

RD SHARMA

Solutions

Class 8 Maths

Chapter 17

Ex 17.3

(1)

(i) True $AB = DC$ & $AD = BC$

(ii) False $AD \neq DC$

(iii) True

(iv) True

(v) false [Need not be]

(vi) false

(vii) True [$AC = BD$ & $AO = OC$; $DO = OB$]

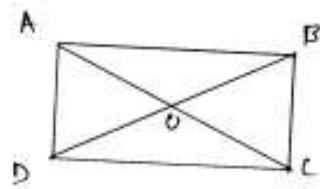
(viii) False [They are not \perp]

(ix) false [They possess different lengths]

(x) True

(xi) True

(xii) false [because all squares are parallelograms]



(2)

(i) True

(ii) True

(iii) True

(iv) false, (Diagonal = $\sqrt{2}$ x side)

(3)

(i) angles are right angles

(ii) angles are right angles

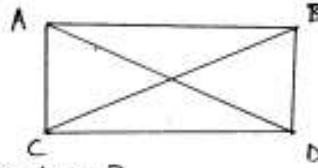
(iii) all sides are equal

④ No, In rectangle, the length of diagonals are equal and they do bisect each other.

⑤ Given Rectangle ABCD,

Here $AD = BC$

[Diagonals are of equal length in Rectangle]



$\angle BAC = \angle ACD = 90^\circ$ [Right angles]

$AC = AC$ = common sides

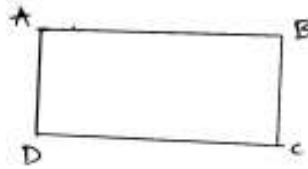
By S-A-S Congruency,

$$\boxed{\triangle ACB \cong \triangle CAD}$$

6) Let the Rectangle be ABCD

Given $AD:DC = 2:3$

$$\begin{aligned} \text{let } AD &= 2x \\ DC &= 3x \end{aligned}$$



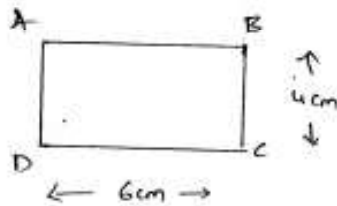
$$\begin{aligned} \text{Perimeter} &= 2(AD + DC) \\ &= 2[2x + 3x] \\ &= 10x \end{aligned}$$

But, given that perimeter is 20cm

$$\Rightarrow 10x = 20$$

$$\boxed{x = 2 \text{ cm}}$$

\Rightarrow Sides of Rectangle are 4cm and 6cm.



7) Let the Rectangle be ABCD

Given length : Breadth = 5:4

$$\text{let length} = 5x$$

$$\text{Breadth} = 4x$$



$$\begin{aligned} \text{Perimeter is given by } p &= 2(\text{length} + \text{breadth}) \\ &= 2(5x + 4x) \\ &= 18x \end{aligned}$$

But, given that perimeter is 90 cm

$$\Rightarrow 18x = 90$$

$$x = \frac{90}{18}$$

$$\boxed{x = 5}$$

Sides of Rectangle are given by = $5x, 4x, 5x, 4x$

$$= \underline{25 \text{ cm}, 20 \text{ cm}, 25 \text{ cm}, 20 \text{ cm}}$$

⑧

Given the Rectangle be ABCD

$$\text{Given } AD = 5 \text{ cm}$$

$$DC = 12 \text{ cm}$$

From $\Delta^c ADC$,

$$AD^2 + DC^2 = AC^2 \quad (\text{Hypotenuse theorem})$$

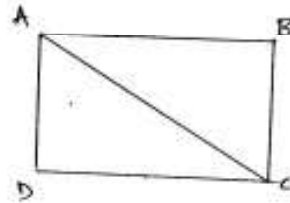
$$AC = \sqrt{5^2 + 12^2}$$

$$= \sqrt{25 + 144}$$

$$= \sqrt{169}$$

$$AC = 13 \text{ cm}$$

length of the diagonal = 13 cm

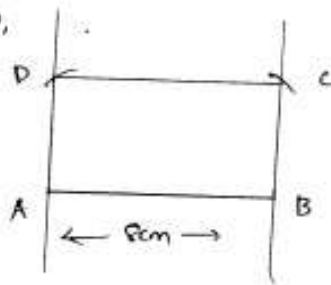


9) Sol :-

1) Draw a horizontal line $AB = 8\text{cm}$,

2) Draw vertical lines through
A & B.

3) with radius of 10cm , from
vertex A, cut an arc on
vertical line through B. The point of intersection
is named as 'c'.



4) with radius of 10cm , from vertex B, cut an arc
on vertical line through A. The point of
intersection is named as 'D'.

5) Join ABCD

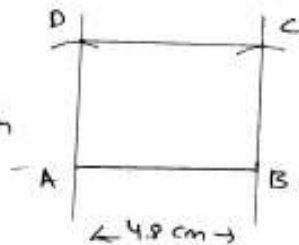
6) thus the required Rectangle ABCD is obtained

10) Sol :-

① Draw $AB = 4.8\text{cm}$, a horizontal
line

② Draw two vertical lines through
A and B.

③ with radius of 4.8cm , from
vertex A, cut a vertical line through 'A'. The
point of intersection is named as 'D'.



(4) With radius of 4.8 cm, from vertex B, cut a vertical line passing through 'B'. The part of intersection is named as 'c'.

(5) Join ABCD.

(6) Thus, the rectangle ABCD is formed.

(11)

(i) Four sides of equal length.

* Square

* Rhombus

(ii) Four right angles

* Square

* Rectangle

(12)

(i) A Square is always named as quadrilateral.

(ii) Opposite sides are parallel and equal

(iii) All sides are equal and opposite sides are parallel

(iv) Opposite sides are equal and each angle is right angle.

(13)

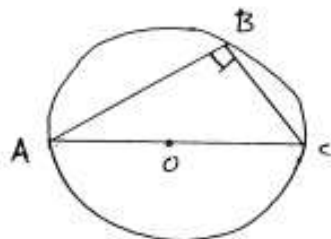
- (i) parallelogram, rectangle, rhombus, square
- (ii) Rhombus, square
- (iii) square, rectangle.

(14)

let us draw a line AC (hypotenuse)

→ Now, draw a circle with AC as diameter

→ If B is the point such that it makes 90° then,



$$OB = OA = OC = \text{radius.}$$

Hence proved.

(15)

- (i) By whether all the angles are equal to right angles
- (ii) By measuring the length of the diagonals