

Chapter-9  
Ex-9 (A)

b)  $\frac{4}{5} = \frac{8}{10}, \frac{12}{15}, \frac{16}{20}, \frac{20}{25}$

$\frac{4 \times 2}{5 \times 2} = \frac{8}{10}$

$\frac{4 \times 3}{5 \times 3} = \frac{12}{15}$

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

$\frac{4 \times 5}{5 \times 5} = \frac{20}{25}$

d)  $\frac{2}{11} = \frac{4}{22}, \frac{6}{33}, \frac{8}{44}, \frac{10}{55}$

$\frac{2 \times 2}{11 \times 2} = \frac{4}{22}$

$\frac{2 \times 3}{11 \times 3} = \frac{6}{33}$

$\frac{2 \times 4}{11 \times 4} = \frac{8}{44}$

$\frac{2 \times 5}{11 \times 5} = \frac{10}{55}$

2 a)  $\frac{1}{5} = \frac{4}{20}$  d)  $\frac{2}{14} = \frac{1}{7}$

f)  $\frac{18}{54} = \frac{9}{27}$  g)  $\frac{20}{31} = \frac{60}{93}$

j)  $\frac{11}{15} = \frac{44}{60}$  l)  $\frac{16}{64} = \frac{1}{4}$

m)  $\frac{11}{12} = \frac{55}{60}$  o)  $\frac{14}{15} = \frac{98}{105}$

3 a)  $\frac{68}{136} = \frac{1}{2}$

c)  $\frac{153}{204} = \frac{3}{4}$

e)  $\frac{154}{238} = \frac{11}{17}$

f)  $\frac{198}{297} = \frac{2}{3}$

h)  $\frac{304}{368} = \frac{19}{23}$

j)  $\frac{80}{160} = \frac{2}{9}$

4 a)  $\frac{13}{16} \rightarrow$  Proper Fraction

c)  $\frac{17}{8} \rightarrow$  Improper Fraction

e)  $\frac{38}{4} \rightarrow$  Improper fraction

$$\begin{array}{l} \underline{5} \text{ a) } \frac{21}{6} \overline{) 21} \begin{array}{l} 3 \\ 18 \\ \hline 3 \end{array} \\ = 3 \frac{3^1}{2} = 3 \frac{1}{2} \end{array}$$

$$\begin{array}{l} \text{i) } \frac{305}{85} \overline{) 305} \begin{array}{l} 3 \\ 255 \\ \hline 50 \end{array} \\ = 3 \frac{50^{10}}{85} = 3 \frac{10}{17} \end{array}$$

$$\begin{array}{l} \text{c) } \frac{123}{6} \overline{) 123} \begin{array}{l} 20 \\ 12 \\ \hline 3 \end{array} \\ = 20 \frac{3^1}{2} = 20 \frac{1}{2} \end{array}$$

$$\begin{array}{l} \frac{6}{x} \text{ a) } 14 \frac{3}{4} \\ = \frac{(14 \times 4) + 3}{4} = \frac{59}{4} \end{array}$$

$$\begin{array}{l} \text{c) } 24 \frac{5}{7} \\ = \frac{(24 \times 7) + 5}{7} = \frac{173}{7} \end{array}$$

$$\begin{array}{l} \text{e) } \frac{105}{14} \overline{) 105} \begin{array}{l} 7 \\ 98 \\ \hline 7 \end{array} \\ = 7 \frac{7^1}{2} = 7 \frac{1}{2} \end{array}$$

$$\begin{array}{l} \text{e) } 48 \frac{5}{8} \\ = \frac{(48 \times 8) + 5}{8} = \frac{389}{8} \end{array}$$

$$\begin{array}{l} \text{f) } \frac{223}{18} \overline{) 223} \begin{array}{l} 12 \\ 18 \\ \hline 43 \\ 36 \\ \hline 7 \end{array} \\ = 12 \frac{7}{18} \end{array}$$

$$\begin{array}{l} \text{g) } 28 \frac{5}{6} \\ = \frac{(28 \times 6) + 5}{6} = \frac{173}{6} \end{array}$$

$$\begin{array}{l} \text{i) } 100 \frac{3}{4} \\ = \frac{(100 \times 4) + 3}{4} = \frac{403}{4} \end{array}$$

$$\begin{array}{l} \text{h) } \frac{614}{24} \overline{) 614} \begin{array}{l} 25 \\ 48 \\ \hline 134 \\ 120 \\ \hline 14 \end{array} \\ = 25 \frac{14^7}{24_{12}} = 25 \frac{7}{12} \end{array}$$



$$\frac{9}{a} \rightarrow \frac{5}{14} < \frac{5}{8} \quad c) \frac{15}{19} > \frac{15}{23} \quad 8) \frac{67}{79} < \frac{72}{79}$$

$$h) \frac{32}{39} > \frac{27}{39}$$

$$\frac{10}{b} \rightarrow \frac{8}{9} > \frac{5}{6} \quad d) \frac{11}{12} > \frac{8}{9}$$

$$8 \times 6 = 48 > 9 \times 5 = 45$$

$$11 \times 9 = 99 > 12 \times 8 = 96$$

$$f) 5\frac{2}{7} > \frac{41}{8}$$

$$h) 16\frac{3}{5} > 16\frac{4}{7}$$

$$= \frac{37}{7} - \frac{41}{8}$$

$$\frac{83}{5} - \frac{116}{7}$$

$$= \frac{37 \times 8}{56} - \frac{41 \times 7}{56} = \frac{296}{56} > \frac{287}{56}$$

$$= \frac{83 \times 7}{35} - \frac{116 \times 5}{35} = \frac{581}{35} > \frac{580}{35}$$

$$\frac{11}{a} \rightarrow \frac{11}{13}, \frac{11}{17}, \frac{11}{15}$$

$$c) \frac{8}{17}, \frac{16}{17}, \frac{15}{17}$$

$$\Rightarrow \frac{11}{17} < \frac{11}{15} < \frac{11}{13}$$

$$\Rightarrow \frac{8}{17} < \frac{15}{17} < \frac{16}{17}$$

$$j) \frac{7}{12}, \frac{5}{6}, \frac{2}{3}$$

$$g) \frac{7}{10}, \frac{2}{3}, \frac{11}{24}$$

$$L.C.M = 12$$

$$L.C.M = 120$$

$$\frac{7 \times 1}{12 \times 1}, \frac{5 \times 2}{6 \times 2}, \frac{2 \times 4}{3 \times 4}$$

$$\frac{7 \times 12}{10 \times 12}, \frac{2 \times 40}{3 \times 40}, \frac{11 \times 5}{24 \times 5}$$

$$= \frac{7}{12}, \frac{10}{12}, \frac{8}{12}$$

$$= \frac{84}{120}, \frac{80}{120}, \frac{55}{120}$$

$$= \frac{7}{12} < \frac{8}{12} < \frac{10}{12}$$

$$= \frac{55}{120} < \frac{80}{120} < \frac{84}{120}$$

$$= \frac{7}{12} < \frac{2}{3} < \frac{5}{6} \text{ (Ans)}$$

$$= \frac{11}{24} < \frac{2}{3} < \frac{7}{10}$$

$$L.C.M = 2 \mid 10, 3, 24 \\ 3 \mid 5, 3, 12 \\ 5, 1, 4 \\ = 2 \times 3 \times 5 \times 4 \\ = 120$$

$$\frac{12}{b)} \quad \frac{5}{8}, \frac{3}{16}, \frac{3}{4}$$

$$L.C.M = 16$$

$$\frac{5 \times 2}{8 \times 2}, \frac{3 \times 1}{16 \times 1}, \frac{3 \times 4}{4 \times 4}$$

$$= \frac{10}{16}, \frac{3}{16}, \frac{12}{16}$$

$$= \frac{12}{16} > \frac{10}{16} > \frac{3}{16}$$

$$= \frac{3}{4} > \frac{5}{8} > \frac{3}{16} \text{ (Ans)}$$

$$d) \quad \frac{5}{14}, \frac{7}{9}, \frac{2}{3}$$

$$= \frac{5 \times 9}{14 \times 9}, \frac{7 \times 14}{9 \times 14}, \frac{2 \times 42}{3 \times 42}$$

$$= \frac{45}{126}, \frac{98}{126}, \frac{84}{126}$$

$$= \frac{98}{126} > \frac{84}{126} > \frac{45}{126}$$

$$= \frac{7}{9} > \frac{2}{3} > \frac{5}{14}$$

$$3 \overline{) 14, 9, 3}$$

$$14, 3, 1$$

$$= 14 \times 3 \times 3$$

$$= 126$$

$$f) \quad \frac{25}{27}, \frac{8}{9}, \frac{15}{18}$$

$$L.C.M = 54$$

$$\frac{25 \times 2}{27 \times 2}, \frac{8 \times 6}{9 \times 6}, \frac{15 \times 3}{18 \times 3}$$

$$= \frac{50}{54}, \frac{48}{54}, \frac{45}{54}$$

$$= \frac{50}{54} > \frac{48}{54} > \frac{45}{54}$$

$$= \frac{25}{27} > \frac{8}{9} > \frac{15}{18}$$

$$h) \quad \frac{11}{17}, \frac{1}{4}, \frac{1}{2}$$

$$L.C.M = 68$$

$$\frac{11 \times 4}{17 \times 4}, \frac{1 \times 17}{4 \times 17}, \frac{1 \times 34}{2 \times 34}$$

$$= \frac{44}{68}, \frac{17}{68}, \frac{34}{68}$$

$$= \frac{44}{68} > \frac{34}{68} > \frac{17}{68}$$

$$= \frac{11}{17} > \frac{1}{2} > \frac{1}{4} \text{ (Ans)}$$

$$2 \overline{) 17, 4, 2}$$

$$17, 2, 1$$

$$= 17 \times 2 \times 2 = 68$$



# Ex-9 (B)

$$a) \frac{5}{6} + \frac{7}{12}$$

L.C.M = 12

$$= \frac{5 \times 2}{6 \times 2} + \frac{7 \times 1}{12 \times 1}$$

$$= \frac{10+7}{12} = \frac{17}{12} = 1\frac{5}{12}$$

$$c) \frac{5}{6} + \frac{7}{12} + \frac{5}{24}$$

L.C.M = 24

$$= \frac{5 \times 4}{6 \times 4} + \frac{7 \times 2}{12 \times 2} + \frac{5 \times 1}{24 \times 1}$$

$$= \frac{20+14+5}{24}$$

$$= \frac{39}{24} \left| \begin{array}{r} 39 \\ 24 \\ \hline 15 \end{array} \right| 1$$

$$= 1\frac{15}{24} = 1\frac{5}{8} \text{ (Ans)}$$

$$e) \frac{5}{16} + \frac{7}{10} + \frac{2}{5}$$

L.C.M = 80

L.C.M  
2, 16, 10, 5  
5, 8, 5, 5  
8, 1, 1

$$= \frac{5 \times 5}{16 \times 5} + \frac{7 \times 8}{10 \times 8} + \frac{2 \times 16}{5 \times 16}$$

$$= \frac{25+56+32}{80} = \frac{113}{80} \left| \begin{array}{r} 113 \\ 80 \\ \hline 33 \end{array} \right| 1$$

$$= 1\frac{33}{80}$$

$$h) 3\frac{1}{3} + 7\frac{5}{6} + 5\frac{1}{2}$$

$$= \frac{10}{3} + \frac{47}{6} + \frac{11}{2}$$

L.C.M = 6

$$= \frac{10 \times 2}{3 \times 2} + \frac{47 \times 1}{6 \times 1} + \frac{11 \times 3}{2 \times 3}$$

$$= \frac{20+47+33}{6}$$

$$= \frac{100}{6} \left| \begin{array}{r} 100 \\ 6 \\ \hline 40 \\ 36 \\ \hline 4 \end{array} \right| 16$$

$$= 16\frac{4}{3}$$

$$= 16\frac{2}{3}$$

$$i) 6\frac{5}{14} + 20 + 7\frac{3}{7} + 8\frac{7}{12}$$

$$= \frac{89}{14} + \frac{20}{1} + \frac{52}{7} + \frac{103}{12}$$

7, 14, 7, 12  
2, 7, 1, 12  
1, 1, 6

L.C.M = 84

$$= \frac{89 \times 6}{14 \times 6} + \frac{20 \times 84}{1 \times 84} + \frac{52 \times 12}{7 \times 12} + \frac{103 \times 7}{12 \times 7}$$

$$= \frac{534 + 1680 + 624 + 721}{84} = \frac{3559}{84} \left| \begin{array}{r} 3559 \\ 84 \\ \hline 336 \\ 199 \\ 168 \\ \hline 31 \end{array} \right| 42$$

$$= 42\frac{31}{84}$$

$$= 42\frac{31}{84}$$

$$\textcircled{a} \quad \frac{8}{15} - \frac{4}{9}$$

$$\text{L.C.M} = 45$$

$$= \frac{(8 \times 3) - (4 \times 5)}{45}$$

$$= \frac{24 - 20}{45} = \frac{4}{45}$$

$$c) \quad \frac{13}{17} - \frac{7}{10}$$

$$\text{L.C.M} = 170$$

$$= \frac{(13 \times 10) - (7 \times 17)}{170}$$

$$= \frac{130 - 119}{170} = \frac{11}{170}$$

$$f) \quad \frac{16}{27} - \frac{7}{18}$$

$$\text{L.C.M} = 54$$

$$= \frac{16 \times 2 - 7 \times 3}{54}$$

$$= \frac{32 - 21}{54} = \frac{11}{54}$$

$$h) \quad 6\frac{3}{17} - 4$$

$$= \frac{105}{17} - 4$$

$$= \frac{105 \times 1 - 4 \times 17}{17}$$

$$= \frac{105 - 68}{17} = \frac{37}{17} = 2\frac{3}{17}$$

$$i) \quad 30\frac{3}{4} - 25$$

$$= \frac{123}{4} - \frac{25}{1}$$

$$= \frac{(123 \times 1) - (25 \times 4)}{4}$$

$$= \frac{123 - 100}{4} = \frac{23}{4} = 5\frac{3}{4}$$

$$k) \quad 12\frac{7}{8} - 11\frac{1}{2}$$

$$= \frac{103}{8} - \frac{23}{2}$$

$$= \frac{103 \times 1 - 23 \times 4}{8}$$

$$= \frac{103 - 92}{8} = \frac{11}{8} = 1\frac{3}{8} \text{ (Ans)}$$

$$\frac{3}{4} \times \frac{7}{12} + \frac{9}{12} - \frac{5}{12}$$

$$= \frac{7+9-5}{12} = \frac{11}{12}$$

$$e) 8\frac{3}{4} + 7\frac{1}{2} - 3\frac{1}{4} - 2\frac{1}{2}$$

$$= \frac{35}{4} + \frac{15}{2} - \frac{13}{4} - \frac{5}{2}$$

$$= \frac{(35 \times 1) + (15 \times 2) - (13 \times 1) - (5 \times 2)}{4}$$

$$= \frac{35 + 30 - 13 - 10}{4}$$

$$= \frac{65 - 23}{4} = \frac{42}{4} = 10\frac{21}{2}$$

$$= 10\frac{1}{2}$$

$$g) 5\frac{5}{12} - 6 + 8 - 5\frac{3}{5}$$

$$= \frac{65}{12} - 6 + 8 - \frac{28}{5}$$

$$= \frac{(65 \times 5) - (6 \times 60) + (8 \times 60) - (28 \times 12)}{60}$$

$$= \frac{325 - 360 + 480 - 336}{60}$$

$$= \frac{325 + 480 - (360 + 336)}{60}$$

$$= \frac{805 - 696}{60} = \frac{109}{60} = 1\frac{49}{60}$$

$$c) \frac{5}{12} - \frac{2}{3} - \frac{1}{2} + \frac{7}{1}$$

$$\text{L.C.M} = 12$$

$$= \frac{(5 \times 1) - (2 \times 4) - (1 \times 6) + (7 \times 12)}{12}$$

$$= \frac{5 - 8 - 6 + 84}{12}$$

|     |    |
|-----|----|
| 84  | 8  |
| + 5 | 6  |
| 89  | 14 |

$$= \frac{89 - 14}{12}$$

$$= \frac{75}{12} = 6\frac{31}{124} = 6\frac{1}{4} \text{ (Ans)}$$

$$f) 25 - 20\frac{1}{2} + 15\frac{3}{5} - 5$$

$$= 25 - \frac{41}{2} + \frac{78}{5} - 5$$

$$= \frac{(25 \times 10) - (41 \times 5) + (78 \times 2) - (5 \times 10)}{10}$$

$$= \frac{250 - 205 + 156 - 50}{10}$$

$$= \frac{406 - 255}{10}$$

$$= \frac{151}{10} = 15\frac{1}{10} \text{ (Ans)}$$



### Ch-17

\* Perimeter of Rectangle =  $2 \times (\text{Length} + \text{Breadth})$

\* Perimeter of Square =  $(4 \times \text{Side}) \text{ m/cm}$

\* ~~Per~~

#### Ex-17(A)

1/ a) Length = 10m Breadth = 6m.

$$\begin{aligned}\therefore \text{Perimeter of Rectangle} &= 2 \times (\text{Length} + \text{Breadth}) \\ &= 2 \times (10 + 6) \text{ m} \\ &= 2 \times 16 \text{ m} = 32 \text{ m (Ans)}\end{aligned}$$

b)  $L = 6\frac{1}{2} \text{ cm} = \frac{13}{2} \text{ cm}$      $B = 5\frac{3}{4} \text{ cm} = \frac{23}{4} \text{ cm}$

$$\begin{aligned}\therefore \text{Perimeter of Rectangle} &= 2 \times (L + B) \\ &= 2 \times \left( \frac{13}{2} + \frac{23}{4} \right) \\ &= 2 \times \left( \frac{26 + 23}{4} \right) \\ &= 2 \times \frac{49}{4} = \frac{49}{2} = 24\frac{1}{2} \text{ cm (Ans)}\end{aligned}$$

d)  $L = 1 \text{ m } 20 \text{ cm}$      $B = 60 \text{ cm}$   
 $= 120 \text{ cm}$

$$\begin{aligned}\text{Perimeter of Rectangle} &= 2(L + B) \\ &= 2 \times (120 + 60) \text{ cm} \\ &= 2 \times 180 \\ &= 360 \text{ cm} \text{ @ } = \frac{360}{100} = 3 \text{ m } 60 \text{ cm}.\end{aligned}$$

e)  $L = 12.5 \text{ m}$      $B = 5.5 \text{ m}$   
 $= 1250 \text{ cm}$

$$\begin{aligned}\text{Perimeter of Rectangle} &= 2(L + B) \\ &= 2(1250 + 5.5) \text{ cm} \\ &= 2 \times 1255.5 \text{ cm} \\ &= 2511.0 \text{ cm} = \frac{2511}{100} = 25 \text{ m } 11 \text{ cm (Ans)}\end{aligned}$$



Ex-17(A)

8)  $L = 23.3 \text{ cm}$   $B = 7 \text{ cm}$

$$\begin{aligned}\text{Perimeter of Rectangle} &= 2(L+B) \\ &= 2(23.3 + 7) \text{ cm} \\ &= 2 \times 30.3 \text{ cm} \\ &= \underline{60.6 \text{ cm}}\end{aligned}$$

h)  $L = 5 \text{ m } 20 \text{ cm}$   $B = 42 \text{ cm}$   
 $= 520 \text{ cm}$

$$\begin{aligned}\text{Perimeter of Rectangle} &= 2(L+B) \\ &= 2(520 + 42) \text{ cm} \\ &= 2 \times 562 \text{ cm} \\ &= 1124 \text{ cm} = \frac{1124}{100} = 11 \text{ m } 24 \text{ cm}.\end{aligned}$$

2) Side =  $7.6 \text{ cm}$

$$\begin{aligned}\text{Perimeter of Square} &= 4 \times \text{Side} \\ &= 4 \times 7.6 \\ &= \underline{30.4 \text{ cm}}\end{aligned}$$

b) Side =  $18 \frac{2}{3} \text{ m}$   
 $= \frac{56}{3} \text{ m}$

$$\begin{aligned}\text{Perimeter of Square} &= 4 \times \text{Side} \\ &= 4 \times \frac{56}{3} = \frac{224}{3} = 74.66 \text{ m}.\end{aligned}$$

c) Side =  $13 \text{ m } 75 \text{ cm}$   
 $= 13.75 \text{ m}$

$$\begin{aligned}\text{Perimeter of Square} &= 4 \times \text{Side} \\ &= 4 \times 13.75 \text{ m} \\ &= \underline{55.00 \text{ m (Ans)}}\end{aligned}$$

3) Sides =  $6.3 \text{ cm}$ ,  $5 \text{ cm}$ ,  $4.7 \text{ cm}$

$$\begin{aligned}\text{Perimeter of triangle} &= \text{Side} + \text{Side} + \text{Side} \\ &= (6.3 + 5 + 4.7) \text{ cm} \\ &= \underline{16.0 \text{ cm}}\end{aligned}$$

4 Breadth =  $3\frac{1}{2} \text{ m} = \frac{7}{2} \text{ m}$ .

$$\text{Length} = 3 \times \text{Breadth} = 3 \times \frac{7}{2} = \frac{21}{2} \text{ m.}$$

$$\begin{aligned}\text{Perimeter of Rectangle} &= 2(L+B) \\ &= 2\left(\frac{21}{2} + \frac{7}{2}\right) \text{ m.}\end{aligned}$$

$$= 2 \times \frac{28}{2} = 2 \times 14 = 28 \text{ cm}$$

5 Length = 30m.

$$\text{Breadth} = 30 - 6 = 24 \text{ m.}$$

$$\begin{aligned}\text{Perimeter of the garden} &= 2(L+B) \\ &= 2(30+24) \text{ m} \\ &= 2 \times 54 \text{ m} \\ &= \underline{108 \text{ m}}\end{aligned}$$

6 side = 35m.

Ans Distance covered in going round the park once =  $4 \times \text{Side}$   
 $= 4 \times 35 = 140 \text{ m.}$

∴ Distance covered in going  
around 3 times  $= 140 \times 3$   
 $= \underline{420} \text{ m (Ans)}$

8. Distance covered in going round a square field twice = 48m.

u u n n u n u u 1 time =  $\frac{48}{2} = 24$  m

$$\therefore \text{side} = \frac{24}{4} = 6 \text{ m.}$$

∴ wire needed for fencing around the fence =  $4 \times \text{Side}$   
 $= 4 \times 6 = 24 \text{ m}$

∴ cost of wine =  $24 \times 1.75 = ₹42$ .

Ans = 6m, 24m, ₹ 42:



Ch-15  
GEOMETRY

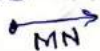
Define:-

1) Point :- A point shows definite position, that has no length, breadth and thickness and has no shape and size. It is represented by a  $(\cdot)$ .

2) Line :- A straight line that can be extended to any length on both side and has no breadth and thickness is called a line. It is represented as  $(\longleftrightarrow)$

3) Line segment :- A part of a line that has a fixed length is called a line segment. It is represented as  $\overline{AB}$

4) Ray :- A straight line that has a definite starting point and extends indefinitely in the other direction is called a ray.



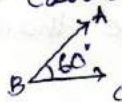
5) Angle :- The figure formed by two rays with the same initial point is called an angle.



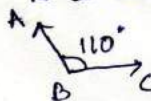
6) Vertex :- The common starting point of an angle is called the vertex.



7) Acute angle :- An angle that is less than  $90^\circ$  is called an acute angle.



8) Obtuse angle :- An angle that is more than  $90^\circ$  is called an obtuse angle.



9) Right Angle:- An angle that is equal to  $90^\circ$  is called right angle.

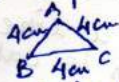


10) Straight angle:- An angle that is equal to  $180^\circ$  is called straight angle.



11) Perpendicular lines:- When two lines intersect each other at  $90^\circ$  are called perpendicular lines.

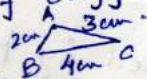
12) Equilateral triangle:- A triangle whose all three sides are equal in length is called an equilateral triangle.



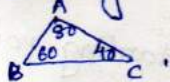
13) Isosceles triangle:- A triangle in which two of its sides are equal is called an isosceles triangle.



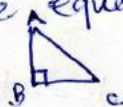
14) Scalene Triangle:- A triangle in which all the three sides are of different lengths is called a scalene triangle.



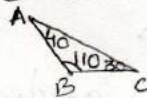
15) Acute triangle:- A triangle with all its interior angles measuring less than  $90^\circ$  is called an acute angle.



16) Right Triangle:- A triangle with one of its interior angle equal to  $90^\circ$  is called a right triangle.



17) Obtuse Triangle:- A triangle with one of its interior angle more than  $90^\circ$  is called an obtuse triangle.



18) The sum of all three angles in a triangle is equal to  $180^\circ$ .

19) Area of a triangle =  $\frac{1}{2} \times \text{Base} \times \text{Height}$ .