Fractions
Exercise 2D

Q1

Answer :

(c) $\frac{10}{3}$

$\frac{10}{3}$ is a vulgar fraction, because its denominator is other than 10, 100, 1000, etc.

Q2

Answer :

(c) $\frac{9}{7}$

$\frac{9}{7}$ is an improper fraction, because its numerator is greater than its denominator.

Q3

Answer :

(a) $\frac{105}{112}$

A fraction that is reducible can be reduced by dividing both the numerator and denominator by a common factor.

$\frac{105 \div 7}{112 \div 7} = \frac{15}{16}$

Thus, $\frac{105}{112}$ is a reducible fraction.

Q5

Answer :

(c) equivalent fractions

Equivalent fractions are those which are the same but look different.

Thus, $\frac{2}{3}, \frac{4}{6} = \frac{2}{3}, \frac{6}{9} = \frac{2}{3}, \frac{8}{12} = \frac{2}{3}$ are equivalent fractions.

Q5

Answer :

(c) $\frac{9}{16} > \frac{13}{24}$

The two fraction are $\frac{9}{16}$ and $\frac{13}{24}$.

By cross multiplication, we have:

$9 \times 24 = 216$ and $13 \times 16 = 208$

However, $216 > 208$

$\therefore \frac{9}{16} > \frac{13}{24}$

Q6

Answer :

(d) none of these

Reciprocal of $1\frac{3}{4}$ = Reciprocal of $\frac{7}{4} = \frac{4}{7}$

Q7

Answer :

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

$\left(\frac{3}{10}+\frac{8}{15}\right)=\left(\frac{9+16}{30}\right)$ [∵ LCM of 10 and 15 = 30]

$=\frac{25}{30}=\frac{5}{6}$

Q8

Answer :

(d) $\frac{11}{12}$

$\left(3\frac{1}{4}-2\frac{1}{3}\right)=\left(\frac{13}{4}-\frac{7}{3}\right)$

$=\left(\frac{39-28}{12}\right)$ [∵ LCM of 4 and 3 = 12]

$=\frac{11}{12}$

Q9

Answer :

(d) 144

$36\div\frac{1}{4}=36\times 4$ [∵ Reciprocal of $\frac{1}{4}$= 4]

= 144

Q10

Answer :

(b) $\frac{5}{7}$

Required number = $1\frac{6}{7}\div 2\frac{3}{5}$

$=\frac{13}{7}\div\frac{13}{5}$

$=\frac{13}{7}\times\frac{5}{13}$ [∵ Reciprocal of $\frac{13}{5}=\frac{5}{13}$]

$=\frac{5}{7}$

Q11

Answer :

(d) $2\frac{1}{4}$

Required number = $1\frac{1}{2} \div \frac{2}{3}$

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

$= \frac{3}{2} \times \frac{3}{2}$ [∵ Reciprocal of $\frac{2}{3} = \frac{3}{2}$]

$= \frac{9}{4} = 2\frac{1}{4}$

Q12

Answer :

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

$1\frac{3}{5} \div \frac{2}{3} = \frac{8}{5} \div \frac{2}{3}$

$= \frac{8}{5} \times \frac{3}{2}$ [∵ Reciprocal of $\frac{2}{3} = \frac{3}{2}$]

$= \left(\frac{4\times3}{5}\right) = \frac{12}{5} = 2\frac{2}{5}$

Q13

Answer :

(d) $1\frac{5}{6}$

$2\frac{1}{5} \div 1\frac{1}{5} = \frac{11}{5} \div \frac{6}{5}$

$= \frac{11}{5} \times \frac{5}{6}$ [∵ Reciprocal of $\frac{6}{5} = \frac{5}{6}$]

$= \frac{11}{6} = 1\frac{5}{6}$

Q14

Answer :

(d) $\frac{3}{5}$

Reciprocal of $1\frac{2}{3}$ = Reciprocal of $\frac{5}{3} = \frac{3}{5}$

Q15

Answer :

(b) $\frac{3}{5} < \frac{2}{3} < \frac{14}{15}$

The given fractions are $\frac{3}{5}$, $\frac{2}{3}$ and $\frac{14}{15}$.

LCM of 5, 3 and 15 = 15

Now, we have:

$\frac{2}{3} \times \frac{5}{5} = \frac{10}{15}$, $\frac{3}{5} \times \frac{3}{3} = \frac{9}{15}$ and $\frac{14}{15} \times \frac{1}{1} = \frac{14}{15}$

Clearly, $\frac{9}{15} < \frac{10}{15} < \frac{14}{15}$

$\therefore \frac{3}{5} < \frac{2}{3} < \frac{14}{15}$

Q16

Answer :

(c) 44 km

Distance covered by the car on $2\frac{3}{4}$ L of petrol = $\left(16 \times 2\frac{3}{4}\right)$ km

$= \left(16 \times \frac{11}{4}\right)$ km

= (4 × 11) km = 44 km

Q17

Answer :

(a) $10\frac{1}{2}$ hours

Time taken by Lalit to read the entire book = $\left(6 \times 1\frac{3}{4}\right)$ h

$= \left(6 \times \frac{7}{4}\right)$ h

$= \left(\frac{21}{2}\right)$ h = $10\frac{1}{2}$ h