



Bank Job Lecture Sheet

Lecture 111

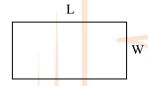
Lecture Contents

☑ Geometry (Quadrilateral)

Geometry (Quadrilateral)

চারটি বাহু দ্বারা সীমাবদ্ধ ক্ষেত্রকে চর্তুভুজ বলে । মোট ৫টি ।

(i) **Rectangle (আয়তক্ষেত্র):** বিপরীত বা**হুগুলো সমা**ন ও সমান্তরাল এবং প্রত্যেকটি কোণ 90°, তাকে আয়তক্ষেত্র বলে।



Length = L

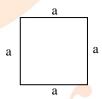
Width = W \cup C \subset

Area =
$$L \times W$$

$$\sqrt{L^2 + W^2}$$

Perimeter = 2(L + W)

(iii) **Square (বর্গক্ষেত্র):** চা<mark>রটি বাহু</mark> সমান এবং প্রত্যেকটি কোণ 90°, তাকে বর্গক্ষে<mark>ত্র বলে।</mark>



Area =
$$a \times a = a^2$$

Diagonal =
$$\sqrt{a^2 + a^2} = \sqrt{2a^2} = \sqrt{2}$$
 a

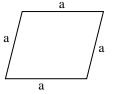
Perimeter = 4a

(ii) **Parallelogram (সামন্তরিক):** বিপরীত বাহুগুলো সমান ও সমান্তরাল এবং প্রত্যেকটি কোণ 90° নয়, তাকে সামন্তরিক বলে।



 $Area = Base \times Height$

(iv) **Rhombus (রম্বস):** চারটি বাহু সমান কিন্তু প্রক্যেটি কোণ 90° নয়, তাকে Rhombus বলে।





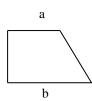
$$\mathbf{Area} = rac{1}{2} imes$$
 কর্ণদ্বয়ের গুণফল

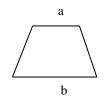
$$=\frac{1}{2} \times \text{Product of two diagonals}$$

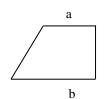
Perimeter = 4a

Note: রম্বসের কর্ণদ্বয় পরস্পরকে সমকোণে সমদ্বিখ-িত করে।

(v) **Trapezium (ট্রাপিজিয়াম):** যে চতুর্ভুজের দুটি বাহু সমান্তরাল তাকে ট্রাপিজিয়াম বলে।







 $\operatorname{Area} = rac{1}{2} imes$ সমান্তরাল বাহুদ্বয়ের যোগফল imes উচ্চতা

$$=\frac{1}{2}\times(a+b)\times h$$

Teacher's Discussion

- 1. The area of rectangle is 40 cm² and one of its sides is 8 cm long. What will be its perimeter? [Combined 8 Banks Officer- 2022]
 - A. 26 cm
- B. 13 cm
- C. 28 cm
- D. 20 cm

- Ans: A
- 2. If length and width of a rectangular plot were each increased by 20%, what would be the percentage increase in the area of the plot? [Combined 7 Bank Officer (Cash)-2023]
 - A. 20%
- B. 24%
- C. 36%
- D. 44%

- Ans: d
- 3. If a squire region has area n, what is the length of the diagonal of the square in terms of n? [Combined 7 Bank Officer (Cash)-2023]
 - A. $\sqrt{2\pi}$
- B. $\sqrt{\pi}$
- C. $2\sqrt{\pi}$
- $D.2\pi$

- Ans: b
- 4. If the base of a parallelogram is 8 and the height is 7 and perimeter is 24, what is the area of the parallelogram? [Combined 5 Banks Officer- 2022]
 - A. 32
- B. 96
- C. 66
- D. 56

- Ans: D
- 5. The perimeter of a rectangle is 20cm. If the length of the rectangle is 6 cm, then the breadth will be[Combined 9 Bank Senior Officer (General)-2023]
 - A. 4 cm
- B. 6 cm
- C. 10 cm
- D. 14 cm

- Ans: A
- 6. The area of a rhombus is 96 cm² and the length of one of the diagonals is 16 cm. The length of the other diagonal is- [Combined 7 Banks Senior Officer- 2021; Bangladesh Bank AD- 2018]
 - A. 18
- B. 12
- C. 9
- D. 6

- Ans: E
- 7. The width of a rectangle is 20 cm. The diagonal is 8 cm more than the length. Find the length of the rectangle. [Bangladesh Bank AD- 2021]
 - A. 20
- B. 23
- C. 22
- D. 21

- Ans: D
- 8. The perimeter of a rectangle is 104 inches. The width is 6 inches less than 3 times the length. Find the width of the rectangle. [Bangladesh Bank AD- 2021]
 - A. 13.5 inches
- B. 37.5 inches
- C. 14.5 inches
- D. 15 inches

- Ans: B
- 9. The length of a rectangular room is double of its breadth. If the area is 512 square inches, what is the perimeter (in feet)? [Uttara Bank, AO- 2022]
 - A. 4

- B. 6
- C. 8
- D. 12

A. Tk. 600

A. (x + 5) (x + 5)

C. Tk. 6000

B. (x-5)(x-5) C. (x+5)(x-5) D. x(x-25)

21. The area of a rectangular classroom is $x^2 - 25$. Which of the following binomials could represent the

D. Tk. 1600

B. Tk. 3000

length and the width of the room? [Bangladesh Bank AD- 2021]



- 22. The breadth of a rectangular field is 60% of its length. If the perimeter of the field is 800 m, what is the area of the field? [Bangladesh Bank Officer- 2016]
 - A. 35700 sq. m
- B. 40000 sq. m
- C. 48000 sq. m
- D. 18750 sq. m

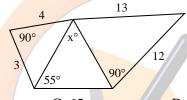
- Ans: A
- 23. A rectangle is 14 cm long and 10 cm wide. If the length is reduced by x cms and its width is increased also by x cms so as to make it a square, then its area changes by: [Bangladesh Bank AD- 2018]
 - A. 4

- B. 144
- C. 12
- D. 2

- Ans: A
- 24. The diagonal of a square is 2 cm. If a circle is inscribed in that square, what will be the area of that
 - A. $\frac{\pi}{4}$ cm²
- B. $\frac{\pi}{2}$ cm²
- C. $\frac{\pi}{8}$ cm²
- D. 4π cm²

Ans: B

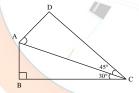
25. In the figure above, what is the value of x?



- A. 55
- C. 65
- D. 70

Ans: D

26. In the figure below, if BC = $\sqrt{6}$. What is the value of CD?



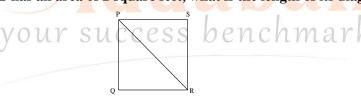
A. 2

- B. 4
- C. $\sqrt{2}$
- D. $2\sqrt{3}$

- Ans: B
- 27. What is the exact area (in square inch) of a square whose diagonal is 8 inches?
 - A. $8\sqrt{2}$
- B. $16\sqrt{2}$
- C. $32\sqrt{2}$
- D. 32

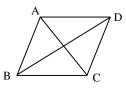
- Ans: D
- 28. The longest side of an isosceles right triangle measures 16m. What is the perimeter of the triangle?
 - A. 32 2 m
- B. $32 + 16\sqrt{2}$ m C. $16 + 16\sqrt{2}$ m D. $32 + \sqrt{2}$ m

- Ans: C
- 29. If a square region PQRS has an area of 2 square feet, what is the length of its diagonal (PR)?



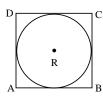
- A. 4 feet
- B. 2 feet
- C. 8 feet
- D. $2\sqrt{2}$ feet

- Ans: B
- 30. The rhombus ABCD has diagonals intersecting at X, with BC = 13 cm and CX = 5 cm. Calculate the area of the rhombus cm²



- A. 65
- B. 90
- C. 120
- D. 130

31. If the area of the circle R is a, then the area of the square ABCD in the figure above is:



A. πa^2

 $B. a^2$

D. $\frac{4a^2}{\pi}$

Ans: C

32. A rectangular floor that measures 8 meters by 10 meters is to be covered with carpet that each measure 2 meters by 2 meters. If the carpet cost Tk. 12 a piece, what is the total cost to cover the floor? [Combined 9 Banks Officer- 20221

A. Tk. 200

B. Tk. 240

C. Tk. 480

D. Tk. 960

Ans: B

33. The ratio of the length to the width of a rectangular advertising display is approximately 3.3 to 2. If the width of the display is 8 meters, what is the approximate length of the display, in meters? [Combined 9 Banks Officer- 2022]

A. 7

B. 11

C. 13

D. 16

Ans: C

34. The breadth of a rectangular field is 5 m. Its length is thrice the breadth. What is the total length of fencing required if the fence is to be built leaving 0.5 m of space from each side?

A. 56 m

B. 70 m

C. 44 m

D. 36m

Ans: D

35. The percentage increase in the area of a rectangle, if each of its sides is increased by 20%, is:

A. 40%

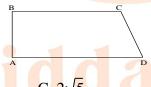
B. 42%

C. 44%

D. 46%

Ans: C

36. In the below figure, ABCD has area equal to 28. BC is parallel to AD. BA is perpendicular to AD. If BC is 6 and AD is 8 then what is CD?



A. $2\sqrt{2}$

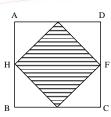
B. $2\sqrt{3}$

C. $2\sqrt{5}$

D. 4

Ans: C

37. ABCD is a square with AB = 23 cm. If BE = CF = GD = AH = 9 cm. Find the area of the shaded region



A. 169

B. 256

C. 277

D. 312

Ans: C

38. The length and breadth of a square are increased by 40% and 30% respectively. The area of the resulting rectangle exceeds the area of the square by:

A. 42

B. 62

C. 82

D. 70







Student's Drill

1.	The diagonal of a rec	- '	_	m. The perimeter of the i	rectangle must be:			
	A. 9cm	B. 18cm	C. 20cm	D. 41cm	Ans: B			
2.	The difference between	n the length and brea	adth of a rectangle is	23 m. If its perimeter is 2	06 m, then its area is:			
	A. 1520m ²	B. 2420m ²	C. $2480m^2$	D. 2520m ²	Ans: D			
3.	A picture in an art n	nuseum is 6 feet wi	de and 8 feet long.	If its frame has a width	of 6 inches, what is			
	the ratio of the area	of the frame to the	area of the picture	?				
	, 5	B. $\frac{5}{4}$	4	5				
	A. $\frac{5}{16}$	B. -	$C. \frac{1}{5}$	D. $\frac{12}{12}$	Ans: A			
4.	A certain triangle ha	as sides that are res	spectively 6, 8 and	10 inches long. A rectar	ngle equal in area to			
	=		= -	rimeter of the rectangle	-			
	A. 11	B. 16	C. 22	D. 24	Ans: C			
5.	The length of a recta	ingle is 16 <mark>feet lon</mark> ge	er than it <mark>s bre</mark> adth.	. Given that its p <mark>erimet</mark> e	er is 152 feet, what is			
	the breadth of the re	ectangle i <mark>n feet?</mark>						
	A. 12	B. 24	C. 30	D. 20	Ans: C			
6.	A picture is copied o	nto a she <mark>et of p</mark> ape	r, which me <mark>asures</mark> (8.5 inches by 10 inches.	A border of 1.5 inch			
	is left all around. W	hat is the <mark>area,</mark> in so	quare inches, cover	ed by the picture?				
	A. 76	B. 65	C. 38.5	D. 59.5	Ans: C			
7.	The area of a rectan	gle is 460 <mark>square</mark> m	netres. If the length	is 15% more t <mark>han the</mark>	breadth, what is the			
	breadth of the rectar	ngular field?						
	A. 15 metres	B. 26 metres	C. 34.5 metres	D. 20 metres	Ans: D			
8.	The area of a rectang	g <mark>ular field is 1,000 s</mark>	<mark>square meters. If th</mark>	ne length of the field is 40	0 meters, what is the			
	perimeter of the field	<mark>d</mark> in square m <mark>e</mark> ters?						
	A. 25	B. 135	C. 165	D. 130	Ans: D			
9.	How many squares	o <mark>f 2 inch dim</mark> ension	n will be required t	o cover a rectangle of 8	inch breadth and 6			
	inch length?							
	A. 7	B. 24		D. none of these	Ans: C			
10.	J			<mark>th</mark> e cost of cultivating th	-			
	-		-	eters, of the rectangular				
	A. 32			ep.40 hmarl				
11.	The sides of a rectangular floor are 16 feet by 24 feet. When a rectangular carpet is placed on the floor,							
	₹/·	_		the area of the carpet in	-			
	A. 320	B. 128	C. 352	D. 240	Ans: B			
12.		=		l sides by a concrete wa	alk 5 feet wide. Find			
	the number of squar			D 4700				
	A. 160	B. 1600	C. 1000	D. 1500	Ans: B			
13.		_	-	perimeter of the rectang				
	=		-	agonal of the rectangle?				
1.4	A. 12	B. 13	C. 23	D. 31	Ans: B			
14.	The ratio between the perimeter and the breadth of a rectangular is 5 : 1. If the area of the rectangle is 216 cm, what is the length of the rectangle?							
		=	=	D 22 am	4 5			
	A. 16 cm	B. 18 cm	C. 20 cm	D. 22 cm	Ans: B			
Page-116								

- 15. If the perimeter of a certain rectangle is 76m and its area is 360m², then what is the length of its shortest side?
 - A. 18
- B. 15
- C. 13
- D. 10

- Ans: A
- 16. The length of a rectangular plot is 20 meters more than its breadth. If the cost of fencing the plot at 26.50 per meter is Tk. 5300, what is the length of the plot in meters?
 - A. 50 m
- B. 55 m
- C. 58 m
- D. 60 m

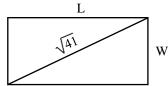
- Ans: D
- 17. How many bricks, each measuring 25cm x 11.25cm x 6cm, will be needed to build a wall of 8m x 6m x 22.5m?
 - A. 5600
- B. 6000
- C. 640000
- D. 7200

- Ans: C
- 18. The difference between the length and the breadth of a blackboard is 8 cm. If the breadth is decreased by 4 cm and the length is increased by 7 cm, the area remains the same. Find the dimension of the blackboard?
 - A. 30, 22
- B. 28, 20
- C. 34, 26
- D. 56, 48

Ans: B

Solution of Student's Drill

1. **Solution:**



$$LW = 20$$

$$L^2 + W^2 = (\sqrt{41})^2$$

$$\Rightarrow$$
 (L + W)² – 2LW = 41

$$\Rightarrow (L + W)^2 = 81$$

$$\Rightarrow$$
 L + W = 9

$$\therefore L - W = \sqrt{(L - W)^2}$$

$$= \sqrt{(L + W)^2 - 4LW}$$

$$= \sqrt{9^2 - 4 \times 20}$$

$$= \sqrt{1}$$

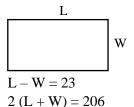
$$\therefore L + W = 9$$

$$\Rightarrow$$
 L – W = 1

$$\Rightarrow$$
 L = $\frac{9+1}{2}$ = 5

$$\Rightarrow$$
 W = $\frac{9-1}{2}$ = 4

2. **Solution:**

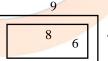


 $\Rightarrow L + W = 103$ $\therefore L = \frac{103 - 23}{2} = 63$

$$W = \frac{103 - 23}{2} = 40$$

$$LW = 63 \times 40 = 2520$$
 (Ans.)

3. **Solution:**



6 inch = .5 feet

$$\frac{\text{Area (Frame)}}{\text{Area (Pic)}} = \frac{9 \times 7 - 8 \times 6}{8 \times 6}$$

$$=\frac{63-48}{48}=\frac{15}{48}=\frac{5}{16}$$
 (Ans.)

your success Solution:

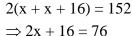


 $\begin{array}{c|c}
x = 8 \\
\hline
24 \\
\end{array}$

$$\Delta = \frac{1}{2} \times 6 \times 8 = 24$$

$$\therefore$$
 P = 2(8 + 3) = 22 (Ans.)

5. Solution:





x = 16



8.5 5.5

Area (pic) =
$$7 \times 5.5 = 38.5$$
 (Ans.)

7. **Solution:**

$$\begin{array}{c|c}
x \times 1.15 \\
\hline
460 & x
\end{array}$$

1.15x × x = 460

$$\Rightarrow x^{2} = \frac{460 \times 100}{1.15} = 400$$

$$\Rightarrow x = \sqrt{400} = 20 \text{ (Ans.)}$$

8. **Solution:**

40

1000

$$\therefore LW = 1000$$

$$\Rightarrow W = \frac{1000}{40} = 25$$

$$\therefore$$
 Peri = 2(40 + 25) = 130 (Ans.)

9. **Solution:**

Number of Squares = $\frac{48}{4}$ = 12 (Ans.)

10. **Solution:**

$$4x^2 \times 20 = 1280$$
$$\Rightarrow x^2 = 16 \therefore x = 4$$

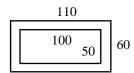
$$\therefore$$
 Peri = 2(16 + 4) = 40 (**Ans.**)

11. **Solution:**

carpet 8

Area (carpet) =
$$16 \times 8 = 128$$
 (Ans.)

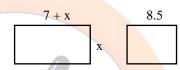
12. **Solution:**



Area of walk =
$$110 \times 60 - 100 \times 50$$

= $6600 - 5000$
= 1600 (Ans.)

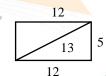
13. **Solution:**



$$\therefore 2(7 + x +) = 4 \times 8.5$$

$$\Rightarrow 7 + 2x = 17$$

$$\Rightarrow 2x = 10 \quad \therefore x = 5$$



Ans: 13

Solution: 14.

1.5x

$$1.5x \times x = 216$$

$$216 \times 10$$

your success
$$\Rightarrow x^2 = \frac{216 \times 10}{15}$$

 $\Rightarrow x^2 = 144$ $\therefore x = 12$

$$\Rightarrow x^2 = 144 \quad \therefore \ x = 12$$

∴ length =
$$1.5x$$

= $1.5 \times 12 = 18$ (Ans.)

15. **Solution:**

2(L + W) = 76 \Rightarrow L + W = 38

$$\therefore 20 \times \boxed{18} = 360$$

Ans: 18

16. **Solution:**

$$2(20 + x + x) = 200$$

$$\Rightarrow$$
 20 + 2x = 100

$$\Rightarrow 2x = 80 \Rightarrow x = 40$$

$$\therefore L = 20 + 40 = 60$$

$$W = 40$$
; Area = $60 \times 40 = 2400$

∴ Total cost =
$$2400 \times 20$$

= 48000 Tk. (Ans.)

Solution: 17.

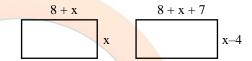
No. of bricks

$$= \frac{8 \times 100 \text{cm} \times 6 \times 100 \text{cm} \times 22.5 \times 100 \text{cm}}{25 \text{cm} \times 11.25 \text{ cm} \times 6 \text{cm}}$$

$$= \frac{800 \times 600 \times 2250 \times 100}{25 \times 1125 \times 6}$$

= 640000 (Ans.)

Solution: 18.



$$x \times (8 + x) = (8 + x + 7)(x - 4)$$

$$\Rightarrow$$
 $x^2 + 8x = 13x - 60 + x^2 - 4x$

$$\Rightarrow 8x = 11x - 60 = 60$$

$$\therefore 3x = 60 \implies x = 20$$

 \therefore Dimension of the blackboard = 28, 20 (Ans.)



Home Practice

The perimeter of a rectangle is 40. One of the sides is 5. Find the lengths of the other sides. 1.

A. 10, 10, 10

B. 5, 10, 10

C. 5, 15, 15

D. 10, 15, 15

Ans: C

2. The length of a plot is 80 m and the breadth are 60 m. A pond was excavated in the plot. If the width of each side of the border around the pond is 4 meters, determine the area of the border of the pond.

[BUP (FBS): 2021-22]

A. 1000 m²

 $B.1056 \text{ m}^2$ SUC. 1028 m^2 D. 1065 m^2 V

Ans: B

The length of rectangle ABCD is $\frac{6}{5}$ th of its breadth. Its perimeter is 132. What is its area? [BUP (FBS): **3.**

2021-22]

A. 660 m^2

B. 2210 m²

C. 2160 m²

D. 1080 m^2

Ans: D

4. The measurement of a rectangle is 16 feet by 12 feet. What is the area of the smallest circle that can cover this rectangle entirely so that no part of the rectangle is outside the circle? [BB Officer-2022]

A. 10π sq. ft

B. 100π sq. ft

C. 192π sq. ft

D. 128π sq. ft

Ans: B

The perimeter of rectangle is 200 meter. The breadth is $\frac{3}{7}$ part of the length. What is the length? [BB 5.

Officer- 2022]

A. 30m

B. 50 m

C. 70 m

D. 60 m



11 ■	Lecture Sheet	Bar	nk Job Lecture She	et (Math)	iddabafi your success benchmark			
6.	Rahim wants to cut a rectanular board into identical square pieces. If the board is 18 inches by 30 inches. What is the least number of square pieces he can cut without wasting any of the board? [GIBL, PO- 2022]							
	A. 4	B. 6	C. 9	D. 15	Ans: D			
7.	What would be the Ltd. Officer (Cash)-	=	erimeter of a square	whose area is equal to 25	6 sq. cm? [Janata Bank			
	A. 16 cm	B. 36 cm	C. 64 cm	D. 256 cm	Ans: C			
8.	<u> </u>	o .		the rectangle. [Sonali Ban D. 2:1	9			
9.		length is incre <mark>ased</mark>		plackboard is 8 cm. If the remains the same. Find to				
10.	<u> </u>	<u> </u>		y o <mark>f 2 m</mark> width on ev <mark>ery s</mark>				
	of the garden, in A. 5684	B. 6000	uding the walkway C. 5376	? [Combined 3 Banks SO- 20 D. 5123	Ans: C			
11.	The length of a re	ectangular p <mark>lot is 2</mark>	0 meters more than	n its breadth. If the cost of lot in meters? [Combined 8] D. 50	f fencing the plot Tk.			
12.	half the width of [BB Officer- 2018]	rectangle B, what	is the ratio of the a	ctangle B, and the width or the area of rectangle A to the	area of rectangle B?			
	A. $\frac{1}{4}$	B. $\frac{1}{2}$	C. $\frac{1}{1}$	$D.\frac{2}{1}$	Ans: A			
13.		om <mark>bus is 54 sq. cm</mark> - [BKB Cash-2017; B		one of the diagonals is 6 o	m. The length of the			
	A. 18			ben P. hmar	Ans: A			
14.	The width of a re	ect <mark>angle is 20 cm. T</mark>		n more than the length. F				

rectangle. [BB AD 2021] — A 20 B. 23

C. 22

D. 21

Ans: D