

Fraction and

Decimals.

1) Fraction of $0.\overline{3523}$

$$0.\overline{3523} = 0.35232323 \dots$$

$$\begin{array}{r} 1 \\ \downarrow \\ \underline{99} \\ 99.00 \end{array}$$

99 - Bar

$$00 - \text{No Bar}$$

$$0.46 \rightarrow 0.4666 \dots$$

$$\begin{array}{r} 1 \\ \downarrow \\ \underline{99} \\ 00 \end{array}$$

$$\frac{90}{1} - \text{No Bar}$$

Bar

$$3523 - 35 = \frac{3488}{9900}$$

$$(1 - \frac{9}{9})m = m - 9$$

2) Answer of $(0.\overline{15268} \div 0.\overline{45804})$

$$0.\overline{15268} \rightarrow \frac{15268 - 0}{99999} \rightarrow \text{No numbers without bar}$$

$$\begin{array}{r} \text{5 numbers} \\ \hline \underline{99999} \\ \text{so } 5(99999) \end{array} = \frac{15268}{99999}$$

$$0.\overline{45804} \rightarrow \frac{45804 - 0}{99999}$$

$$= \frac{45804}{99999}$$

division:

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numerator = 2

denominator

$$= \frac{15268}{99999}$$

$$\frac{45804}{99999}$$

$$\rightarrow \frac{15268}{45804} = \frac{152}{45804} \rightarrow \text{method}$$

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

2) Numerator and denominator common factor.

3) Actual division

$$93) \frac{n-m}{n+m} \text{ ist } 0.5m^2 0.035n ?$$

$$0.5m = 0.035n.$$

$$\frac{25}{14} m = \frac{35n}{100}$$

$$2500m = 35n \Rightarrow 500m = 7n.$$

2 ways

$$n:m = 500:7$$

$$\frac{a}{b} = \frac{c}{d} \quad n=500 \quad m=7.$$

$$\frac{a+b}{a-b} = \frac{c+d}{c-d}.$$

$$\frac{n+m}{n-m} = \frac{507}{493}$$

$$\frac{n-m}{n+m} = \frac{493}{507}$$

Koeffizienten:

$\frac{1}{507}, \frac{1}{493}, \frac{1}{507}$

$\frac{1}{507}, \frac{1}{493}, \frac{1}{507}$

9) Add $17.\overline{499}$, 17.85 and $17.\overline{333}$?

$$17.\overline{499} = 17 + 0.\overline{499}$$

$$= 17 + \frac{499-4}{999} \Rightarrow 17 + \frac{495}{999}$$

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

$$\frac{n-m}{n+m} = \frac{m\left(\frac{n}{m}-1\right)}{m\left(\frac{n}{m}+1\right)}$$

$$= \frac{500}{7} - 1$$

$$= \frac{500}{7} + 1$$

$$= \frac{507}{7}$$

$$= \frac{493}{7}$$

$$= \frac{493}{507}$$

$$3rd = 17.\overline{333} \Rightarrow 17 + \frac{333}{999} \Rightarrow 17 + 1\overline{3}$$

$$= 17.5 + 17.85 + 17 + 1\overline{3},$$

$$= 51 + 1.35 + 1\overline{3},$$

$$= 52.35 + 0.333$$

$$= 52.68\overline{3}.$$

5) What will be the value of $\frac{1}{0.0004659}$

$$\frac{1}{0.0004659} = \frac{1}{4.659 \times 10^{-4}}$$

$$= \frac{1 \times 10^4}{4.659} = \frac{1}{4.659} = 0.2146,$$

$$= 0.2146 \times 10^4$$

$$= 2146.$$

6) $4.142 + 100.8 + ? + 0.053 = 105.153.$

$$4.142 + 100.8$$

$$105 - 4 - 100 - 0 = 1$$

$$153 - 142 - 800 - 0.053$$

$$11 - 800 \quad 11 - 853 \Rightarrow -842.$$

$$? = 0.158$$

$$= 1 - 0.842$$

$$= 0.158 \Rightarrow ?$$

$$7) \quad 8459 \div 11.98 - 23.99 \div 7/140$$

$$8459 \div 12 - 24$$

$$\frac{7140}{20}$$

$$705 - 24 \times 20$$

$$= 705 - 480$$

$$= 225 \text{ (approx)}$$

$$8) \quad 945.341 - 1042.792 + 875.435 + 31.025$$

$$\begin{array}{r} 945 \\ - 1045 \text{ (approx)} \\ \hline \end{array}$$

$$\begin{array}{r} 875 \\ - 31 \\ \hline \end{array}$$

$$-100 + 906 = 806$$

9) Largest fraction

$$\frac{5}{18}, \frac{3}{7}, \frac{2}{9}, \frac{4}{15}$$

1st (divider)

$$\frac{5}{18} = 0.6\bar{2}$$

$$\frac{3}{7} = 0.\bar{4}2$$

$$\frac{2}{9} = 0.2\bar{2}$$

$$\frac{4}{15} = 0.8$$

2nd (ratio method)

$$\frac{a}{b} > \frac{c}{d} \Leftrightarrow ad > bc$$

$$\text{else } \frac{a}{b} < \frac{c}{d} \Leftrightarrow ad < bc$$

$$\frac{5}{8} > \frac{3}{7} \Rightarrow 35 > 24$$

$$\frac{2}{9} < \frac{4}{15} \Rightarrow 10 < 32$$

$$\frac{2}{9} < \frac{4}{15}$$

$$\frac{5}{8} > \frac{4}{5} \Rightarrow 25 > 32$$

$$\frac{2}{9} < \frac{4}{5} \text{ (ANSWER)}$$

10) Least numbers:

$$0.2, (-2)^2, 0.\bar{2}, 11 \div 0.2$$

$$0.2 \leq 0.2$$

$$(-2)^2 = 0.04, (\text{ANSWER})$$

$$0.\bar{2} = \frac{2}{9} \Rightarrow 0.22 \quad (\text{number in bars})$$

$$11 \div 0.2 \Rightarrow \frac{1}{0.2} \Rightarrow 10 \frac{1}{2} \Rightarrow 5.$$

11) Increasing order:

$$\frac{6}{7}, \frac{8}{9}, \frac{7}{18}, \frac{9}{10}$$

denominator > Numerator

If deno - nume is same

smaller numerator = smaller fraction ($\frac{6}{7}$)

larger numerator = largest fraction ($\frac{9}{10}$)

$$\frac{6}{7} < \frac{7}{18} < \frac{8}{9} < \frac{9}{10}$$

Comparing between

$\frac{6}{7}$ and $\frac{9}{10}$

12) Increasing order:

$$\frac{14}{17}, \frac{10}{12}, \frac{6}{7}, \frac{18}{22}$$

$$\frac{6}{7} \xrightarrow{4} \frac{10}{12} \xrightarrow{4} \frac{14}{17} \xrightarrow{4} \frac{18}{22} \quad \frac{\Delta P}{d} = \frac{P}{P}$$

Numerator \Rightarrow 4 denominator \Rightarrow +5

small num = smaller fraction largest \Downarrow = largest fraction
 $(\frac{6}{7})$ $\frac{18}{22}$

$$\frac{6}{7} < \frac{10}{12} < \frac{14}{17} < \frac{18}{22} \quad (\text{Increasing order})$$

13) $\frac{4}{9}$ of $\frac{2}{3}$ of $\frac{5}{16}$ of $\frac{5}{8}$ of 100 is what?

$$\begin{aligned} & \frac{4}{9} \times \frac{2}{3} \times \frac{5}{16} \times \frac{5}{8} \times 100 \\ & = \frac{144}{243} \times 5 \times 25 \\ & = \frac{240}{81} \\ & = 200. \end{aligned}$$

14) denominator decreased by 80%.

Total denominator = 100%.

$$= 100\% - 80\% \text{ of } b.$$

$$= 20\% \text{ of } b \Rightarrow 0.2b$$

Numerator increased by

$$(110\%) \text{ of } a = a + 30\% \text{ of } a$$

$$(110\%) \text{ of } a = a + \frac{300}{100} \times a$$

Then the fraction

becomes $\frac{2}{10}$

$$\frac{2}{9} = \frac{4a}{0.2b} \Rightarrow \frac{4a}{2b} = \frac{20}{pb}$$

$$\frac{2}{9} = \frac{20}{pb}$$

$$\frac{a}{b} = \frac{1}{90}$$