction into lowest fraction, divide both numerator and denominator by the common factors one by one.

$$\frac{72}{96} = \frac{36\times2}{48\times2} = \frac{36}{48} = \frac{18\times2}{24\times2} = \frac{18}{24} = \frac{9\times2}{12\times2} = \frac{9}{12}$$

$$\frac{9}{12} = \frac{3\times3}{4\times3} = \frac{3}{4} \text{ Ans.}$$

11) Reciprocal (inverse) of a fraction: interchange numerator and denominator.
Reciprocal of $\frac{7}{5}$ is $\frac{5}{7}$ 0 has no reciprocal

Reciprocal of 1 is one.

12) A fraction acts as an operator "of". $\frac{1}{2}$ of $2 = \frac{1}{2}\times2 = 1$

13) Addition of fractions: Make the denominator same.

$$\frac{1}{4}+\frac{1}{4} = \frac{1+1}{4} = \frac{2}{4} = \frac{1}{2}$$

$$\frac{1}{3}+\frac{1}{6} = \frac{1\times2}{3\times2}+\frac{1}{6} = \frac{2}{6}+\frac{1}{6} = \frac{2+1}{6} = \frac{3}{6} = \frac{1}{2}.$$

14) Multiplication of fractions : Two fractions are multiplied by multiplying their numerators and denominators seperately.

$$\text{Product} = \frac{\text{Product of Numerators}}{\text{Product of denominators.}}$$

$$\frac{2}{5} \times \frac{5}{7} = \frac{2 \times 5}{5 \times 7} = \frac{10}{21}$$

15) Division of Fractions : When dividing, multiplying the first fraction by the reciprocal of the other

$$\frac{2}{3} \div \frac{5}{7} = \frac{2}{3} \times \frac{7}{5} = \frac{2 \times 7}{3 \times 5} = \frac{14}{15}$$

$$2 \div \frac{3}{5} = 2 \times \frac{5}{3} = \frac{2 \times 5}{1 \times 3} = \frac{10}{3}$$

$$\frac{2}{3} \div 7 = \frac{2}{3} \times \frac{1}{7} = \frac{2 \times 1}{3 \times 7} = \frac{2}{21}$$

Decimals

1) The fractions in which the denominator is a multiple of 10 (10, 100, 1000, ...) are called decimals / decimal fractions.

$\frac{7}{10}, \frac{9}{100}$ — Decimal fractions

0.7, 0.09 — Decimals.

2) Decimal fraction into Decimal form.

$\frac{7}{100} = 0.07$

(Two zeros in denominator) (Two digits after decimal point)

Number of digits after the decimal (point) is equal to the number of zeros in denominator.

3) Multiplying decimals with 10, 100 and 1000.

Move the decimal to RIGHT as there are number of zeros

$1.732 \times 10 = 17.32$

$1.732 \times 100 = 173.2$

4) Dividing decimals by 10, 100 and 1000:

Move decimal to the left as there are number of zeros.

$845.4 \div 100 = 8.454$

5) Multiplying two decimals:

i) Multiply normally, ignoring the decimals point

ii) Then put decimal point in the answer – it will have as many decimal places as the two original numbers combined. $0.03 \times 1.1 = 3 \times 11 = 33 = 0.033$

Multiply 0.03 by 1.1

start with : 0.03×1.1

multiply without decimal points : $3 \times 11 = 33$

0.03 has 2 decimal places,

and 1.1 has 1 decimal places,

So the answer has 3 decimal places : 0.033

6) Dividing two decimals :

Multiply the divisor (denominator) by as many 10's as necessary until we get a whole number.

Remember to multiply the dividend by the same number of 10's.

(i) Divide $6.4 \div 0.4 = \frac{6.4}{0.4} = \frac{6.4 \times 10}{0.4 \times 10} = \frac{64}{4} = 16$

$= \underline{\underline{16}}$ Ans.

ii) Divide 0.539 by 0.11 $= 0.\overline{539} \div 0.11 = \frac{0.539}{0.11} = \frac{0.539 \times 100}{.11 \times 100}$

$= \frac{53.9}{11}$

$= \underline{\underline{4.9}}$ Ans.

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11) 539 (49
    44
    ---
    99
   -99
    ---
     0
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