MENSURATION

Direction: Read the following questions carefully and choose the right answer.

- 1. If the length of a rectangle is increased by 25% and the breadth is reduced by 33.33%
then what will be the effect on its diagonal(approximately)?A. 7.6%B. 8.33%C. 6%D. 7.33%E. No Change
- 2. If the area of square is 256 cm² and the breadth of rectangle is 20% more and the length is 50% more than the side of the square, then find the ratio of area of square to the area of rectangle.

A. 4 : 5 B. 3 : 4 C. 3 : 7 D. 5 : 9 E. 4 : 9

The perimeter of rectangle of length 2 (x + 3) cm and breadth 2 (x + 1) cm is double the perimeter of a square of area 225 cm². Find the area of rectangle.
 A. 728 cm²
 B. 896 cm²
 C. 1024 cm²
 D. 1156 cm²
 E. 1596 cm²

4. P and Q are running on the circumference of two concentric circles, the radius of larger circle is half of the circumference of inner circle. P runs on larger and Q on smaller circle and both complete a round in same time. If both of them run on the larger circle P will beat Q by 75m when they run in the same direction, what is the circumference of the larger circle?

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A. 145 m B. 165 m C. 110 m D. 225 m E. None of these
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5. The difference between the area of a circle and the area of the rectangle is 394.94 cm². If the length of rectangle is 25% more and breadth is 10% less than the radius of the circle, then find the perimeter of the rectangle? (Take $\pi = 3.14$) A. 70.14 cm B. 66.2 cm C. 60.2 cm D. 75.02 cm E. 62.2 cm

6. The length of a rectangle, area of which is 126 cm², is equal to the radius of a circle of area 616 cm². What is the perimeter of the rectangle?

 A. 42 cm
 B. 54 cm
 C. 46 cm
 D. 52 cm
 E. None of these

7. A track of width 1.5 m is made along the inside edge of a rectangular park of dimensions 50 m and 35 m. What is the total cost of laying bricks on the track at the rate of Rs 125 per 10m²?

A. Rs. 3005 B. Rs. 3075 C. Rs. 3250 D. Rs. 3450 E. None of these

8. The shortest distance between two opposite corners of a rectangular park is 68 metres, while the ratio of the length to the breadth of the park is 15 : 8, respectively. Find the difference between the cost of fencing boundary of the park at the rate of Rs. 12/metre and cost of sodding the park at the rate of Rs. 2/metre².

A. Rs. 1768 B. Rs. 1240 C. Rs. 1852 D. Rs. 1632 E. None of these

9. The sum of perimeter of a rectangle (R) and a square (S) is 210 cm. If the length and breadth of rectangle (R) is 40% more and 20% less than the side of square(S), what is the length of diagonal of rectangle (R)?

A. 40√5 cm	B. 5√65 cm	C. 4√35 cm	D. 25√2 cm	E. 16√30cm
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10. Perimeter of a rectangle is x cm and circumference of a circle is (x + 8) cm. The length of the rectangle is _____ cm. The ratio of the radius of the circle and the length of the rectangle is 1 : 2 and ratio of length and breadth of the rectangle is 7 : 3.

A. 28
B. 21
C. 24.5
D. 17.5
E. None of these

11. A jeweler wants to build a 1250 square meters rectangular jewellery shop. Since she has only 100 m spiky wire, she barbed only three sides of the jewellery shop letting her home wall acting as the remaining side of the shop. Find the dimension of the jewellery shop where the spiky wires are being used?
A. 25 m × 12.5 m B. 50 m × 25 m C. 30 m × 30 m D. 40 m × 25 m E. None of these

12. Some number of solid metallic right circular cones radius of which is equal to the side of the square which area is 9 cm^2 and height is 100% more than the inradius of that

of the square which area is 9 cm² and height is 100% more than the inradius of that square are melted to form a solid sphere of radius 6 cm. find the number of right circular cones is required.

 A. 64
 B. 36
 C. 27
 D. 32
 E. None of these

13. Find the height of equilateral triangle if its area is $36\sqrt{3}$ m²?A. $8\sqrt{3}$ mB. $5\sqrt{3}$ mC. $4\sqrt{3}$ mD. $6\sqrt{3}$ mE. $7\sqrt{3}$ m

14. The perimeter of a square field is 8cm more than the perimeter of a rectangle. The length of the rectangle is 51 cm which is 300% of its width. If a street of width 10 cm surrounds from outside the square, then find the total cost of constructing the street at the rate of Rs. 25 per sq. cm?

A. Rs. 45,000 B. Rs. 45,500 C. Rs. 46,000 D. Rs. 46,500 E. None of these

15. The ratio of the breadth to the length of a rectangular field is 1 : 3. The total cost of cutting the grass of the field at the rate of Rs 6 per m² is Rs. 8712. Find the cost of fencing the boundary of the field at the rate of Rs. 11 per m.

A. Rs. 7216 B. Rs. 3268 C. Rs. 2024 D. Rs. 1936 E. Rs. 2058

16. The area of a square is 28 sq. cm more than the area of a rectangle of length 14 cm and breadth 12 cm. What will be the area of incircle of the square?

A. 162 sq. cm. B. 154 sq. cm. C. 132 sq. cm. D. 160 sq. cm. E. None of these

17. The ratio of area of a rectangle to that of a square is 3 : 5. If the perimeter of the square is 100 cm then what can be the perimeter of the rectangle if the breadth of the rectangle is 66.67% more than that of length?

A. 75 cm B. 80 cm C. 85 cm D. 65 cm E. None of
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18. A rectangular floor of length 80 cm and width 60 cm was fully covered with equal size square tiles of sides 4 cm. If the price of one such tile is Rs. 15 then total how much money will be required to cover the floor with tiles?

A. Rs. 4500 B. Rs. 6000 C. Rs. 3000 D. Rs. 7500 E. None of these

19. The area of a rectangle is one – third of the area of a circle and the length of the rectangle is equal to the diameter of the circle. If the breadth of the rectangle is 11 cm, then what is the perimeter of the rectangle?

A. 60 cm	B. 64 cm	C. 36 cm	D. 58 cm	E. None of these

20. A cuboid of dimensions 15 m × 20 m × 18 m was painted from inside as well as outside at the rate of 5 paisa per sq. m. If the cuboid was made of metal of negligible thickness then how much money will be required (In Rupees) to paint the cuboid for inside as well as outside?

A. 9300 B. 93 C. 186 D. 18600 E. None of these

21. The perimeter of two squares fields are 480 cm and 720 cm respectively. The area of a rectangular field is equal to the difference between the areas of these two square fields. The breadth of the rectangular field is 60 cm. How much money the owner of the rectangular field will spend for putting a fence around it at the rate of Rs. 5 per cm?

A. Rs 7200
B. Rs 8400
C. Rs 3600
D. Rs 9000
E. None of these

22. In a parallelogram shaped field, one of its side is 15 meters and the length of the perpendicular distance between the opposite sides is 16 m. In the field, if wheat seeds were to sow at the rate of Rs. 15 per sq. meter, then how much money will be needed to sow wheat seeds in the field?

A. Rs. 1800 B. Rs. 3600 C. Rs. 2700 D. Rs. 4200 E. None of these

23. A small slice from a circular shaped pizza of diameter 21 cm and thickness 4 cm was cut. If the small slice makes an angle of 30 degree at the centre of the pizza then what was the total volume (in cm³) of the remaining part of the pizza?
A 1400 5

A. 1460.5 B. 1270.5 C. 1320.5 D. 1120 E. None of these

24. The height of a cylindrical shaped wood is 15 cm less than its circumference of the base and the curved surface area is 154 cm2, then what is the volume (in cm3) of the cylinder shaped wood?

A. 289.5 B. 269.5 C. 462 D. 462.5 E. None of these

25. The ratio of length to breadth of a rectangular shaped room is 3 : 4. The length of longest pole that can be placed on the floor of the room is 25 cm. What will be the total cost of cementing the floor of the room at the rate of Rs. 5 per sq. cm?

A. Rs. 1200 B. Rs. 1500 C. Rs. 960 D. Rs. 1800 E. None of these

26. Sum of the volume of a cylinder and a cone is 2190π cm2. The radius of both cylinder and cone is same i.e., 10 cm. If the height of cone is 15 cm, then find the ratio of height of cylinder to height of cone?

A. $\frac{173}{152}$ B. $\frac{169}{150}$ C. $\frac{156}{149}$ D. $\frac{191}{136}$ E. $\frac{213}{135}$

27. The breadth of a rectangular field is 80% of its length. Area of square is six times of breadth of the rectangle. If the ratio of Area of Rectangle to Perimeter of Square is 15 :

: 1, then what will be the length of rectangle ?

A. 30 B. 60 C. 25 D. 20 E. None of these

28. A triangular field has to be fenced with iron wire. The cost of fencing is Rs.15 per meter. If the sum of lengths of two of the three sides of the triangular field is 25 meters, then which of the following cannot be the cost of fencing the field?

 A. Rs. 425
 B. Rs. 675
 C. Rs. 725
 D. Rs. 800
 E. Rs. 575

29.	29. 'Jameen' is a rectangle piece of purposed construction site of a Mohalla ground in Patna. The ratio of the square of the perimeter of 'Jameen' and the sum of the squares of the diagonals of 'Jameen' is 98 : 25. Find the ratio of the sum of the adjacent sides of 'Jameen' and difference of adjacent sides of 'Jameen'.							
	A. 7 : 1	B. 5 : 2	C. 3 : 4	D. 2 : 1	E. None of these			
30.	Area of a circle is length of rectang double the length	616 cm ² breadth o gle is 37.5% of the h of rectangle, ther	of Rectangle is half perimeter of Rect find the area of sc	than the radius of angle. If the side quare.	the Circle. The of a square is			
	A. 1764 cm ²	B. 441 cm ²	C. 2401 cm ²	D. 1225 cm ²	E. None of these			
31.	The area of recta which is 50% less A. 12 cm	ngle and its perime than the length of B. 15 cm	eter are in ratio of 3 rectangle is 20 cm C. 10 cm	3 : 1. Perimeter of . Find the breadth D. 20 cm	square side of of rectangle. E. 25 cm			
32.	A floor is covered the tile is in the r is Rs. 51840. How	d with rectangular atio 4 : 3. The cost v many tiles are the	tiles of perimeter a of polishing the flo ere on the floor?	84cm and length a or at the rate of 4	and breadth of Opaise per cm ²			
	A. 280	B. 300	C. 240	D. 350	E. 320			
33.	33. The length and breadth of a rectangle are in the ratio 5 : 4. The length of the rectangle is equal to the slant height of a cone of height 48 cm and base perimeter 88 cm. What is the area (in cm ²) of the rectangle?							
	A. 2250	B. 1800	C. 2040	D. 2000	E. None of these			
34.	A solid cone of n height 15 cm, wh	naximum volume i at is the volume (ii	s cut out from a so n cm ³) of the remai	lid cylinder of rac ning solid portion	lius 21 cm and ?			
	A. 11260	B. 13860	C. 13420	D. 14280	E. 12960			
35.	35. A rectangular sheet of aluminum is rolled to make the curved surface of a can. The volume of the can is 770 cm ³ and the cost of aluminum sheet is Rs 308. If the rate of aluminum is 70 paisa per cm ² what is the diameter of the can?							
36.	36. A tent has a cylindrical base and conical top. The height of tent is 61 m and that of cylindrical portion is 40 m the radius of tent is 28 m. What is the total area of cloth required to make the tent?							
	A. 10450 m ²	B. 12540 m ²	C. 10120 m ²	D. 9750 m ²	E. 72 60 m ²			
37.	Length of a recta changing the brea	ngle is twice the br adth, then the ratio	eadth. If area of su o of older to newer	ich a rectangle is h perimeter of the i	nalved without rectangle is:			
	A. 1:3	B. 2 : 3	C. 3 : 2	D. 3 : 1	E. None of these			
38.	In a rectangle w shaded. The dif	vith length 6 cm r ference between	nore than breadth the area of shad	n, a circle of max ed and non-shad	kimum area is led portion is			

126cm². What is the perimeter of the rectangle? A. 6

54 cm	B. 52 cm	C. 68 cm	D. 74 cm	E. None of these
	D. 52 Cm	C. 00 cm	D. 74 Cm	E. None of these

39. The area of a rhombus shaped garden is 200V3 square meter. The acute angle formed by the two sides of the rhombus is 60 degree. What will be the cost of making a half meter high boundary around the garden if the cost of making boundary per square meter be Rs. 148?

A. Rs. 5140 B. Rs. 8088 C. Rs. 5920 D. Rs. 11508 E. None of these

- 40. A square pyramid of height 5 m is attached to the top face of the cubical box of side 8 meters, such that the pyramid exactly covers the top face of the cubical box. Find the visible surface area of the combined structure excluding the base of the cubical box A. 4 (64 + $\sqrt{41}$) m² B. 2 (256 + $\sqrt{39}$) m² C. 16 (16 + $\sqrt{41}$) m² D. 4 (32 + $\sqrt{39}$) m² E. None of these
- 41. The radius of a cylindrical tank is 3 m less than the radius of a conical tank. Total time taken to fill water in cylindrical tank and in conical tank at 54 m3 per second and 66 m3 are 297 seconds and 144 seconds, respectively. If the height of the cylindrical tank is same as the height of the conical tank then find the height of the each tank

A. 31.5 m B. 63 m C. 52.5 m D. 42 m E. None of these

- 42. A circle is inscribed in a square of side 48 cm. Find the area of the remaining portion of the square which is not enclosed by the circle?
 A. 465.715 cm²
 B. 439.715 cm²
 C. 493.715 cm²
 D. 433.715 cm²
 F. None of these
- 43. A solid metal cylinder of 10cm height and 14cm diameter is melted and recast into two cones in the proportion 3 : 4 (volume), keeping the height 10cm. What would be the percentage change in the surface area before and after?

 A. 40%
 B. 45%
 C. 55%
 D. 50%
 E. None of these

A. 40% B. 45% C. 55% D. 50% E. None of these

44. The area of a triangle is $12/13^{th}$ of the area of a rectangle whose sides satisfy the quadratic equation $2p^2 - 43p + 221 = 0$ and the base of the given triangle is 17 cm. If the side of a square is equal to the height of the given triangle, then what will be the perimeter of the square?

A. 36 cm B. 40 cm C. 44 cm D. 48 cm E. None of these

45. The radius of cone is 10 cm. The ratio of curved surface area and the total surface area of cone is 4 : 5. Find the slant height of the cone.

A. 30 cm B. 40 cm C. 35 cm D. 42 cm E. 25 cm

46. A park is in the shape of right-angled triangle. If the sides (in meter) of that rightangled triangle are three consecutive integers. Find the cost of sowing flower seeds in the park at the rate of Rs. 25 per sq. m?

 A. Rs. 150
 B. Rs. 125
 C. Rs. 300
 D. Rs. 250
 E. Can't be determined

47. The area of a circular plot is 5544 sq. cm. If the diagonal of a square is equal to the radius of the circular plot then find the difference between the area of square and the area of circular field?

A. 4662 sq. cm	B. 1764 sq. cm	C. 3780 sq. cm	D. 882 sq. cm	E. None of these
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48. 30 oxen can plough a rectangular field of 300 meters long and 400 meters wide in 12 days. How many days will 30 oxen take to plough a square field, the sides of which is equal to the diagonal of the rectangular field?

C. 30 days

B. 25 days

D. 25.75 days E. None of these

49. The area of a rectangle of sides 14 cm and 22 cm is equal to the area of a circle. If the diameter of the circle is 50% less than the side of a square then find the area of the square?

A. 1568 cm^2 B. 1548 cm^2 C. 1268 cm^2 D. 1248 cm^2 E. None of these

50. Find the number of largest possible square slabs which can be paved on the floor of 3 m 24 cm long and 8 m 28 cm broad?

A. 198 B. 204 C. 207 D. 184 E. None of these

1	Α	11	В	21	С	31	В	41	В
2	D	12	D	22	В	32	В	42	C
3	В	13	D	23	В	33	D	43	D
4	С	14	С	24	В	34	В	44	D
5	С	15	D	25	В	35	D	45	В
6	С	16	В	26	В	36	С	46	А
7	В	17	В	27	Α	37	С	47	Α
8	D	18	А	28	D	38	С	48	В
9	В	19	E	29	Α	39	С	49	А
10	A	20	С	30	A	40	С	50	C

ANSWERS