CLASS NOTES-ANSWERS

EXERCISE 2.2

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. $2 \times \frac{1}{5}$ represents (d)

ii. $2 \times \frac{1}{2}$ represents (b)

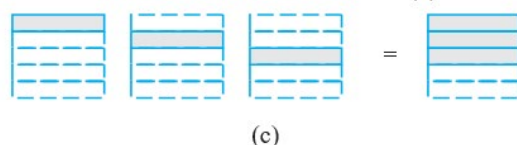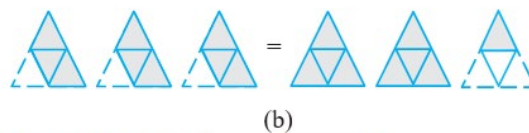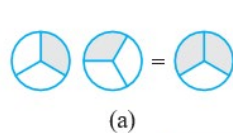iii. $3 \times \frac{2}{3}$ represents (a)

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

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. $3 \times \frac{3}{4} = 2\frac{1}{4}$

Answer: i. $3 \times \frac{1}{5} = \frac{3}{5}$ represents (c)

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

iii. $3 \times \frac{3}{4} = 2\frac{1}{4} = \frac{9}{4}$ represents (b)

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. $7 \times \frac{3}{5} = \frac{21}{5} = 4\frac{1}{5}$

ii. $4 \times \frac{1}{3} = \frac{4}{3} = 1\frac{1}{3}$

iii. $2 \times \frac{6}{7} = \frac{12}{7} = 1\frac{1}{3}$

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. $\frac{5}{2} \times 6 = \frac{30}{2} = 15$

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

viii. $20 \times \frac{4}{5} = \frac{80}{5} = 16$

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

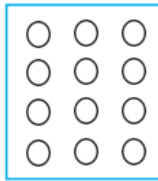x. $15 \times \frac{3}{5} = \frac{45}{5} = 9$

4. Shade:

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

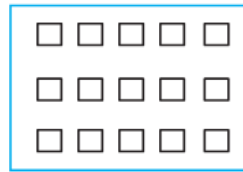   (ii) $\frac{2}{3}$ of the triangles in box (b)

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

(a)   (b)   (c)

Answer: (i) $\frac{1}{2}$ of the circles = $\frac{1}{2}$ × 12 = 6 circles are to be shaded.

(ii) $\frac{2}{3}$ of the triangles = $\frac{2}{3}$ × 9 = 6 triangles are to be shaded.

(iii) $\frac{3}{5}$ of the squares = $\frac{3}{5}$ × 15 = 9 squares are to be shaded.

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 = $\frac{1}{2}$ × 24 = 12

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

   b. (i) $\frac{2}{3}$ of 18 = $\frac{2}{3}$ × 18 = 12

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

   c. (i) $\frac{3}{4}$ of 16 = $\frac{3}{4}$ × 16 = 12

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

   d. (i) $\frac{4}{5}$ of 20 = $\frac{4}{5}$ × 20 = 16

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

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. $3 \times 5\frac{1}{5} = 3 \times \frac{26}{5} = \frac{78}{5} = 15\frac{3}{5}$

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. $3\frac{1}{4} \times 6 = \frac{13}{4} \times 6 = \frac{13 \times 3}{2} = \frac{39}{2} = 19\frac{1}{2}$

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

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 $4\frac{2}{9} = \frac{1}{2} \times \frac{38}{9} = \frac{38}{18} = \frac{19}{9} = 2\frac{1}{9}$

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

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:

Total quantity of water in a bottle = 5 liters

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

Thus, Vidya consumed 2 liters of water.

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

Thus, $\frac{3}{5}$ of the total water is consumed by Pratap.