CBSE Class –VII Mathematics NCERT
Solutions
Chapter 2 Fractions and Decimals (Ex. 2.2)
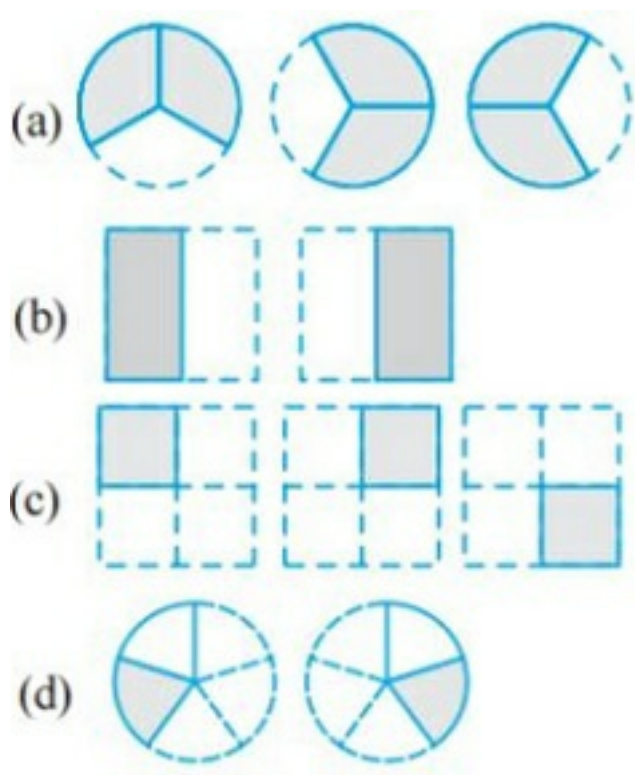
**Question 1. Which of the drawings (a) to (d) show:**

(i) $2 \times \frac{1}{5}$

(ii) $2 \times \frac{1}{2}$

(iii) $3 \times \frac{2}{3}$

(iv) $3 \times \frac{1}{4}$



**Answer**: (i) – (d) Since $2 \times \frac{1}{5} = \frac{1}{5} + \frac{1}{5}$

(ii) – (b) Since $2 \times \frac{1}{2} = \frac{1}{2} + \frac{1}{2}$

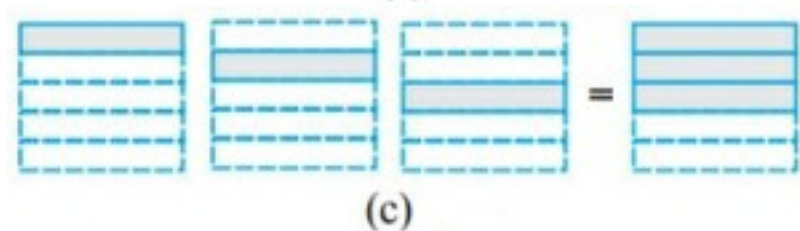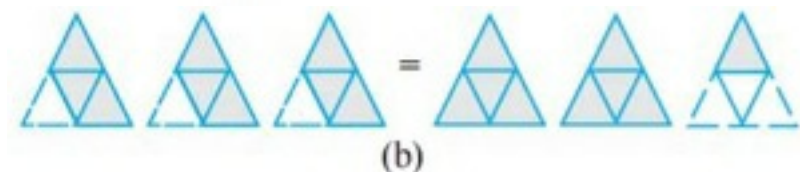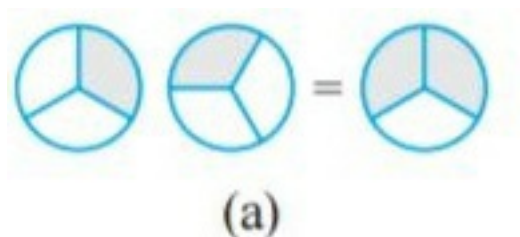(iii) – (a) Since $3 \times \frac{2}{3} = \frac{2}{3} + \frac{2}{3} + \frac{2}{3}$

(iv) – (c) Since $3 \times \frac{1}{4} = \frac{1}{4} + \frac{1}{4} + \frac{1}{4}$

**Question 2. Some pictures (a) to (c) are given below. Tell which of them show:**

(i) $3 \times \frac{1}{5} = \frac{3}{5}$

(ii) $2 \times \frac{1}{3} = \frac{2}{3}$

(iii) $3 \times \frac{3}{4} = 2\frac{1}{4}$



(a)



(b)



(c)

**Answer**: (i) – (c) Since $3 \times \frac{1}{5} = \frac{1}{5} + \frac{1}{5} + \frac{1}{5}$

(ii) – (a) Since $2 \times \frac{1}{3} = \frac{1}{3} + \frac{1}{3}$

(iii) – (b) Since $3 \times \frac{3}{4} = \frac{3}{4} + \frac{3}{4} + \frac{3}{4}$

---

**Question 3. Multiply and reduce to lowest form and convert into a mixed fraction:**

(i) $7 \times \frac{3}{5}$

(ii) $4 \times \frac{1}{3}$

(iii) $2 \times \frac{6}{7}$

(iv) $5 \times \frac{2}{9}$

(v) $\frac{2}{3} \times 4$

(vi) $\frac{5}{2} \times 6$

(vii) $11 \times \frac{4}{7}$

(viii) $20 \times \frac{4}{5}$

(ix) $13 \times \frac{1}{3}$

(x) $15 \times \frac{3}{5}$

**Answer**: (i) $7 \times \frac{3}{5}$ = $\frac{7 \times 3}{5}$ = $\frac{21}{5}$ = $4\frac{1}{5}$

(ii) $4 \times \frac{1}{3}$ = $\frac{4 \times 1}{3}$ = $\frac{4}{3}$ = $1\frac{1}{3}$

(iii) $2 \times \frac{6}{7}$ = $\frac{2 \times 6}{7}$ = $\frac{12}{7}$ = $1\frac{5}{7}$

(iv) $5 \times \frac{2}{9}$ = $\frac{5 \times 2}{9}$ = $\frac{10}{9}$ = $1\frac{1}{9}$

(v) $\frac{2}{3} \times 4$ = $\frac{2 \times 4}{3}$ = $\frac{8}{3}$ = $2\frac{2}{3}$

(vi) $\frac{5}{2} \times 6$ = $5 \times 3$ = 15

(vii) $11 \times \frac{4}{7}$ = $\frac{11 \times 4}{7}$ = $\frac{44}{7}$ = $6\frac{2}{7}$

(viii) $20 \times \frac{4}{5}$ = 4 x 4 = 16

(ix) $13 \times \frac{1}{3}$ = $\frac{13 \times 1}{3}$ = $\frac{13}{3}$ = $4\frac{1}{3}$
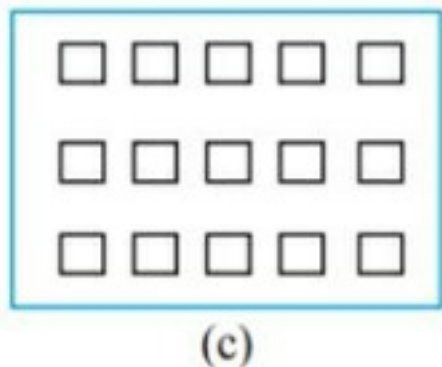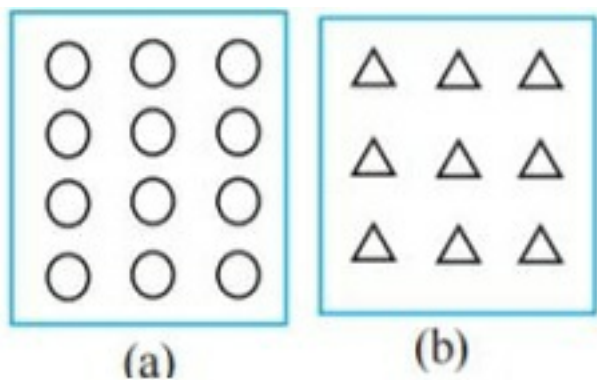
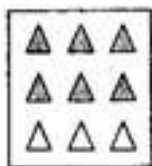(x) $15 \times \frac{3}{5}$ = 3 x 3 = 9

---

**Question 4**. Shade:

(i) $\frac{2}{3}$ of the triangles in box (a)
(ii) $\frac{3}{5}$ of the squares in box (b)
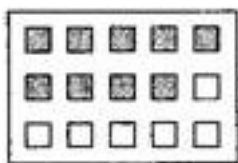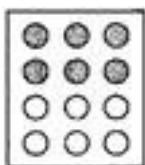(i) $\frac{1}{2}$ of the circles in box (c)

(a)     (b)



(c)

**Answer**: (i) $\frac{2}{3}$ of 9 triangles = $\frac{2}{3} \times 9$ = 2 x 3 = 6 triangles



(ii) $\frac{3}{5}$ of 15 squares = $\frac{3}{5} \times 15$ = 3 x 3 = 9 squares



(iii) $\frac{1}{2}$ of 12 circles = $\frac{1}{2} \times 12$ = 6 circles



**Question 5.** Find:

(a) $\frac{1}{2}$ of (i) 24 (ii) 46

(b) $\frac{2}{3}$ of (i) 18 (ii) 27

(c) $\frac{3}{4}$ of (i) 16 (ii) 36

(d) $\frac{4}{5}$ of (i) 20 (ii) 35

**Answer:** (a)

(i) $\frac{1}{2}$ of 24 = 12

(ii) $\frac{1}{2}$ of 46 = 23

(b)

(i) $\frac{2}{3}$ of 18 = $\frac{2}{3} \times 18$ = 2 x 6 = 12

(ii) $\frac{2}{3}$ of 27 = $\frac{2}{3} \times 27$ = 2 x 9 = 18

(c)

(i) $\frac{3}{4}$ of 16 = $\frac{3}{4} \times 16$ = 3 x 4 = 12

(ii) $\frac{3}{4}$ of 36 = $\frac{3}{4} \times 36$ = 3 x 9 = 27

(d)

(i) $\frac{4}{5}$ of 20 = $\frac{4}{5} \times 20$ = 4 x 4 = 16

(ii) $\frac{4}{5}$ of 35 = $\frac{4}{5} \times 35$ = 4 x 7 = 28

**Question 6.** Multiply and express as a mixed fraction:

(a) $3 \times 5\frac{1}{5}$

(b) $5 \times 6\frac{3}{4}$

(c) $7 \times 2\frac{1}{4}$

(d) $4 \times 6\frac{1}{3}$

(e) $3\frac{1}{4} \times 6$

(f) $3\frac{2}{5} \times 8$

**Answer**: (a) $3 \times 5\frac{1}{5} = 3 \times \frac{26}{5} = \frac{3 \times 26}{5} = \frac{78}{5} = 15\frac{3}{5}$

(b) $5 \times 6\frac{3}{4} = 5 \times \frac{27}{4} = \frac{5 \times 27}{4} = \frac{135}{4} = 33\frac{3}{4}$

(c) $7 \times 2\frac{1}{4} = 7 \times \frac{9}{4} = \frac{7 \times 9}{4} = \frac{63}{4} = 15\frac{3}{4}$

(d) $4 \times 6\frac{1}{3} = 4 \times \frac{19}{3} = \frac{4 \times 19}{3} = \frac{76}{3} = 25\frac{1}{3}$

(e) $3\frac{1}{4} \times 6 = \frac{13}{4} \times 6 = \frac{13 \times 3}{2} = \frac{39}{2} = 19\frac{1}{2}$

(f) $3\frac{2}{5} \times 8 = \frac{17}{5} \times 8 = \frac{17 \times 8}{5} = \frac{136}{5} = 27\frac{1}{5}$

**Question 7.** Find:

(a) $\frac{1}{2}$ of (i) $2\frac{3}{4}$ (ii) $4\frac{2}{9}$

(b) $\frac{5}{8}$ of (i) $3\frac{5}{6}$ (ii) $9\frac{2}{3}$

**Answer**: (a)

(i) $\frac{1}{2} of 2\frac{3}{4} = \frac{1}{2} \times \frac{11}{4} = \frac{11}{8} = 1\frac{3}{8}$

(ii) $\frac{1}{2} of 4\frac{2}{9} = \frac{1}{2} \times \frac{38}{9} = \frac{19}{9} = 2\frac{1}{9}$

(b)

(i) $\frac{5}{8} of 3\frac{5}{6} = \frac{5}{8} \times \frac{23}{6} = \frac{115}{48} = 2\frac{19}{48}$

(ii) $\frac{5}{8} of 9\frac{2}{3} = \frac{5}{8} \times \frac{29}{3} = \frac{145}{24} = 6\frac{1}{24}$

**Question 8.** Vidya and Pratap went for a picnic. Their mother gave them a water bottle that contained 5 litres of water. Vidya consumed $\frac{2}{5}$ of the water. Pratap consumed the remaining water.

(i) How much water did Vidya drink?

(ii) What fraction of the total quantity of water did Pratap drink?

**Answer**: Given: Total quantity of water in bottle = 5 litres

(i) Vidya consumed = $\frac{2}{5}$ of 5 litres = $\frac{2}{5} \times 5$ = 2 litres

Thus, Vidya drank 2 litres water from the bottle.

(ii) Pratap consumed = $\left(1 - \frac{2}{5}\right)$ part of bottle = $\frac{5-2}{5} = \frac{3}{5}$ part of bottle

Pratap consumed $\frac{3}{5}$ of 5 litres water = $\frac{3}{5} \times 5$ = 3 litres

Thus, Pratap drank $\frac{3}{5}$ part of the total quantity of water.