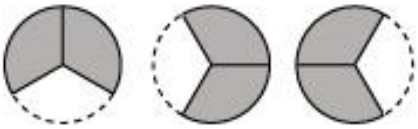
NCERT Solutions For Class 7 Maths Fractions and DecimalsExercise 2.2

Q1. Which of the drawings (a) to (d) show:

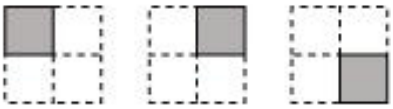
(i) $2\times\frac{1}{5}$ (ii) $2\times\frac{1}{2}$ (iii) $3\times\frac{2}{3}$ (iv) $3\times\frac{1}{4}$

(a)

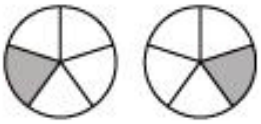


(b)

(c)



(d)



Ans:

(i) $2\times\frac{1}{5}$ represents addition of 2 figures, each representing 1 shaded part out of 5 equal parts.

Hence, $2\times\frac{1}{5}$ is represented by (d).

(ii) $2\times\frac{1}{2}$ represents addition of 2 figures, each representing 1 shaded part out of 2 equal parts.

Hence, $2\times\frac{1}{2}$ is represented by (b).

(iii) $3\times\frac{2}{3}$ represents addition of 3 figures, each representing 2 shaded parts out of 3 equal parts.

Hence, $3\times\frac{2}{3}$ is represented by (a).

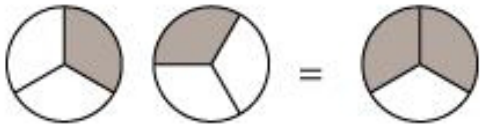
(iv) $3\times\frac{1}{4}$ represents addition of 3 figures, each representing 1 shaded part out of 4 equal parts.

Hence, $3\times\frac{1}{4}$ is represented by (c).

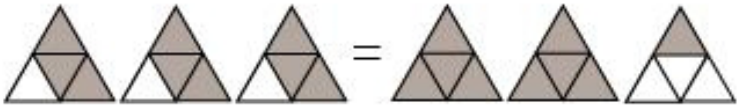
Q2. Some pictures (a) to (c) are given below. Tell which of them show:

(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)

Ans:

(i) $3\times\frac{1}{5}$ represents the addition of 3 figures, each representing 1 shaded part out of 5 equal parts and $\frac{3}{5}$ represents 3 shaded parts out of 5 equal parts. Hence, $3\times\frac{1}{5}=\frac{3}{5}$ is represented by (c).

(ii) $2\times\frac{1}{3}$ represents the addition of 2 figures, each representing 1 shaded part out of 3 equal parts and $\frac{2}{3}$ represents 2 shaded parts out of 3 equal parts. Hence, $2\times\frac{1}{3}=\frac{2}{3}$ is represented by (a).

(iii) $3\times\frac{3}{4}$ represents the addition of 3 figures, each representing 3 shaded parts out of 4 equal parts and $2\frac{1}{4}$ represents 2 fully shaded figures and one figure having 1 part as shaded out of 4 equal parts. Hence, $3\times\frac{3}{4}=2\frac{1}{4}$ is represented by (b)

Q3. 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) $\frac{2}{3}\times4$ (vi) $\frac{5}{2}\times6$ (vii) $11\times\frac{4}{7}$ (viii) $20\times\frac{4}{5}$

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

Ans:

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

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

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

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

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

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

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

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

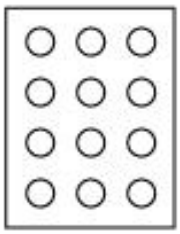
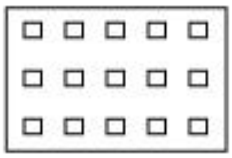
(ix) $13 \times \frac{1}{3} = \frac{13}{3} = 4\frac{1}{3}$

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

Q4. Shade:

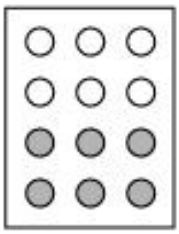
(i) $\frac{1}{2}$ of the circles in box (a) (ii) $\frac{2}{3}$ of the triangles in box (b)

(iii) $\frac{3}{5}$ of the squares in box (c)

		
(a)	(b)	(c)

Ans:

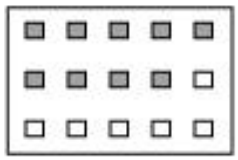
(i) It can be observed that there are 12 circles in the given box. We have to shade $\frac{1}{2}$ of the circles in it. As $12 \times \frac{1}{2} = 6$, therefore, we will shade any 6 circles of it.



(ii) It can be observed that there are 9 triangles in the given box. We have to shade $\frac{2}{3}$ of the

triangles in it. As $9 \times \frac{2}{3} = 6$, therefore, we will shade any 6 triangles of it.

(iii) It can be observed that there are 15 squares in the given box. We have to shade $\frac{3}{5}$ of the squares in it. As $\frac{3}{5} \times 15 = 9$, therefore, we will shade any 9 squares of it.



Q5. 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

Ans:

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

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

(b) (i) $\frac{2}{3} \times 18 = 12$

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

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

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

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

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

Q6. 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) $3\frac{2}{5} \times 8$

Ans:

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

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

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

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

(e) $3\frac{1}{4} \times 6 = \frac{13}{4} \times 6 = \frac{78}{4} = \frac{39}{2} = 19\frac{1}{2}$

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

Q7. 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) $9\frac{2}{3}$

Ans:

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

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

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

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

Q8. 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?

Ans:

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

$= \frac{2}{5} \times 5 = 2$ litres

(ii) Water consumed by Pratap $= 1 - \frac{2}{5} = \frac{3}{5}$ of the total water

********** END **********