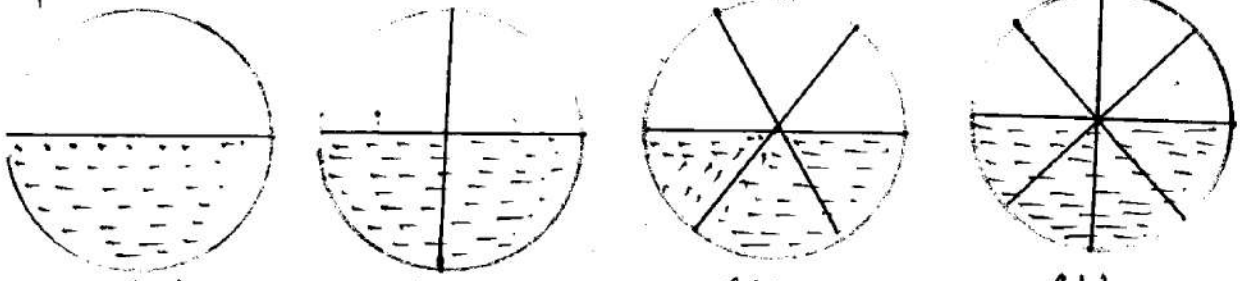
Exercise 6.5

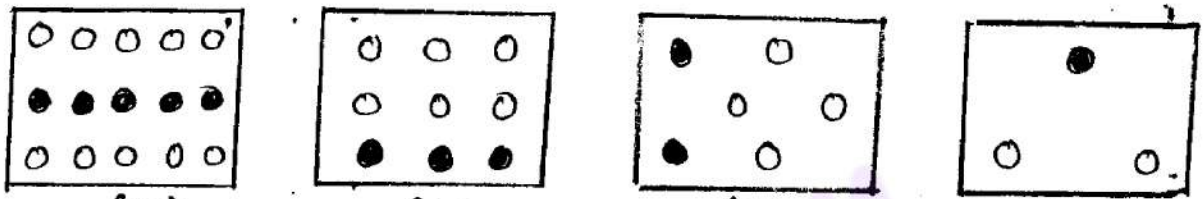
1. Write the fractions and check whether they are equivalent or not.

(i)



(a) (b) (c) (d)

(ii)



(a) (b) (c) (d)

Solution : (i) (a) Shaded Part = 1 out of 2 $= \frac{1}{2}$

(b) Shaded Part = 2 out of 4 $= \frac{2}{4} = \frac{1}{2}$

(c) Shaded Part = 3 out of 6 $= \frac{3}{6} = \frac{1}{2}$

(d) Shaded Part = 4 out of 8 $= \frac{4}{8} = \frac{1}{2}$

∴ They are equivalent

(ii) (a) Shaded Part = 5 out of 15 $= \frac{5}{15} = \frac{1}{3}$

(b) Shaded Part = 3 out of 9 $= \frac{3}{9} = \frac{1}{3}$

(c) Shaded Part = 2 out of 6 $= \frac{2}{6} = \frac{1}{3}$

(d) Shaded Part = 1 out of 3 $= \frac{1}{3}$

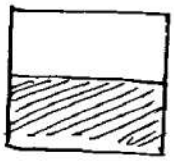
∴ They are equivalent.

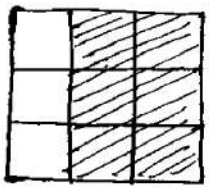
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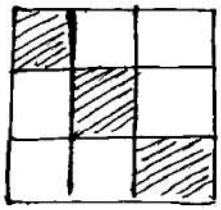
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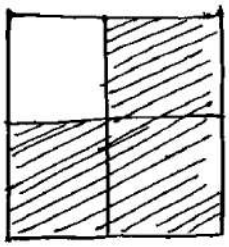
Q2 Write the fractions and match fractions in Column I with the equivalent fractions in Column II.

Column I.

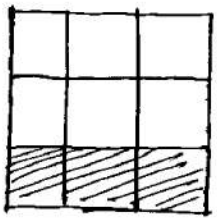
(i) 

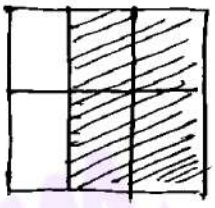
(ii) 

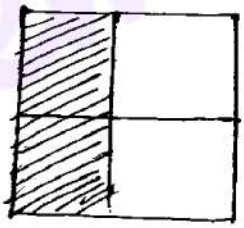
(iii) 

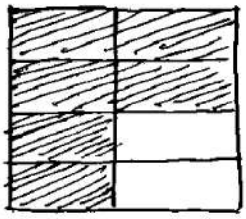
(iv) 

Column II

(a) 

(b) 

(c) 

(d) 

Solution

Column I

(i) $\frac{1}{2}$

(ii) $\frac{6}{9} = \frac{2}{3}$

(iii) $\frac{3}{9} = \frac{1}{3}$

(iv) $\frac{3}{4}$

Column II

(a) $\frac{3}{9} = \frac{1}{3}$

(b) $\frac{4}{6} = \frac{2}{3}$

(c) $\frac{2}{4} = \frac{1}{2}$

(d) $\frac{6}{8} = \frac{3}{4}$

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hence

(i) → (c) , (ii) → (b) (iii) → (a) (iv) → d

Q.3 Replace □ in each of the following by the correct number:

(i) $\frac{2}{7} = \frac{6}{\square}$ (ii) $\frac{5}{8} = \frac{10}{\square}$ (iii) $\frac{4}{5} = \frac{\square}{20}$

(iv) $\frac{45}{60} = \frac{15}{\square}$ (v) $\frac{18}{24} = \frac{\square}{4}$

Solution: (i) $\frac{2\times3}{7\times3} = \frac{6}{21}$ (ii) $\frac{5\times2}{8\times2} = \frac{10}{16}$

(iii) $\frac{4\times4}{5\times4} = \frac{16}{20}$ (iv) $\frac{45\div3}{60\div3} = \frac{15}{20}$

(v) $\frac{18\div6}{24\div6} = \frac{3}{4}$

Q.4 Find the equivalent fraction of $\frac{3}{5}$, having

(i) numerator = 9 (ii) denominator 30

(iii) numerator 21 (iv) denominator 40

Solution (i) fraction = $\frac{3}{5}$

$\because 3\times3 = 9$

$\therefore \frac{3\times3}{5\times3} = \frac{9}{15}$.

(ii) denominator 30

$\because 5\times6 = 30$

$\therefore$ required fraction is

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

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(iii) Numerator 21

$\because 3 \times 7 = 21$

$\therefore$ required fraction $= \frac{3 \times 7}{5 \times 7} = \frac{21}{35}$

(iv) Denominator 40

$\because 5 \times 8 = 40$

$\therefore$ required fraction $= \frac{3 \times 8}{5 \times 8} = \frac{24}{40}$

Q.5 Find the fraction equivalent to $\frac{45}{60}$, having

(i) numerator 15 (ii) denominator 4

(iii) denominator 240 (iv) numerator 135

Solution: given fraction $= \frac{45}{60}$

(i) numerator 15 ; As, we know $45 \div 3 = 15$

$\therefore$ fraction $= \frac{45 \div 3}{60 \div 3} = \frac{15}{20}$

(ii) denominator 4 $\because 60 \div 15 = 4$

$\therefore$ fraction $= \frac{45 \div 15}{60 \div 15} = \frac{3}{4}$

(iii) Denominator 240 $\because 60 \times 4 = 240$

$\therefore$ fraction $= \frac{45 \times 4}{60 \times 4} = \frac{180}{240}$

(iv) Numerator 135 $\because 45 \times 3 = 135$

$\therefore \frac{45 \times 3}{60 \times 3} = \frac{135}{180}$

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Q.6 Find the fraction equivalent to $\frac{35}{42}$, having:

(i) Numerator 15 (ii) denominator 18

(iii) denominator 30 (iv) numerator 30

Sol: given fraction $= \frac{35}{42} = \frac{35 \div 7}{42 \div 7} = \frac{5}{6}$

(i) Numerator 15

$\because 5 \times 3 = 15 \Rightarrow$ fraction $= \frac{5 \times 3}{6 \times 3} = \frac{15}{18}$

(ii) denominator 18

Again, $6 \times 3 = 18$

$\therefore$ fraction $= \frac{5 \times 3}{6 \times 3} = \frac{15}{18}$

(iii) denominator 30

since $6 \times 5 = 30$

$\therefore$ fraction $= \frac{5 \times 5}{6 \times 5} = \frac{25}{30}$

(iv) numerator 30 : since $5 \times 6 = 30$

$\therefore$ fraction $= \frac{5 \times 6}{6 \times 6} = \frac{30}{36}$

Q.7 Check whether the given fractions are equivalent or not.

(i) $\frac{5}{9}, \frac{30}{54}$ (ii) $\frac{2}{7}, \frac{16}{42}$ (iii) $\frac{7}{13}, \frac{5}{11}$ (iv) $\frac{4}{11}, \frac{32}{88}$

(v) $\frac{3}{10}, \frac{12}{50}$ (vi) $\frac{9}{27}, \frac{25}{75}$

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Solution (i) $\because \frac{5}{9} \times \frac{6}{6} = \frac{30}{54}$

Therefore $\frac{5}{9}, \frac{30}{54}$ are equivalent.

(ii) $\frac{2}{7} \times \frac{8}{8} = \frac{16}{56}$, Therefore $\frac{2}{7}, \frac{16}{42}$ are not equivalent.

(iii) $\frac{7}{13} \neq \frac{5}{11}$, Therefore, $\frac{7}{13}$ and $\frac{5}{11}$ are not equivalent.

(iv) $\frac{4}{11} \times \frac{8}{8} = \frac{32}{88}$, Therefore, $\frac{4}{11}$ and $\frac{32}{88}$ are equivalent.

(v) $\frac{3 \times 4}{10 \times 4} = \frac{12}{40}$, Therfore $\frac{3}{10}, \frac{12}{50}$ are not equivalent.

(vi) $\frac{9}{27}, \frac{25}{75}$ are not equivalent as $\frac{9}{27} = \frac{1}{3}$

also $\frac{25}{75} = \frac{1}{3}$

Q.8 Match the equivalent fractions and write another 2 for each.

(i) 225/400	(a) 2/3
(ii) 180/200	(b) 2/5
(iii) 660/990	(c) 1/2
(iv) 180/360	(d) 5/8
(v) 220/550	(e) 9/10

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Solution (i) $\frac{250 \div 50}{400 \div 50} = \frac{5}{8}$ $\therefore$ (i) $\rightarrow$ d

Two More equivalent fractions are

$\frac{250 \times 2}{400 \times 2} = \frac{500}{800}$ and $\frac{250 \times 3}{400 \times 3} = \frac{750}{1200}$

(ii) $\frac{180 \div 20}{200 \div 20} = \frac{9}{10}$ $\therefore$ (ii) $\rightarrow$ (e)

Two More equivalent fractions are

$\frac{180 \times 2}{200 \times 2} = \frac{360}{400}$ and $\frac{180 \times 3}{200 \times 3} = \frac{540}{600}$

(iii) $\frac{660 \div 330}{990 \div 330} = \frac{2}{3}$ $\therefore$ (iii) $\rightarrow$ (a)

Two More fractions are

$\frac{2}{3} \times \frac{2}{2} = \frac{4}{6}$ and $\frac{2}{3} \times \frac{3}{3} = \frac{6}{9}$

(iv) $\frac{180 \div 180}{360 \div 180} = \frac{1}{2}$ $\therefore$ (iv) $\rightarrow$ (c)

Two More fractions are

$\frac{1}{2} \times \frac{2}{2} = \frac{2}{4}$; $\frac{1}{2} \times \frac{3}{3} = \frac{3}{6}$

(v) $\frac{220 \div 110}{550 \div 110} = \frac{2}{5}$ $\therefore$ (v) $\rightarrow$ (b)

Two more fractions are

$\frac{2}{5} \times \frac{2}{2} = \frac{4}{10}$; $\frac{2 \times 3}{5 \times 3} = \frac{6}{15}$

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Q.9 Write Some equivalent fractions which Contain digits from 1 to 9 once only

Ans : Required equivalent fractions are

$$\frac{2}{6} = \frac{3}{9} = \frac{58}{174} \quad ; \quad \frac{2}{4} = \frac{3}{6} = \frac{79}{158}$$

Q.10 Ravish had 20 Pencils, Sikha had 50 Pencils and Priya had 80 Pencils. After 4 months, Ravish used up 10 Pencils, Shikha used up 25 Pencils and Priya used up 40 Pencils. What fraction did each use up? Check if each used up an equal fraction of their pencils.

Solution : Number of Pencils Ravish had = 20

Pencil used = 10

$\therefore$ fraction of Pencil used $= \frac{10}{20} = \frac{1}{2}$

Now, Number of Pencil Shikha had = 50

Pencils used = 25

$\therefore$ fraction of Pencil used $= \frac{25}{50} = \frac{1}{2}$

Also, Number of Pencils Priya had = 80

Pencils used = 40

$\therefore$ fraction of pencils used $= \frac{40}{80} = \frac{1}{2}$

Hence, Yes each one used Pencils in equal fraction.

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