

1. Write five fractions equivalent to each of the following.

(i) $\frac{2}{3}$

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

(ii) $\frac{4}{5}$

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

(iii) $\frac{5}{8}$

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

(iv) $\frac{7}{10}$

→ $\frac{14}{20}, \frac{21}{30}, \frac{28}{40}, \frac{35}{50}, \frac{42}{60}$

(v) $\frac{3}{7}$

→ $\frac{6}{14}, \frac{9}{21}, \frac{12}{28}, \frac{15}{35}, \frac{18}{42}$

$$\text{Cvi)} \frac{6}{11}$$

$$\rightarrow \frac{12}{22}, \frac{18}{33}, \frac{24}{44}, \frac{30}{55}, \frac{36}{66}$$

$$\text{Cvii)} \frac{7}{9}$$

$$\rightarrow \frac{14}{18}, \frac{21}{27}, \frac{28}{36}, \frac{35}{45}, \frac{42}{54}$$

$$\text{Cviii)} \frac{5}{12}$$

$$\rightarrow \frac{10}{24}, \frac{15}{36}, \frac{20}{48}, \frac{25}{60}, \frac{30}{72}$$

2. Which of the following are the pairs of equivalent fractions?

$$\text{Ci)} \frac{5}{6} \text{ \& } \frac{20}{24}$$

$\rightarrow$ By cross multiplication, we have = $\frac{5}{6} \times \frac{20}{24}$

$$\text{Now, } 5 \times 24 = 120 \text{ \& } 6 \times 20 = 120$$

$$(5 \times 24 = 120) = (6 \times 20)$$

Hence, $\frac{5}{6}$ \& $\frac{20}{24}$ are equivalent fraction.

$$\text{Cii)} \frac{3}{8} \text{ \& } \frac{15}{40}$$

$$\rightarrow \text{So, } 8 \times 15 = 120 \text{ \& } 3 \times 40 = 120$$

$$(8 \times 15) = (3 \times 40)$$

Hence, $\frac{3}{8}$ \& $\frac{15}{40}$ are equivalent fraction.

ciii) $\frac{4}{7} \& \frac{16}{21}$

→ So, $4 \times 21 = 84$ & $7 \times 16 = 112$

~~4×21~~ is not equal to 7×16 .

Hence, $\frac{4}{7} \& \frac{16}{21}$ is not equivalent fraction.

civ) $\frac{2}{9} \& \frac{14}{63}$

→ So, $2 \times 63 = 126$ & $14 \times 9 = 126$

$(2 \times 63) = (14 \times 9)$

Hence, $\frac{2}{9} \& \frac{14}{63}$ is equivalent fraction.

cv) $\frac{1}{3} \& \frac{9}{24}$

→ So, $24 \times 1 = 24$ & $9 \times 3 = 27$

24×1 is not equal to 9×3 .

Hence, $\frac{1}{3} \& \frac{9}{24}$ is not equivalent fraction.

cvi) $\frac{2}{3} \& \frac{33}{22}$

→ So, $2 \times 22 = 44$ & $33 \times 3 = 99$

2×22 is not equal to 33×3

Hence, $\frac{2}{3} \& \frac{33}{22}$ is not equivalent fraction.

3 Find the equivalent fraction of $\frac{3}{5}$ having

ci) denominator 30 cii) numerator 24

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$$c) \rightarrow \frac{3}{5} = \frac{3 \times 6}{5 \times 6} = \frac{18}{30}$$

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

$$cii) \rightarrow \frac{3}{5} = \frac{3 \times 8}{5 \times 8} = \frac{24}{40}$$

The required fraction is $\frac{24}{40}$

4. Find the equivalent fraction of $\frac{5}{9}$ having

i) denominator 54

ii) numerator 35

$$i) \rightarrow \frac{5}{9} = \frac{5 \times 6}{9 \times 6} = \frac{30}{54}$$

The required fraction is $\frac{30}{54}$

$$ii) \rightarrow \frac{5}{9} = \frac{5 \times 7}{9 \times 7} = \frac{35}{63}$$

The required fraction is $\frac{35}{63}$

5. Find the equivalent fraction of $\frac{6}{11}$ having

i) denominator 77

or

ii) numerator 60

$$i) \rightarrow \frac{6}{11} = \frac{6 \times 7}{11 \times 7} = \frac{42}{77}$$

The required fraction is $\frac{42}{77}$

$$ii) \rightarrow \frac{6}{11} = \frac{6 \times 10}{11 \times 10} = \frac{60}{110}$$

The required fraction is $\frac{60}{110}$

6. Find the equivalent fraction of $\frac{24}{30}$ having numerator 4

$$\rightarrow \frac{24}{30} = \frac{24 \div 6}{30 \div 6} = \frac{4}{5}$$

$$\text{Required fraction} = \frac{4}{5}$$

7 Find the equivalent fraction of $\frac{36}{48}$ with
i) numerator 9 ii) denominator 4

$$\text{ii) } \rightarrow \frac{36}{48} = \frac{36 \div 4}{48 \div 4} = \frac{9}{12}$$

$$\text{Required Fraction} = \frac{9}{12}$$

$$\text{ii) } \rightarrow \frac{36}{48} = \frac{36 \div 12}{48 \div 12} = \frac{3}{4}$$

$$\text{Required fraction} = \frac{3}{4}$$

8 Find the equivalent fraction of $\frac{56}{70}$ with
i) numerator 4 ii) denominator 10

$$\text{ii) } \rightarrow \frac{56}{70} = \frac{56 \div 14}{70 \div 14} = \frac{4}{5}$$

$$\text{Required Fraction} = \frac{4}{5}$$

$$\text{ii) } = \frac{56}{70} = \frac{56 \div 7}{70 \div 7} = \frac{8}{10}$$

$$\text{Required fraction} = \frac{8}{10}$$

9. Reduce each of the following fractions into its simplest form:

cii) $\frac{9}{15}$

$$\rightarrow \frac{9}{15} = \frac{9 \div 3}{15 \div 3} = \frac{3}{5}$$

Hence, the simplest form of $\frac{9}{15}$ is $\frac{3}{5}$.

ciii) $\frac{48}{60}$

$$\rightarrow \frac{48}{60} = \frac{48 \div 4}{60 \div 4} = \frac{12}{15}$$

$$\frac{12}{15} = \frac{12 \div 3}{15 \div 3} = \frac{4}{5}$$

Hence, the simplest form of $\frac{48}{60}$ is $\frac{4}{5}$.

ciii) $\frac{84}{98}$

$$\rightarrow \frac{84}{98} = \frac{84 \div 2}{98 \div 2} = \frac{42}{49}$$

$$\frac{42}{49} = \frac{42 \div 7}{49 \div 7} = \frac{6}{7}$$

Hence, the simplest form of $\frac{84}{98}$ is $\frac{6}{7}$.

civ) $\frac{150}{60}$

$$\rightarrow \frac{150}{60} = \frac{150 \div 15}{60 \div 15} = \frac{10}{4}$$

Hence, the simplest form of $\frac{150}{60}$ is $\frac{10}{4}$

cv) $\frac{72}{90}$

$$\rightarrow \frac{72}{90} = \frac{72 \div 2}{90 \div 2} = \frac{36}{45}$$

$$\frac{36}{45} = \frac{36 \div 3}{45 \div 3} = \frac{12}{15}$$

$$\frac{12}{15} = \frac{12 \div 3}{15 \div 3} = \frac{4}{5}$$

Hence, the simplest form of $\frac{72}{90}$ is $\frac{4}{5}$

10. Show that each of the following fractions is in the simplest form:

ci) $\frac{8}{11}$

$\rightarrow$ HCF of 8 & 11 is 1

Hence, $\frac{8}{11}$ is in the simplest form.

cii) $\frac{9}{14}$

$\rightarrow$ HCF of 9 & 14 is 1

Hence, $\frac{9}{14}$ is in the simplest form.

$$\text{ciii) } \frac{25}{36}$$

→ HCF of 25 & 36 is 1.

Hence, $\frac{25}{36}$ is in the simplest form.

$$\text{civ) } \frac{8}{15}$$

→ HCF of 8 & 15 is 1.

Hence, $\frac{8}{15}$ is in the simplest form.

$$\text{cv) } \frac{21}{10}$$

→ HCF of 21 & 10 is 1.

Hence, $\frac{21}{10}$ is in the simplest form.

11. Replace $\square$ by the correct number in each of the following:

$$\text{ci) } \frac{2}{7} = \frac{8}{\square}$$

$$\rightarrow \frac{2}{7} = \frac{8}{28}$$

$$\text{cii) } \frac{3}{5} = \frac{\square}{35}$$

$$\rightarrow \frac{3}{5} = \frac{21}{35}$$

ciii) $\frac{5}{8} = \frac{20}{\square}$

→ $\frac{5}{8} = \frac{20}{32}$

civ) $\frac{45}{60} = \frac{9}{\square}$

→ $\frac{45}{60} = \frac{9}{12}$

cv) $\frac{40}{56} = \frac{\square}{7}$

→ $\frac{40}{56} = \frac{5}{7}$

cvi) $\frac{42}{54} = \frac{7}{\square}$

→ $\frac{42}{54} = \frac{7}{9}$