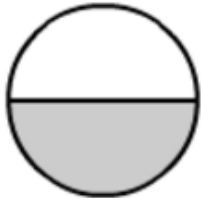


Exercise 6.5

Question: 1

(i)



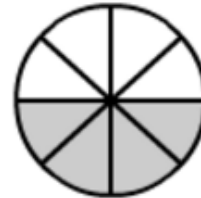
1 out of 2 parts
is shaded



2 out of 4 parts
are shaded

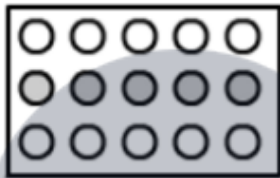


3 out of 6 parts
are shaded

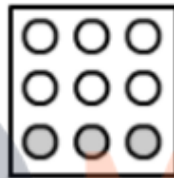


4 out of 8 parts
are shaded

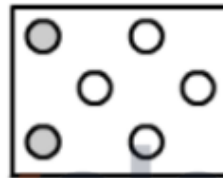
(ii)



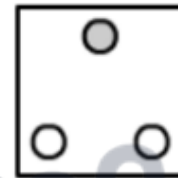
5 out of 15 parts
are shaded



3 out of 9 parts
are shaded



2 out of 6 parts
are shaded



1 out of 3 parts
is shaded

Solution:

(i)

$$\text{Fraction} = 1/2$$

$$\text{Fraction} = 2/4 = 1/2$$

$$\text{Fraction} = 3/6 = 1/2$$

$$\text{Fraction} = 4/8 = 1/2$$

Yes, they are equivalent

(ii)

$$\text{Fraction} = 5/15 = 1/3$$

$$\text{Fraction} = 3/9 = 1/3$$

$$\text{Fraction} = 2/6 = 1/3$$

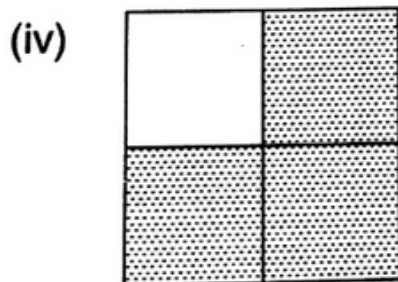
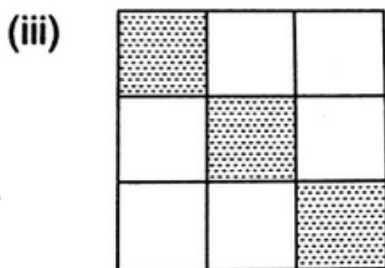
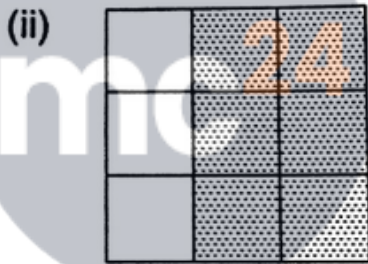
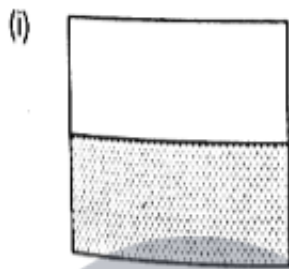
Fraction = $\frac{1}{3}$

Yes, they are equivalent

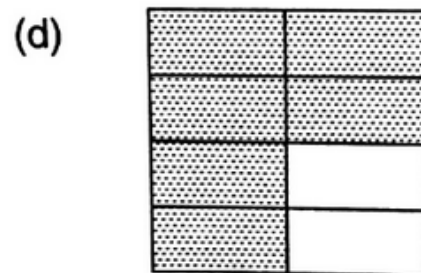
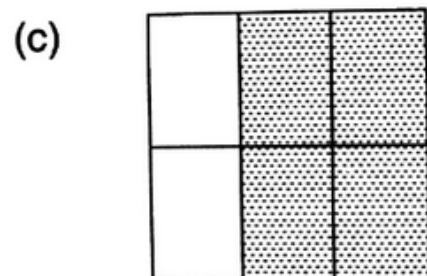
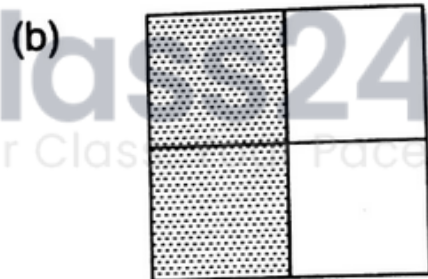
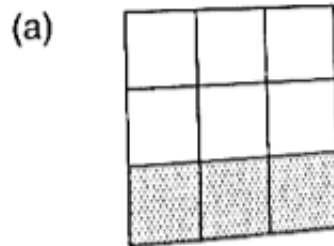
Question: 2

Write the fractions and match fractions in column I with the equivalent fractions in column II.

Column I



Column II



Solution:

(i) (b)

(ii) (c)

(iii) (a)

(iv) (d)

Question: 3

Replace * in each of the following by the correct number:

(i) $\frac{2}{7} = \frac{6}{*}$

(ii) $\frac{5}{8} = \frac{10}{*}$

(iii) $\frac{4}{5} = \frac{*}{20}$

(iv) $\frac{45}{60} = \frac{15}{*}$

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

Solution:

(i) $\frac{2}{7} = \frac{6}{21}$

(ii) $\frac{5}{8} = \frac{10}{16}$

(iii) $\frac{4}{5} = \frac{16}{20}$

(iv) $\frac{45}{60} = \frac{15}{20}$

(v) $\frac{18}{24} = \frac{3}{8}$

Question: 4

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

(i) Numerator 9

(ii) Denominator 30

(iii) Denominator 21

(iv) Numerator 40

Solution:



(i) $3/5 = 9$

Consider the numerator = 9

As $3 \times 3 = 9$, we will multiply both the numerator and denominator by 3, we have

$$3/5 \times 3/3 = 9/15$$

(ii) $3/5 = 30$

Consider the denominator = 30

As $5 \times 6 = 30$, we multiply both the numerator and denominator by 6, we have

$$3/5 \times 6/6 = 18/30 = 3/5$$

(iii) $3/5 = 21$

Consider the denominator = 21

As $3 \times 7 = 21$, we multiply both the numerator and denominator by 7, we have

$$3/5 \times 7/7 = 21/35$$

(iv) $3/5 = 40$

Consider the numerator = 40

As $5 \times 8 = 40$, we multiply both the numerator and denominator by 8, we have

$$3/5 \times 8/8 = 24/40$$

Question: 5

Find the fraction equivalent to $45/60$, having:

(i) Numerator 15

(ii) Denominator 4

(iii) Denominator 240

(iv) Numerator 135

Solution:

(i) $45/60 = 15$

Consider the numerator = 15

As $45 \div 3 = 15$, we will divide both the numerator and denominator by 3, we have,

$$45/60 \div 3/3 = 15/20$$

(ii) $45/60 = 4$

Consider the denominator = 4

As $60 \div 15 = 4$, We divide both the numerator and denominator by 15, we have ,

$$45/60 \div 15/15 = 3/4$$

(iii) $45/60 = 240$

Consider the denominator = 240

As $60 \times 4 = 240$, we multiply both the numerator and denominator by 4, we have

$$45/60 \times 4/4 = 180/240$$

(iv) $45/60 = 135$

Consider the numerator = 135

As $45 \times 3 = 135$, we multiply both the numerator and denominator by 3, we have

$$45/60 \times 3/3 = 135/180$$

Question: 6

Find the fraction equivalent to $35/42$, having:

(i) Numerator 15

(ii) Denominator 18

(iii) Denominator 30

(iv) Numerator 30

Solution:

Firstly, we will reduce $35/42$ into the lowest term. Now, we will divide both the numerator and denominator by the HCFs of 35 and 42, i.e 7, we have

$$35/42 \div 7/7 = 5/6$$

(i) $5/6 = 15$

Consider the numerator = 15

As $5 \times 3 = 15$, we will multiply both the numerator and denominator by 3, we have

$$5/6 \times 3/3 = 15/18$$

(ii) $5/6 = 18$

Consider the denominator = 18

As $6 \times 3 = 18$, we multiply both the numerator and denominator by 3, we have

$$5/6 \times 3/3 = 15/18$$

(iii) $5/6 = 30$

Consider the denominator = 30

As $6 \times 5 = 30$, we multiply both the numerator and denominator by 5, we have

$$5/6 \times 5/5 = 25/30$$

(iv) $5/6 = 30$

Consider the numerator = 30

As $5 \times 6 = 30$, we multiply both the numerator and denominator by 6, we have

$$5/6 \times 6/6 = 30/36$$

Question: 7

Check whether the given fractions are equivalent:

(i) $5/9, 30/54$

(ii) $2/7, 16/42$

(iii) $7/13, 5/11$

(iv) $4/11, 32/88$

(v) $3/10, 12/50$

(vi) $9/27, 25/75$

Solution:

(i) $5/9 \times 6/6 = 30/54$

Hence, the given fractions are equivalent

(ii) $2/7 \times 8/8 = 16/42$

27 is not equivalent to 16/42

(iii) $7/13 \times 5/5 = 35/65$

$5/11 \times 7/7 = 35/77$

7/13 is not equivalent to 5/11

(iv) $4/11 \times 8/8 = 32/88$

4/11 is equivalent to 32/88

(v) $3/10 \times 4/4 = 12/50$

3/10 is not equivalent 12/50

(vi) $9/27 \times 13/13 = 25/75$

9/27 is equivalent 25/75

Question: 8

Match the equivalent fractions and write another 2 for each:

(i) 250/400	(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

Solution:

The correct matches for the above question are given below:

(i) (d), 250/400, 5/8

(ii) (e), 180/200, 9/10

(iii) (a), 660/990, 2/3

(iv) (c), $180/360$, $1/2$

(v) (b), $220/550$, $2/5$

Question: 9

Write some equivalent fractions which contain all digits from 1 to 9 once only.

Solution:

$$2/6 = 3/9 = 58/174, 2/4 = 3/6 = 79/158$$

Question: 10

Ravish had 20 pencils, sikha had 50 pencils and priya had 80 pencils. After 4 months, Ravish used up 10 pencils, sikha used up 25 pencils and priya used 40 pencils. What fraction did each use up? Check if each has used up an equal fraction of their pencils?

Solution:

Total pencils Ravish had = 20

Pencils used by Ravish = 10

Fraction of pencils used by ravish = $10 \div 10/20 \div 10 = 12$ (Dividing both the numerator &

denominator by the HCFs of 10 & 20) Total pencils Shikha had = 50 Pencils used by

Shikha = 25 Fraction of pencils used by Shikha = $25 \div 25/50 \div 25 = 12$ (Dividing both the numerator & denominator by the HCFs of 25 & 50)

Total pencils Priya had = 80

Pencils used by Priya = 40

Fraction of pencils used by Priya = $40 \div 40/80 \div 40 = 12$ (Dividing both the numerator

& denominator by the HCFs of 40 & 80)

Yes, each of them has utilized an equal fraction of pencils.