Fractions & Decimals

1 What will be the fraction form of $0.35\overline{23}$ Trick

$35\overline{25} - 35252525\ldots$

So simple way to solve this note down the count of number of digits under the bar and outside. Add that many 9 for under the bar and 0 for outside the bar

Here 35 - outside - 2 - 00, and $\overline{25}$ - Inside bar - 99

N $3525 - 35$ Subtract from number outside

D 9900 outside

Inside

$\frac{3488}{9900}$

Outside - 0

$0.4\overline{6}$ - $0.46666\ldots$

$\frac{46-4}{90}$ = $\frac{42}{90}$

90 - outside

Inside

$0.\overline{25} \rightarrow 0.2525$

$\frac{25}{99}$ - Inside bar

2. What is the value of $5.55 + 5 + 5.5 + 5.555 + 5.05 + 5.00$

Here the max decimal point is 3 so fill the rest places with 0

5.550

5.000

5.500

5.555

5.050

5.000

31.655

Scientific notation mostly has one decimal i.e 6.253×10^{-3} like that

better multiply all value

3.) What will be the value of $\frac{24 \times 0.72 \times 4.5}{0.18 \times 0.06 \times 0.9} \times 3$

Simply convert them into fractions

$$\frac{\frac{24}{10} \times \frac{72}{100} \times \frac{45}{10}}{\frac{18}{100} \times \frac{6}{100} \times \frac{9}{10}} \times 3 = 16 \times 15 = 2400$$

4.) What will be $(0.\overline{15268} \div 0.\overline{45804})$

Some rule

$\frac{15268}{9999a} = \frac{15268}{45804}$ Just check for similarity may be try x with 3 we get the answer

$\frac{45804}{99999}$

$\frac{1}{3}$

5.) how much would be $\frac{n-m}{n+m}$, if $2.5m = 0.035n$

$2.5m = 0.035n$ $\frac{25m}{10} = \frac{35n}{1000}$ $\frac{500}{7}$ $= 2500m = 35n$

into fraction

$500m = 7n$ $= \frac{n}{m} = \frac{500}{7}$

ratio & Property rule

$\frac{a}{b} = \frac{c}{d} = \frac{a+b}{a-b} = \frac{c+d}{c-d}$ $\frac{n+m}{n-m} = \frac{507}{493}$ we need $\frac{n-m}{} = \frac{493}{507}$

or

$\frac{n-m}{n+m}$ $\frac{n\left(\frac{n}{m}-1\right)}{n\left(\frac{n}{m}+1\right)} = \frac{\frac{507}{7}-1}{\frac{500}{7}+1} = \frac{\frac{493}{7}}{\frac{507}{7}} = \frac{493}{500} = n-m$

6. Add $17.4\overline{99}$, 17.85 & $17.\overline{333}$

Simply Split

$17 + 0.4\overline{99} = 17 + \frac{495}{990} = 17 + \frac{1}{2} = 17.5$ — ①

→ 17.85 — ②

again

$17 + 0.\overline{333} = 17 + \frac{333}{999} = 17 + \frac{1}{3} = 17.333$ — ③

adding ① + ② + ③

$52.68\overline{3}$

7. what will be value of $1 \times \frac{0.3}{1} \times \frac{0.01}{2} \times \frac{0.003}{3}$

Calculate all zeros - $1+2+3 = 6$

So multiply those numbs

$1 \times 3 \times 1 \times 3 = 9$

now

$0.\underline{000009}$

8. what will be value of $\frac{1}{0.0004659}$ if $\frac{1}{4.659} = 0.2146$

$\frac{1}{4.659 \times 10^{-4}}$

$\frac{10^4}{4.659} = 0.2146$

2146

$\overline{2.75}$ and $3.7\overline{8}$

$-2 + (-3) + (0.75)(0.\overline{8})$

$-5 + 1.53$

$\overline{4}.53$

9.) $4.142 + 100.8 + ? + 0.053 = 105.153$? stands for

$? = 105.153 - 4.142 - 100.8 - 0.053$

Separate

$105.1 - 100 - 0 = 1$

$153 - 142 - 800 - 053 = -842$

$1 + (-0.842) = 0.158$

10.) $19.399 + 10.330 + 7.820 + 3.111$

Separate

$39 + .399 = 40.666$

330

$.810$

$.111$

666

11.) what is the approximate value of $8459 \div 11.98 - 2399 \div \frac{7}{140}$

$\frac{8460}{12} - 24 \div \frac{7}{140}$ VBODMAS

Just take app value for easy calculation

$705 - \frac{24}{\frac{7}{140}} = 705 - 24 \times 20 = 705 - 480$

225

12.) which of the following is the longest

$\frac{5}{8}, \frac{3}{7}, \frac{2}{9}, \frac{4}{5}$

Ratio trick

$\frac{a}{b} \times \frac{c}{d}$

$ad > bc$

$\frac{a}{b} > \frac{c}{d}$ whichone is largest, the value becomes true

① $\frac{5}{8} \times \frac{3}{7} = 35 > 24$

$\frac{5}{8} \div \frac{2}{a} \times \frac{11}{5}$ ②

$10 < 56 \quad -4 \quad -11$

$\frac{5}{8} \quad \frac{4}{5} \quad 25 < 32 \quad \frac{4}{5}$ largest

Take all the high value and find largest

13. The least of the following $0.2, (0.2), 0.\dot{2}, 1 \div 0.2$

0.2 ①, $(0.2) = 0.04$ ② $0.\dot{2} = 0.222$ ③ $1 \div 0.2 = 0.5$

based on value zeroes increases

14. what is increasing order of fraction $\frac{6}{7}, \frac{8}{a}, \frac{7}{8}, \frac{a}{10}$

If denominator > Numerator
D-N = of all has same value
Small the Numerator = Smaller fraction

Trick

$\frac{6}{7} \quad \frac{7}{8} \quad \frac{8}{a} \quad \frac{9}{10}$ - order

15. what is the increasing order of fraction

$\frac{14}{17}, \frac{10}{12}, \frac{6}{7}, \frac{18}{21}$

$\frac{6}{7} \xrightarrow{+1} \frac{10}{12} \xrightarrow{+1} \frac{14}{17} \xrightarrow{+1} \frac{18}{21}$ If both numerator & denominator is increasing by a value the small Numerator = Smaller value large Denominator = large value

$\frac{6}{7} < \frac{10}{12} < \frac{14}{17} < \frac{18}{21}$

16) $\frac{4}{7}$ of $\frac{2}{3}$ of $\frac{5}{6}$ of $\frac{5}{8}$ of 1008

$\frac{4}{7} \times \frac{2}{3} \times \frac{5}{6} \times \frac{5}{8} \times 1008 = 200$

17) If a fraction denominator is decreased by 80% & numerator is increased by 300%, the fraction becomes 2/9. what is the fract.

$a = a + 300\% = a + \frac{300}{100} \times a = a = 4a$ — ①

$b = b - 80\% = b - \frac{80}{100} \times b = b = 0.2b$

$\frac{4a}{0.2b} = \frac{20}{9} = \frac{a}{b} = \frac{1}{90}$

18) In 3 fractions when the largest fraction is divided by smallest result = 5/4, greater than middle fraction by 1/2. If sum of all = $2\frac{3}{12}$, find difference b/w largest & smallest

let A = largest, B = middle, C = Smallest

$\frac{A}{C} = \frac{5}{4}$, $A = \frac{5}{4}C$ — ①

$\frac{5}{4} = B + \frac{1}{2} = B = \frac{3}{4}$ — ②

$2\frac{3}{12} = \frac{27}{12}$

$\frac{5}{4}C + \frac{3}{4} + C = \frac{27}{12}$ $C = 2(3 - 3$

$A = \frac{5}{4}C = \frac{5}{4} \times \frac{2}{3} = \frac{5}{6}$ $A - C = \frac{5}{6} - \frac{2}{3} = 1/6$

19. Express $\frac{2}{3}$ of $\frac{1}{4}$ of Rs 25.20 as a fraction of $1\frac{1}{2}$ of Rs 36

$$\frac{2}{3} \times \frac{1}{4} \times 25.20 = M \times 1\frac{1}{2} \times 36$$

$$\frac{1}{6} \times 25.20 = M \times \frac{3}{2} \times 36$$

$$M = \frac{25.20}{6 \times 3 \times 18} = \frac{140}{18} = \frac{7}{90}$$

20. $8 - 8 \times \dfrac{2\frac{1}{5} - 1\frac{2}{7}}{2 - \frac{1}{6}}$ is equal to

$$8 - 8 \times \frac{\frac{77-45}{35}}{\frac{2-6}{35}} = 8 - 8 \times \frac{32}{\frac{60}{35}} = 8 - 8 \times \frac{1}{2} = 4$$

21. $8\frac{1}{6} + 5\frac{1}{8} + 4\frac{2}{3} = ?$

Split

$8 + 5 + 4 = 17$

$\frac{1}{6} + \frac{1}{8} + \frac{2}{3} = \frac{23}{24}$

$17\frac{23}{24}$