

FUNDAMENTALS OF ① FRACTIONS

Class: VI, IIT FOUNDATION⁺

Mathematics; SOLUTIONS

TEACHING TASK

01. $\frac{5}{2}$ is an improper fraction

Ans: B

02.

03. Given $3\frac{4}{5}$

According to problem $3\frac{6}{5}$

Ans: A

04. $4\frac{2}{5} = \frac{22}{5}$

Ans: A

05. mixed number

Ans: B

06. $2\frac{4}{5} = \frac{14}{5}$

Ans: —

07. $\frac{3}{x} = \frac{45}{604}$

$\Rightarrow x = 4$

Ans: D

08. $\frac{11}{17} = 0.65$ (approx)

Descending order

$\frac{9}{13} = 0.69$ (approx)

$\frac{9}{13}, \frac{11}{17}, \frac{5}{8}$

$\frac{5}{8} = 0.62$ (approx)

Ans: B

09. $\frac{24}{168} = \frac{1}{7}$

Ans: B

(2)

10. No. of students who watch cartoons = $48 \times \frac{1}{4} = 12$

Do not watch cartoons = $48 - 12 = 36$

Ans: C

11. $\frac{8}{16} = \frac{1}{2}$

Ans: B

12. $\frac{8}{12} = \frac{2}{3}$

Ans: A

13.

14. option D: $\frac{1}{4} = 0.25$, $\frac{3}{8} = 0.37$, $\frac{2}{5} = 0.4$. Ans: D

15. JEE ADVANCED LEVEL QUESTIONS

01. $\frac{a}{b} = \frac{5}{6}$

option A: $\frac{10}{12} = \frac{5}{6}$ (True) | $\Rightarrow \frac{25}{30} = \frac{5}{6}$

option B: $\frac{15}{18} = \frac{5}{6}$ (True) | $\Rightarrow \frac{20}{24} = \frac{5}{6}$

Ans: A, B, C, D

02. A) $\Rightarrow \frac{1}{2} = \frac{2}{4}$ (True) | C) $\frac{2}{5} \neq \frac{4}{9}$

B) $\Rightarrow \frac{3}{9} = \frac{1}{3}$ (True) | D) $\frac{4}{7} \neq \frac{8}{13}$

Ans = A, B

03. Assertion (A): True

Reason (R): Conceptual (True)

Ans: A

04. Assertion (A): True

(3)

Reason (R): Conceptual (True)

Ans: A

05. Assertion (A): $2\frac{4}{7} = \frac{18}{7}$ (True)

Reason (R): Conceptual (True)

Ans: A

06. Statement I: $\frac{9}{2}$ is proper fraction (False)

Statement II: Conceptual (True)

Ans: C

07. Statement I: True

Statement II: True

Ans: A

08. Given $\frac{7}{8}$, $\frac{1}{3}$ L.C.M of 8, 3 = 24

$$= \frac{21}{24}, \frac{8}{24}$$

Opt: D $\Rightarrow \frac{17}{24} < \frac{21}{24}$ and $\frac{17}{24} > \frac{8}{24}$ Ans: D

09. $\frac{p}{q} = \frac{2}{3}$

$$\Rightarrow \frac{p}{q_3} = \frac{2}{3}$$

$$\Rightarrow p = 6$$

Ans: 6

10. $\frac{x}{4} = \frac{717}{x} \Rightarrow x = 28$

Ans: 28

11. a) $\frac{2}{10}, \frac{3}{100}, \frac{4}{1000}, \frac{5}{10,000}$ are decimal fractions

b) $\frac{2010}{2004}, \frac{15}{19}, \frac{2}{3} \rightarrow$ vulgar fractions

c) $\frac{1}{2010}, \frac{7}{2010}, \frac{78}{2010}, \frac{1729}{2018} \rightarrow$ Like fractions (4)

d) $\frac{3}{4}, \frac{5}{7}, \frac{6}{12}, \frac{21}{109} \rightarrow$ Unlike fractions

Ans: x, s, p, v

12. a) $80p = \text{Rs } \frac{80}{100} = \text{Rs } \frac{4}{5}$

Now $\frac{\left(\frac{4}{5}\right)}{5} = \frac{4}{25}$

b) $2 \text{ days} = 2 \times 24 = 48 \text{ hours}$

$\therefore \frac{8}{48} = \frac{1}{6} \text{ hour}$

c) $1 \text{ kg} = 1000 \text{ grams}$

~~100~~ $\frac{450}{1000} = \frac{9}{20}$

d) $1 \text{ lit} = 1000 \text{ ml}$

$\therefore \frac{350}{1000} = \frac{7}{20}$

Ans: x, s, q, p

LEARNERS TASK

Q1'S

01. a \rightarrow whole part

AA: A

02. $\frac{p}{q} = \frac{2}{5}$

$\Rightarrow \frac{3p}{2q} = \frac{6}{5}$

Ans: A

03. $\frac{21}{8} \times \frac{4}{4} = \frac{44}{32}$

Ans: C

04 opt: D: $\frac{36}{16} = \frac{9}{4}$

5
Ans: D

05 ~~25~~ $\frac{15}{25} = \frac{3}{5}$

Ans: D

06 A $\Rightarrow 2\frac{3}{4} = \frac{11}{4}$, mixed, Improper

B $\Rightarrow \frac{1}{3} \rightarrow$ proper

C $\Rightarrow \frac{1}{2} \rightarrow$ Improper

Ans: C

07 $\frac{4}{9} = \frac{a}{18}$

$\Rightarrow a = 8$

Ans: B

08 $\frac{10}{3} = 3\frac{1}{3}$

Ans: A

09 $3\frac{2}{5} = \frac{17}{5}$

Ans: C

10. 1 hour = 60 min

$\therefore \frac{30}{60} = \frac{1}{2}$

Ans: B

11. A) $\frac{7}{9}$, $\frac{14}{18} = \frac{7}{9}$ (Like fractions)

B) $\frac{2}{5}$, $\frac{3}{10}$ (Unlike fractions)

C) $\frac{1}{3}$, $\frac{4}{12} = \frac{1}{3}$ (Like fractions)

D) $\frac{6}{6} = 1$, $\frac{10}{12}$ (Unlike fractions)

Ans: A, C

12. option C $\Rightarrow \frac{1}{4} = 0.25$
 $\frac{5}{6} = 0.83$
 $\frac{3}{5} = 0.6$

opt A $\Rightarrow \frac{3}{8} = 0.37$
 $\frac{5}{9} = 0.55$
 $\frac{2}{5} = 0.4$

opt: D $\Rightarrow \frac{1}{3} = 0.3$

$\frac{3}{4} = 0.75$
 $\frac{1}{2} = 0.5$

opt B $\frac{7}{8} = 0.87$

$\frac{2}{3} = 0.6$

$\frac{4}{7} = 0.57$

(6)

JEE MAINS LEVEL

01 $3\frac{2}{7} = \frac{23}{7}$

opt: C. $3\frac{1}{7} = \frac{22}{7}$

opt: A: $3\frac{4}{14} = 3\frac{2}{7} = \frac{23}{7}$

opt: A

02 $3\frac{4}{5}$

According to data $\Rightarrow 3\frac{6}{5} = \frac{21}{5}$

opt: A: $3\frac{6}{5} = \frac{21}{5}$

Ans: A

03

04. $\frac{7}{3} = 2\frac{1}{3}$

$3 \overline{) 7} \begin{matrix} 2 \\ 6 \\ \hline 1 \end{matrix}$

Ans: A

05 A $\Rightarrow \frac{1}{2} = 0.5$

C $\Rightarrow \frac{14}{27} = 0.52$

B $\Rightarrow \frac{4}{9} = 0.57$

D $\Rightarrow \frac{2}{3} = 0.6$

Smallest = $\frac{1}{2}$
 Ans: A

06. A) $\frac{1}{3} = 0.3$ | C) $\frac{2}{5} = 0.4$ ⑦
 B) $\frac{5}{12} = 0.41$ | D) $\frac{13}{30} = 0.43$
 Greatest $\frac{13}{30}$ Ans: D

07. $\frac{315}{405} = \frac{7}{9}$ Ans: C

08. $\frac{7}{13} = 0.54$; $\frac{2}{3} = 0.6$; $\frac{4}{11} = 0.36$; $\frac{5}{9} = 0.55$
 Ascending order $\Rightarrow \frac{4}{11}, \frac{7}{13}, \frac{5}{9}, \frac{2}{3}$ Ans: C

09. $\frac{7}{20} \neq \frac{1}{3}$ Ans: D

10. $\frac{3}{5} = 0.6$
 A) $\frac{5}{7} = 0.71$ B) $\frac{2}{3} = 0.66$ C) $\frac{4}{5} = 0.8$ D) $\frac{7}{9} = 0.78$
 \therefore All fractions are greater than $\frac{3}{5}$ Ans: A, B, C, D

11. $\frac{2}{5} = \frac{2 \times 2}{5 \times 2} = \frac{4}{10}$ Ans: A

12. Like fractions $\Rightarrow (\frac{1}{5}, \frac{4}{5}), (\frac{1}{6}, \frac{5}{6})$ Ans: A, C

13. Assertion (A): True
 Reason (R): Conceptual (True) Ans: A

14. Assertion (A): True
 Reason (R): Conceptual (True) Ans: A

15. statement I: $\frac{2}{3} > \frac{2}{7} > \frac{2}{11} > \frac{2}{5}$ (8)
 \therefore The numbers are in Descending order (False)
statement II: Conceptual (True) Ans: D

16. Rani $\Rightarrow \frac{50}{100} = \frac{1}{2}$ part
Manu $\Rightarrow \frac{1}{4}$ th part. i.e. $\frac{100}{4} = 25$ pages
Rani typed more. Ans: A

17. $\frac{2x}{3} = 8$
 $\Rightarrow x = 12$ Ans: 12

18. $\frac{5}{10} = \frac{x-2}{30}$
 $\Rightarrow 30 = 2(x-2)$
 $\Rightarrow 30 = 2x - 4$
 $\Rightarrow 2x = 34$
 $\Rightarrow x = 17$ Ans: 17

19. a) $\frac{24}{78} = \frac{4}{13}$ $\therefore \frac{50}{30} > \frac{21}{30}$

b) $\frac{3}{5} \times \frac{4}{4} = \frac{12}{20}$

c) $\frac{3}{5} < \frac{8}{5}$

d) $\frac{5}{3} \times \frac{10}{10} = \frac{50}{30}$; $\frac{7}{10} \times \frac{3}{3} = \frac{21}{30}$

Ans: c