Exercise 5C

Q1

Answer :

(i) $\frac{2}{3} = \frac{2\times2}{3\times2} = \frac{2\times3}{3\times3} = \frac{2\times4}{3\times4} = \frac{2\times5}{3\times5} = \frac{2\times6}{3\times6}$

$\therefore \frac{2}{3} = \frac{4}{6} = \frac{6}{9} = \frac{8}{12} = \frac{10}{15} = \frac{12}{18}$

Hence, the five fractions equivalent to $\frac{2}{3}$ are $\frac{4}{6}$, $\frac{6}{9}$, $\frac{8}{12}$, $\frac{10}{15}$ and $\frac{12}{18}$.

(ii) $\frac{4}{5} = \frac{4\times2}{5\times2} = \frac{4\times3}{5\times3} = \frac{4\times4}{5\times4} = \frac{4\times5}{5\times5} = \frac{4\times6}{5\times6}$

$\therefore \frac{4}{5} = \frac{8}{10} = \frac{12}{15} = \frac{16}{20} = \frac{20}{25} = \frac{24}{30}$

Hence, the five fractions equivalent to $\frac{4}{5}$ are $\frac{8}{10}$, $\frac{12}{15}$, $\frac{16}{20}$, $\frac{20}{25}$ and $\frac{24}{30}$.

(iii) $\frac{5}{8} = \frac{5\times2}{8\times2} = \frac{5\times3}{8\times3} = \frac{5\times4}{8\times4} = \frac{5\times5}{8\times5} = \frac{5\times6}{8\times6}$

$\therefore \frac{5}{8} = \frac{10}{16} = \frac{15}{24} = \frac{20}{32} = \frac{25}{40} = \frac{30}{48}$

Hence, the five fractions equivalent to $\frac{5}{8}$ are $\frac{10}{16}$, $\frac{15}{24}$, $\frac{20}{32}$, $\frac{25}{40}$ and $\frac{30}{48}$.

(iv) $\frac{7}{10} = \frac{7\times2}{10\times2} = \frac{7\times3}{10\times3} = \frac{7\times4}{10\times4} = \frac{7\times5}{10\times5} = \frac{7\times6}{10\times6}$

$\therefore \frac{7}{10} = \frac{14}{20} = \frac{21}{30} = \frac{28}{40} = \frac{35}{50} = \frac{42}{60}$

Hence, the five fractions equivalent to $\frac{7}{10}$ are $\frac{14}{20}$, $\frac{21}{30}$, $\frac{28}{40}$, $\frac{35}{50}$ and $\frac{42}{60}$.

(v) $\frac{3}{7} = \frac{3\times2}{7\times2} = \frac{3\times3}{7\times3} = \frac{3\times4}{7\times4} = \frac{3\times5}{7\times5} = \frac{3\times6}{7\times6}$

$\therefore \frac{3}{7} = \frac{6}{14} = \frac{9}{21} = \frac{12}{28} = \frac{15}{35} = \frac{18}{42}$

Hence, the five fractions equivalent to $\frac{3}{7}$ are $\frac{6}{14}$, $\frac{9}{21}$, $\frac{12}{28}$, $\frac{15}{35}$ and $\frac{18}{42}$.

(vi) $\frac{6}{11} = \frac{6\times2}{11\times2} = \frac{6\times3}{11\times3} = \frac{6\times4}{11\times4} = \frac{6\times5}{11\times5} = \frac{6\times6}{11\times6}$

$\therefore \frac{6}{11} = \frac{12}{22} = \frac{18}{33} = \frac{24}{44} = \frac{30}{55} = \frac{36}{66}$

Hence, the five fractions equivalent to $\frac{6}{11}$ are $\frac{12}{22}$, $\frac{18}{33}$, $\frac{24}{44}$, $\frac{30}{55}$ and $\frac{36}{66}$.

(vii) $\frac{7}{9} = \frac{7\times2}{9\times2} = \frac{7\times3}{9\times3} = \frac{7\times4}{9\times4} = \frac{7\times5}{9\times5} = \frac{7\times6}{9\times6}$

$\therefore \frac{7}{9} = \frac{14}{18} = \frac{21}{27} = \frac{28}{36} = \frac{35}{45} = \frac{42}{54}$

Hence, the five fractions equivalent to $\frac{7}{9}$ are $\frac{14}{18}$, $\frac{21}{27}$, $\frac{28}{36}$, $\frac{35}{45}$ and $\frac{42}{54}$.

(viii) $\frac{5}{12} = \frac{5\times2}{12\times2} = \frac{5\times3}{12\times3} = \frac{5\times4}{12\times4} = \frac{5\times5}{12\times5} = \frac{5\times6}{12\times6}$

$\therefore \frac{5}{12} = \frac{10}{24} = \frac{15}{36} = \frac{20}{48} = \frac{25}{60} = \frac{30}{72}$

Hence, the five fractions equivalent to $\frac{5}{12}$ are $\frac{10}{24}$, $\frac{15}{36}$, $\frac{20}{48}$, $\frac{25}{60}$ and $\frac{30}{72}$.

Q2

Answer :

The pairs of equivalent fractions are as follows:

(i) $\frac{5}{6}$ and $\frac{20}{24}$ $\left(\frac{20}{24} = \frac{5\times4}{6\times4}\right)$

(ii) $\frac{3}{8}$ and $\frac{15}{40}$ $\left(\frac{15}{40} = \frac{3\times5}{8\times5}\right)$

(iv) $\frac{2}{9}$ and $\frac{14}{63}$ $\left(\frac{14}{63} = \frac{2\times7}{9\times7}\right)$

Q3

Answer :

(i) Let $\frac{3}{5} = \frac{\square}{30}$

Clearly, 30 = 5 × 6

So, we multiply the numerator by 6.

$\therefore \frac{3}{5} = \frac{3\times6}{5\times6} = \frac{18}{30}$

Hence, the required fraction is $\frac{18}{30}$.

(ii) Let $\frac{3}{5} = \frac{24}{\square}$

Clearly, 24 = 3 × 8

So, we multiply the denominator by 8.

$\therefore \frac{3}{5} = \frac{3\times8}{5\times8} = \frac{24}{40}$

Hence, the required fraction is $\frac{24}{40}$.

Q4

Answer :

(i) Let $\frac{5}{\square} = \frac{\square}{\square}$

(i) Let $\frac{5}{9} = \frac{}{54}$

Clearly, 54 = 9 × 6

So, we multiply the numerator by 6.

$\therefore \frac{5}{9} = \frac{5\times6}{9\times6} = \frac{30}{54}$

Hence, the required fraction is $\frac{30}{54}$.

(ii) Let $\frac{5}{9} = \frac{35}{\square}$

Clearly, 35 = 5 × 7

So, we multiply the denominator by 7.

$\therefore \frac{5}{9} = \frac{5\times7}{9\times7} = \frac{35}{63}$

Hence, the required fraction is $\frac{35}{63}$.

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