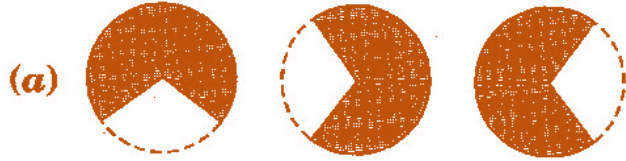


Exercise 2.2

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 1:

(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 $3 \times \frac{1}{4} = \frac{1}{4} + \frac{1}{4} + \frac{1}{4}$

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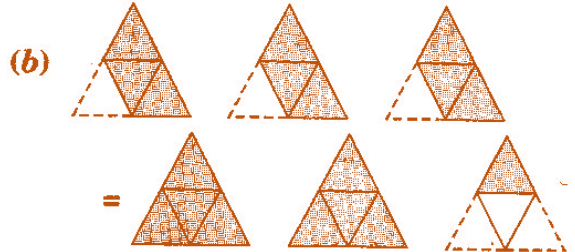
Question 2:

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

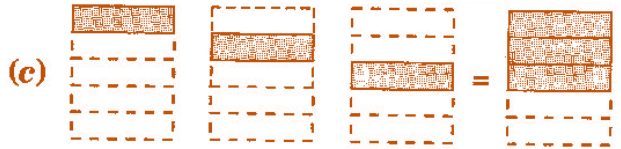
(i) $3 \times \frac{1}{5} = \frac{3}{5}$



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



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



Answer 2:

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

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Answer 3:

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

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

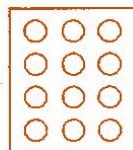
(x) $15 \times \frac{3}{5} = 3 \times 3 = 9$

Question 4:

Shade:

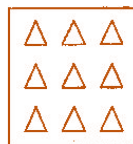
(i) $\frac{1}{2}$ of the circles in box

(a)



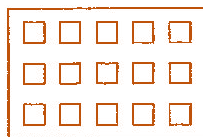
(ii) $\frac{2}{3}$ of the triangles in box

(b)



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

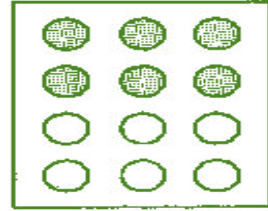
(c)



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Answer 4:

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



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



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



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 5:

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

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

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

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

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

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

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

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

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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 6:

(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 7:

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

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

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

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

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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 8:

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.