QUANTITATIVE APTITUDE
Mensuration

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Quantitative Aptitude

Quantitative Aptitude is an important and highly scoring topic in **Competitive Exams** especially in **Bank Exams**. Quantitative Aptitude or Data Interpretation based questions are structured assessments that evaluate the talent and skills of the Candidates. It measures the problem-solving skills of the candidates so it has become an important part of Bank Exams.

Every bank exam includes Quantitative Aptitude in their Prelim and Mains Exams. Banks like **SBI, IBPS (for Clerk & PO), IBPS RRB and RBI Grade B** includes Quantitative Aptitude in their syllabus to examine the candidates' **Thinking power**. To understand the importance of Quantitative Aptitude let us have a look at the weightage of this topic in different banking exams.

Prelims and Mains Syllabus for Bank Exams

Prelims Syllabus	Mains Syllabus
✦ Number Series ✦ Data Interpretation ✦ Simplification/Approximation ✦ Quadratic Equation ✦ Data Sufficiency ✦ Mensuration ✦ Average ✦ Profit and Loss ✦ Ratio and Proportion ✦ Time and Work ✦ Time and Distance ✦ Probability ✦ Partnership ✦ Problem on Ages ✦ Simple and Compound Interest ✦ Permutation and Combination	✦ Simplification ✦ Average ✦ Percentage ✦ Ratio and Percentage ✦ Data Interpretation ✦ Mensuration and Geometry ✦ Quadratic Equation ✦ Interest ✦ Problems of Ages ✦ Profit and Loss ✦ Number Series ✦ Speed, Distance and Time ✦ Time and Work ✦ Number System ✦ Data Sufficiency ✦ Linear Equation ✦ Permutation and Combination ✦ Probability ✦ Mixture and Allegations

Quantitative Aptitude – Mensuration

1. The total area of a circle and rectangle is 2058 Sq cm. The radius of the circle is 21 cm. Find the perimeter of the rectangle, if breadth of the rectangle is 24 cm?

   A. 122 cm
   B. 136 cm
   C. 104 cm
   D. 148 cm
   E. None of these

2. The volume of cylinder 1 and 2 is in the ratio of 5: 6 and the radius of cylinder 1 and 2 is in the ratio of 5:8. Find the ratio between the heights of cylinder 1 to that of cylinder 2?

   A. 25: 16
   B. 20: 13
   C. 32: 15
   D. 36: 19
   E. None of these

3. The area of a square is 1296 sq cm. Find the ratio between the length and the breadth of a rectangle, if the length of the rectangle is twice the side of square and breadth is 4 cm less than the side of square?

   A. 11: 7
   B. 13: 6
   C. 8: 5
   D. 9: 4
   E. None of these

4. The side of the equilateral triangle is equal to the radius of the circle. The area of the equilateral triangle is 49√3 Sq cm. Find the circumference of the circle?

   A. 75 cm
   B. 106 cm
   C. 88 cm
   D. 115 cm
   E. None of these

5. The circumference of a circle is half of the perimeter of a rectangle. The area of the circle is 1386 Sq m. What is the area of the rectangle if the breadth of the rectangle is 50 m?

   A. 4100 Sq m
   B. 4350 Sq m
   C. 3600 Sq m
   D. 4800 Sq m
   E. None of these

6. A Circular path is surrounding the circular plot is being gravelled at a total cost of Rs. 5390 at Rs. 5 per square meter. Find the width of the path, if the radius of the circle plot is 21 m?

    A. 8 m
    B. 10 m
    C. 9 m
    D. 7 m
    E. None of these

7. The circumference of two circles is 176 metres and 264 metres respectively. What is the difference between the area of the larger circle and the smaller circle?

    A. 3080 Sq m
    B. 2916 Sq m
    C. 3240 Sq m
    D. 2754 Sq m
    E. None of these

8. The area of a rectangular plot is 432 sq cm. The length is 3 times the breadth. If the cost of fencing the plot is Rs. 8 per cm, then find the total cost to fence the plot? TM

    A. Rs. 768
    B. Rs. 716
    C. Rs. 724
    D. Rs. 652
    E. None of these

9. The radius of the semicircle is equal to the half the side of the square. The area of the square is 1764 Sq cm. Find the perimeter of the semicircle.

    A. 86 cm
    B. 92 cm
    C. 108 cm
    D. 116 cm
    E. None of these

10. The perimeter of a rectangular field is thrice the perimeter of a square field. If one of the sides of the square field is 10 m and breadth of the rectangular field is 20 m, then find the area of the rectangular field?

    A. 800 Sq. m
    B. 1250 Sq. m
    C. 1340 Sq. m
    D. 1520 Sq. m
    E. None of these

11. Find the volume of a cylinder, whose radius is one-fourth of the radius of a circle having an area of 2464 cm². Height of the cylinder is double of its radius?

    A.   2156 cm³

    B.   2564 cm³

    C.   2272 cm³

    D.   2678 cm³

    E.   None of these

12. The area of a square is 1764 sq cm whose side is 2 times of radius of a circle. The circumference of the circle is equal to the perimeter of rectangle. What is the breadth of rectangle, if the length of the rectangle is 42 cm?

    A. 18 cm

    B. 25 cm

    C. 32 cm

    D. 24 cm

    E. None of these

13. The area of the rectangular plot is 324 sq cm. The length is 4 times the breadth. If the cost of fencing the plot is Rs. 7 per cm, then find the total cost to fence the plot?

    A.   Rs. 630

    B.   Rs. 680

    C.   Rs. 560

    D.   Rs. 590

    E.   None of these

14. If the length of a rectangle is increased by 20% while the breadth of the rectangle is decreased by 10% then find percentage change in area of the rectangle?

    A.   12 % decreased

    B.   8 % decreased

    C.   12 % increased

    D.   8 % increased

    E.   21 % decreased

15. The perimeter of the rectangle is thrice the circumference of a circle. The area of the circle is 616 sq. m. What is the area of the rectangle if the breadth of the rectangle is 60 m?

    A.   5348 Sq m

    B.   4860 Sq m

    C.   4320 Sq m

    D.   3136 Sq m

    E.   None of these

16. The perimeter of a rectangle is 132 m and the difference between the length and breadth of the rectangle is 14 m then find the perimeter of square whose area is 16 m² less than the area of the rectangle?

A. 136 m
B. 128 m
C. 114 m
D. 92 m
E. None of these

17. The length and breadth of a rectangular piece of land are in the ratio of 3: 2. The owner spent Rs. 3250 for fencing it from all the sides at the rate of Rs 6.50 per meter. The difference between length and breadth is?

A. 50 m
B. 70 m
C. 90 m
D. 85 m
E. 65 m

18. The length of a rectangle is 12 m more than the side of the square and the breadth of the rectangle is 5 m less than the side of the square. If the area of the square is 784 Sq m. what is the area of the rectangle?

A. 840 Sq m
B. 780 Sq m
C. 920 Sq m
D. 660 Sq m
E. None of these

19. The area of a square is 1296 sq cm. Find the perimeter of the rectangle, if length is (1/3) the side of the square and breadth is 28 cm less than the side of the square?

A. 40 cm
B. 52 cm
C. 64 cm
D. 78 cm
E. None of these

20. The radius of the circle is equal to seven-ninth of the side of the square. The area of the circle is 1386 sq cm. Find the perimeter of a square?

A. 124 cm
B. 112 cm
C. 108 cm
D. 136 cm
E. None of these

21. Find the volume of a cylinder, whose radius is half of the radius of a circle having area 2464 cm². Height of the cylinder is equal to the radius of the circle?

    A. 21452 cm³

    B. 25786 cm³

    C. 15344 cm³

    D. 17248 cm³

    E. None of these

22. The perimeter of equilateral triangle is 4 more than the perimeter of square. The diagonal of the square is 14√2 cm. What is the area of the equilateral triangle?

    A. 100√3 sq cm

    B. 64√3 sq cm

    C. 144√3 sq cm

    D. 80√3 sq cm

    E. None of these

23. The total area of a Square and rectangle is 496 Sq cm. The side of the square is 14 cm. What is the sum of the perimeter of square and rectangle, if length of the rectangle is 25 cm?

    A. 120 cm

    B. 140 cm

    C. 130 cm

    D. 160 cm

    E. None of these

24. The perimeter of the rectangular field is 2 times the perimeter of square field. If the side of the square field is 18 m and the length of the rectangular field is 45 m, then find the area of the rectangular field?

    A. 1215 Sq m

    B. 1336 Sq m

    C. 1050 Sq m

    D. 1152 Sq m

    E. None of these

25. The cost of fencing a square plot at the rate of Rs. 15 per metre is Rs. 3780. What will be the cost of flooring the plot at the rate of Rs. 3 per square meter?

    A. Rs. 9856

    B. Rs. 10548

    C. Rs. 12563

    D. Rs. 11907

    E. None of these
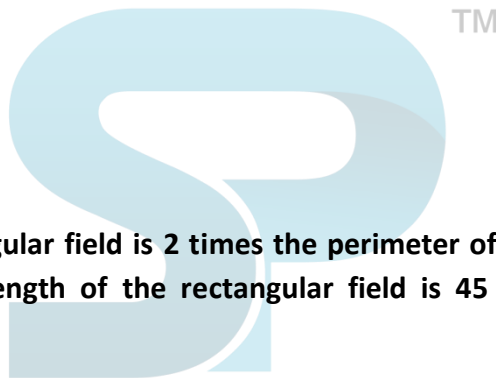
26. The circumference of a circle is equal to the perimeter of a square whose area is 4356 sq cm. What is the area of the circle?

    A. 4678 Sq cm
    B. 5544 Sq cm
    C. 5126 Sq cm
    D. 4282 Sq cm
    E. None of these

27. Find the volume of a cylinder whose radius is one third of the radius of a circle having area 1386 cm^2. Height of the cylinder is double its radius?

    A. 2584 cm^3
    B. 3562 cm^3
    C. 2156 cm^3
    D. 3245 cm^3
    E. None of these

28. The side of the equilateral triangle is equal to the diameter of the circle. The area of the equilateral triangle is 196√3 Sq cm. Find the circumference of the circle?

    A. 92 cm
    B. 88 cm
    C. 74 cm
    D. 66 cm
    E. None of these

29. If the breadth of a parallelogram is increased by 30% while the height of the parallelogram is decreased by 20% then find percentage change in area of the parallelogram?

    A. 8 % increased
    B. 5 % decreased
    C. 9 % decreased
    D. 4 % increased
    E. None of these

30. The circumference of a circle is half of the perimeter of a rectangle. The area of the circle is 2464 sq. m. What is the area of the rectangle if the breadth of the rectangle is 80 m?

    A. 7680 Sq m
    B. 5572 Sq m
    C. 6128 Sq m
    D. 7054 Sq m
    E. None of these

31. The radius of the circle is equal to two-fifth of the side of the square. The area of the circle is 616 sq cm. Find the perimeter of a square?

    A. 152 cm
    B. 166 cm
    C. 140 cm
    D. 178 cm
    E. None of these

32. A Circular path is surrounding the circular plot is being gravelled at a total cost of Rs. 3080 at Rs. 4 per square meter. Find the width of the path, if the radius of the circle is 14 m?

    A. 12 meter
    B. 7 meter
    C. 15 meter
    D. 20 meter
    E. None of these

33. The length of a rectangle is 16 m more than the side of the square and the breadth of the rectangle is 7 m less than the side of the square. If the area of the square is 1156 Sq m. what is the area of the rectangle?

    A. 1120 Sq m
    B. 1240 Sq m
    C. 1350 Sq m
    D. 1060 Sq m
    E. None of these

34. The ratio between the radius to that of the height of a cylinder is 1: 3 and the perimeter of a square is 112 cm. Find the volume of a cylinder, if the radius of the cylinder is equal to one-fourth of the side of the square?

    A. 3234 Sq cm
    B. 2986 Sq cm
    C. 2572 Sq cm
    D. 3458 Sq cm
    E. None of these

35. The total area of a circle and rectangle is 991 Sq cm. The radius of the circle is 14 cm. what is the sum of the circumference of circle and perimeter of rectangle, if length of the rectangle is 25 cm?

    A. 124 cm
    B. 168 cm
    C. 156 cm
    D. 142 cm
    E. None of these

36. The ratio of the radius of a circle and the side of a square is 2: 1. Perimeter of a rectangle is 68cm and the length of the rectangle is equal to the side of the square. The length of the rectangle is 2 cm more than the breadth of the rectangle. Find the area of the circle?

- A. 1296∏
- B. 1266∏
- C. 1286∏
- D. 1276∏
- E. None of these

37. The perimeter of a rectangular field is thrice the perimeter of a square field. If one of the sides of the square field is 24 m and breadth of the rectangular field is 48 m then find the area of the rectangular field?

- A. 4276 Sq m
- B. 5354 Sq m
- C. 3892 Sq m
- D. 4608 Sq m
- E. None of these

38. The radius of the cone is equal to the radius of the circle and the height of the cone is 2 cm. If the circumference of the circle is 88cm, then find the curved surface area of the cone.

- A. $417\sqrt{2}cm^2$
- B. $540\sqrt{2}cm^2$
- C. $440\sqrt{2}cm^2$
- D. $740\sqrt{2}cm^2$
- E. None of these

49. Radius of a right circular cylinder is equal to length of a rectangle having area ___ cm^2 and length of the rectangle is 2 cm more than its breadth. If the height of the cylinder is equal to side of a square having area ___ cm^2 and the volume of the cylinder is 44616 cm^3.
Which of the following satisfies the two blanks given in the questions?

- I. 624 cm^2, 441 cm^2
- II. 728 cm^2, 484 cm^2
- III. 143 cm^2, 7056 cm^2
- A. Both I and III
- B. Only I
- C. Only II
- D. Both II and III
- E. Only III

40. The height of the cylinder is equal to the perimeter of the square whose diagonal is ___ m and the radius of the cylinder is equal to the side of the square and the volume of the cylinder is .

- A. 14√2, 4782
- B. 21√2, 7284
- C. 7√2, 4312

D. Either b or c

E. None of these

41. If the ratio of the radius of the circle to the cylinder is 1: 2 and the height of the cylinder is 10 cm more than that of the radius of the cylinder. The radius of the cone and height is radius of the circle and height of the cylinder respectively and the circumference of the circle is 44 cm.

From the statement given in the above question which of the following can be determined.

A. Volume of the cylinder

B. Length of the cone

C. Curved surface area of the cone

D. Total surface area of the Cylinder

    A. All A, B, C and D

    B. Only B and C

    C. Only D and B

    D. Only A

    E. Cannot be determine

42. If the ratio of the height of the cone to the height of the cylinder is 3: 1 and the ratio of the radius of the Cone to cylinder is 1: 1. The area of the rectangle is 280 cm^2 and the length of the rectangle is 6 cm more than that of the breadth of the rectangle. Height of the cone is 20% of the diagonal of the rectangle.

From the statement given in the above question which of the following can be determined.

A. Volume of the Cone

B. Perimeter of the rectangle

C. Curved surface area of the cylinder

D. Total surface area of Cone

    A. All A, B, C and D

    B. Only A

    C. Only C

    D. Only B and C

    E. Only B

43. The area of the rectangle is 40% more than that of the perimeter of the square. The radius of the cone to the breadth of the rectangle is 1: 2 and the volume of the cone is 308 cm^3. The height of the cone is 6 cm and the perimeter of the rectangle is 68cm.

From the statement given in the above question which of the following can be determined.

A. Total surface area of the cone

B. Area of the square

C. If the breadth and length of the rectangle is equal to the breadth and length of the cuboid respectively. Find volume of cuboid?

D. Diagonals of the rectangle

A. All A, B, C and D
B. Only A, B and D
C. Only C and A
D. Only A, B and C
E. Only A

44. The ratio of the height to radius of the cone is 24: 7 and the slant height is 25 cm.
From the statement given in the above question which of the following can be determined.

A. Find Total surface area of the cone
B. If the ratio of the radius of the cylinder to cone is 2: 1, volume of the cylinder is?
C. If the ratio of the breadth of the rectangle to height of the cone is 3: 4 and the perimeter of the rectangle is 76 cm, then length of the rectangle is?
D. What is the sum of the curved surface area of the cone and radius of the cylinder?

    A. All A, B, C and D
    B. Only A, B and D
    C. Only C and A
    D. Only A, B and C
    E. Only A

45. The area of the rhombus is 160 cm² and the one of the diagonals of the rhombus is 4 cm less than that of the height of the cone and the volume of the cone 1232 cm³ and the radius of the cone is 7 cm.
From the statement given in the above question which of the following can be determined.

A. Other diagonals of the rhombus
B. Slanting height of the cone
C. Perimeter of the rhombus
D. Curved surface area of the cone

    A. All A, B, C and D
    B. Only A, B and D
    C. Only C and A
    D. Only A, B and C
    E. Cannot be determine

46. The ratio of the length of the floor of the rectangle room to the radius of the sphere is 10: 7. The surface area of the sphere is cm² and the perimeter of the rectangle room is 76 cm. If the cost of flooring is Rs.18 per centimetre, then the cost of flooring the room is Rs. -----

A. 616, Rs.3240
B. 1232, Rs.4860
C. 154, Rs.2970
D. 2464, Rs.6480

    A. All A, B, C and D
    B. Only C and D

C. Only A, B and D

D. Only B and D

E. Cannot be determine

47. If the volume of the cuboid is 2016 cm³ and the radius and height of the cone is equal to the breadth and length of the cuboid. The ratio of the length, breadth and height of the cuboid is 24: 7: 12.

From the above statement which of the following can be determined.

A. Slanting height of the cone

B. Diagonal of the cuboid

C. Volume of the cone

D. Surface area of the cuboid

    A. All A, B, C and D

    B. Only A

    C. Only A and D

    D. Only D

    E. Cannot be determine

48. The total surface area of the cone is 704 cm². The height of the cone is 17cm more than that of the radius of the cone. The volume of the cone is equal to the volume of the cylinder.

From the above statement which of the following can be determined.

A. Slanting height of the cone

B. Curved surface area of the cone

C. Height of the cone

D. Total surface area of the cone

    A. All A, B, C and D

    B. Only A and D

    C. Only A and C

    D. Only A, C and D

    E. Cannot be determine

59. If the radius of the cone is increased by 5 cm and the height of the cone is decreased by 10 cm, then volume of the cone is increased by 880 cm. After changes the slanting height of the cone is 2 cm more than radius of the cone.

From the above statement which of the following can be determined.

A. Total surface area of the cone (before changes)

B. Slanting height of the cone (before changes)

C. Difference between the height and slanting height of the cone (before changes)

D. Volume of the cone (After changes)

    A. All A, B, C and D

    B. Only A and C

C. Only B

D. Only A, C and D

E. Cannot be determine

50. The perimeter of rectangle is 104 m and the radius of the cylinder is 2 m less than half the length of rectangle. The height of the cylinder is equal to the breadth of the rectangle. Find the curved surface area of cylinder, if the length of rectangle is 12 m more than its breadth?

    A. 1620 sq m

    B. 1840 sq m

    C. 1580 sq m

    D. 1760 sq m

    E. None of these

1. Answer: C

Explanation: $\Pi r^2 + lb = 2058$

$(22/7) * 21 * 21 + l * 24 = 2058$

$1386 + 24l = 2058$

$24l = 2058 - 1386$

$24l = 672$

$l = 28$ cm

Perimeter of rectangle $= 2 * (l + b) = 2 * (28 + 24)$

$= > 2 * 52 = 104$ cm

2. Answer: C

Explanation: Volume of the cylinder $= \pi r^2 h$

The ratio of volume of cylinder 1 and 2 = 5: 6

The ratio of radius of cylinder 1 and 2 = 5: 8

The ratio between the heights of cylinder 1 to that of cylinder 2

$= > [\pi * (25) * h1]/[\pi * (64) * h2] = (5/6)$

$= > h1/h2 = (32/15)$

$= > h1: h2 = 32: 15$

3. Answer: D

Explanation: The area of a square = 1296 sq cm

$a^2 = 1296$

$a = 36$ cm

The length of the rectangle = 2 * Side of square L = 2a = 36 * 2 = 72 cm

B = a − 4 = 36 − 4 = 32 cm

Required ratio = 72: 32 = 9: 4

4. Answer: C

Explanation: The area of the equilateral triangle = 49√3 Sq cm

The area of the equilateral triangle = (√3/4) * a^2 (√3/4) * a^2 = 49√3

a^2 = 49 * 4

Side (a) = 7*2 = 14 cm Radius (r) = 14 cm

Circumference of the circle = 2πr = 2 * (22/7) * 14 = 88 cm

5. Answer: A

Explanation: Area of a circle = $πr^2$ 1386 = (22/7) * r^2

1386 * (7/22) = r^2 r^2 =441

r = 21 m

Circumference = 2πr = 2 * (22/7) * 21 = 132 m Perimeter of the rectangle = 2 * 132 = 264 m 264 = 2 * (l + 50)

132 = l + 50

l = 132 - 50

l = 82

Area of the rectangle = 82 * 50 = 4100 Sq m

6. Answer: D

Explanation: Radius of the circular plot = 21 m

Area of the circular path = 5390/5 = 1078

Area of the path = π(r + x)^2 – $πr^2$ (Here x is the width of the path)

= > (22/7) [(21 + x)^2 – 21^2]

= > (22/7) [441 + 42x + x^2 – 441]

= > (22/7) [42x + x^2] (22/7) [42x + x^2] = 1078 42x + x^2 = 1078 * (7/22)

42x + x^2 = 343

x^2 + 42x – 343 = 0 (x + 49) (x - 7) = 0

x = 7 meter

The width of the path = 7 meter

7. Answer: A

Explanation: Circumference of circle1 = 176 m 2πr1 = 176

2 * (22/7) * r1 = 176 r1 = 176 * (7/44)

r1 = 28 m

Circumference of circle2 = 264 m 2πr2 = 264

2 * (22/7) * r2 = 264 r2 = 264 * (7/44)

r2 = 42 m

Required answer = $\pi r2^2 - \pi r1^2 = \pi * (r2^2 - r1^2)$

= > $(22/7) * (42^2 - 28^2)$

= > (22/7) * (42 + 28) (42 − 28)

= > (22/7) * (70) * (14)

= > 3080 Sq m.

8. Answer: A

Explanation: The area of a rectangular plot = 432 sq cm Lb = 432

Length = 3 * Breadth 3b * b = 432

$3b^2 = 432$

$b^2 = 432/3 = 144$

b = 12 cm

l = 3 * 12 = 36 cm

Perimeter of the rectangle = 2 * (l + b) = 2 * (36 + 12)

= 96 cm

The cost of fencing the plot = Rs. 8 per cm Total cost = 96 * 8 = Rs. 768

9. Answer: C

Explanation: Area of square = a^2 = 1764

Side (a) = 42 cm
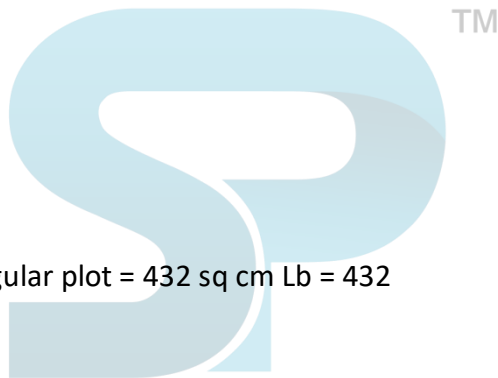
Radius of the semicircle = (1/2) * 42 = 21 cm Perimeter of semicircle = πr + d

= > (22/7) * 21 + 42 = 108 cm

10. Answer: A

Explanation: Perimeter of square field = 10 * 4 = 40m Perimeter of the rectangular field = 3 * 40 = 120 m Let the length of the rectangular field be x,

120 = 2 * (x + 20)

120 – 40 = 2x

x = 80/2 = 40 m

Area of the rectangular field = 40 * 20 = 800 Sq. m

11. Answer: A

Explanation: $πr^2$ = 2464

=> (22/7) * r^2 = 2464

=> r^2 = 2464 x (7/22)

=> r^2 = 784

=> r = 28 cm

Radius of the cylinder = 28 * (1/4) = 7 cm Height of the cylinder = 7 * 2 = 14 cm

Volume of the cylinder = $πr^2h$ = (22/7) * 7 * 7 * 14 = 2156 cm^3

12. Answer: D

Explanation: Area of square = 1764 Sq cm = a^2 Side (a) = 42 cm

Side of square = 2 * Radius of circle Radius = 42/2 = 21 cm

Circumference of the circle = 2πr = 2 * (22/7) * 21 = 132 cm

Length = 42 cm

Perimeter of rectangle = 2(42 + b) = 132 42 + b = 66

Breadth = 66 – 42 = 24 cm

13. Answer: A

Explanation: The area of the rectangular plot = 324 sq cm
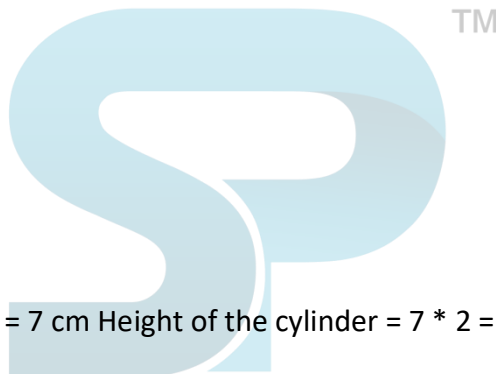
Lb= 324

Length = 4 * Breadth 4b * b = 324

$4b^2$ = 324

b^2 = 324/4 = 81

b = 9 cm

l = 4 * 9 = 36 cm

Perimeter of the rectangle = 2(l + b) = 2 * (36 + 9) = 90 cm

The cost of fencing the plot = Rs. 7 per cm Total cost = 90 * 7 = Rs. 630

14. Answer: D

Explanation: Let the length and breadth of the rectangle is 10 cm and 8cm,

Previous area = 10 * 8 = 80 New length = 10 * 120/100 = 12 New breadth = 8 * 90/100 = 7.2

New area = 12 * 7.2 = 86.4

Required percentage = [(86.4 – 80)/80] * 100 = 8 % increased.

15. Answer: C

Explanation: Area of a circle = πr^2 616 = $22r^2/7$

616 * (7/22) = r^2 r^2 = 196

r = 14 m

Circumference = 2 * 22/7 * 14 = 88 sq. m Perimeter of the rectangle = 3 * 88 = 264 sq. m 264 = 2(l + 60)

132 = l + 60

l = 132 - 60

l = 72

Area of the rectangle = 72 * 60= 4320 sq. m

16. Answer: B

Explanation: The perimeter of a rectangle = 132 m 2(l + b) = 132

l + b = 66 ……… (1)

l – b = 14 …….. (2)
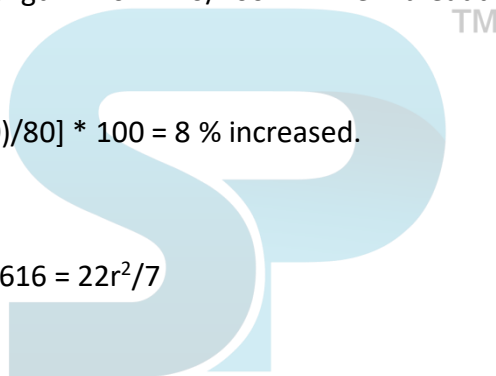
By solving the equation (1) and (2), we get, l = 40, b = 26

Area of rectangle = lb = 40 * 26 = 1040 Area of Square = 1040 − 16 = 1024 = Side^2 Side (a) = 32 m

Perimeter of square = 4 * 32 = 128 m

17. Answer: A

Explanation: Perimeter of the field = 3250/6.50 = 500 m

The ratio of length and breadth of the rectangle = 3: 2(3x, 2x)

According to the question, 2 * (3x + 2x) = 500

10x = 500

x = 50

So, length = 150 m & breadth = 100 m Difference between length & breadth

= > (150 − 100) m = 50 m

18. Answer: C

Explanation: Area of square = 784 Sq m Side of the square = 28 m

Length of the rectangle = 28 + 12 = 40 m

Breadth of the rectangle = 28 − 5 = 23 m

Area of the rectangle = 40 * 23 = 920 Sq m
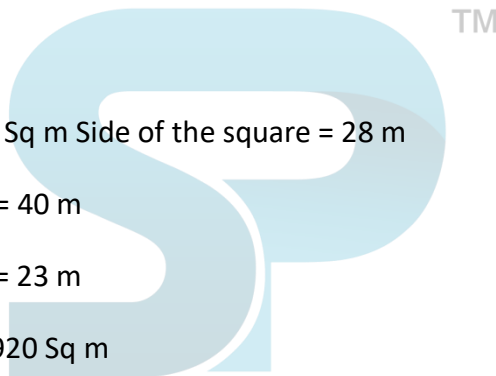
19. Answer: A

Explanation: The area of a square (a^2) = 1296 sq cm Side (a) = √1296 = 36 cm

Length of the rectangle = 36 * (1/3) = 12 cm

Breadth of the rectangle = 36 − 28 = 8 cm Perimeter of the rectangle = 2(l + b)

= > 2 * (12 + 8)

= > 40 cm

20. Answer: C

Explanation: Radius = (7/9) * side

Area of circle = πr ^{2} = 1386 (22/7) * r^2 = 1386

r^2 = 1386 * (7/22)

Radius (r) = 21 cm

Side = Radius * (9/7) = 21 * (9/7) = 27 cm Perimeter of the square = 4a

= > 27 * 4

= > 108 cm

21. Answer: D

Explanation: Area of circle

= > πr^2 = 2464

=> (22/7) * r^2 = 2464

=> r^2 = 2464 x (7/22)

=> r^2 = 784

=> r = 28 cm

Radius of the cylinder = 28/2 = 14 cm

 Height of the cylinder = 28 cm

Volume of the cylinder = $\pi r^2 h$ = (22/7) * 14 * 14 * 28

= 17248 cm^3

22. Answer: A

Explanation: The diagonal of the square is 14√2 cm

=> d = 14√2

Area of square = ½ d^2 = ½ * 196 * 2 = 196 a^2 = 196 = > a = 14

Perimeter of square = 4a = 56 cm

Perimeter of equilateral triangle = 56 + 4 = 60 cm

= > 3a = 60

= > a = 20

Area of equilateral triangle = √3/4 a^2

= > √3/4 * 20 * 20

= > 100√3 sq cm
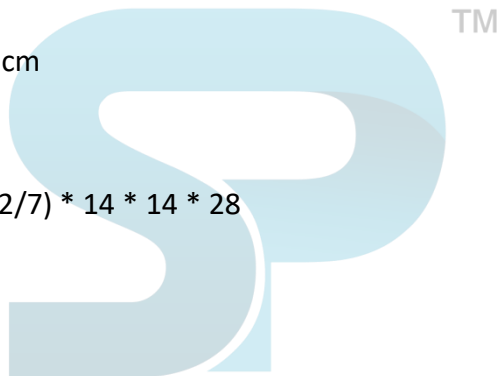
23. Answer: C

Explanation: $a^2 + lb = 496$ $14^2 + 25b$

$= 496$ $196 + 25b = 496$ $25b = 496 - 196$

$25b = 300$

$b = 12$ cm

Perimeter of square = $4a = 4 * 14 = 56$ cm

Perimeter of rectangle = $2 * (l + b) = 2 * (25 + 12)$

$=> 2 * 37 = 74$ cm

Required sum = $56 + 74 = 130$ cm

24. Answer: A

Explanation: Side of square (a) = 18 m

Perimeter of rectangle = $2 * 4a = 2 * 4 * 18 = 144$

$=> 2(b + 45) = 144$

$=> b + 45 = 72$

$=> b = 72 - 45 = 27$ m

Area of rectangle = $lb = 45 * 27 = 1215$ Sq m.
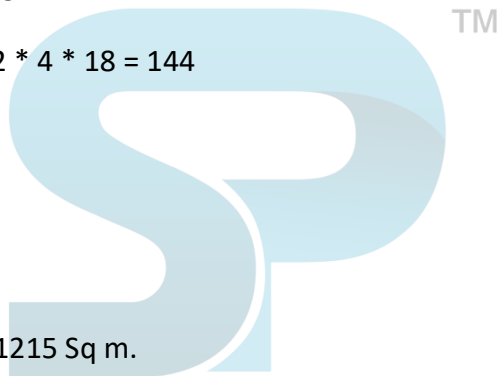
25. Answer: D

Explanation: Perimeter of square = $3780/15 = 252$ $4a = 252$

Side (a) = $252/4 = 63$

Area of square = $a^2 = 63^2 = 3969$

Cost of flooring the plot = $3979 * 3 =$ Rs. 11907

26. Answer: B

Explanation: The circumference of a circle = Perimeter of a Square Area of Square = $a^2 = 4356$

Side (a) = 66 cm

Perimeter of square = $4a = 66 * 4 = 264$ cm According to the question,

$2\pi r = 264$

2 * (22/7) * r = 264 r = 42

Area of the circle= πr^2 = (22/7) * 42 * 42 = 5544 Sq cm

27. Answer: C

Explanation: πr^2 = 1386

=> (22/7) * r^2 = 1386

=> r^2 = 1386 x (7/22)

=> r^2 = 441

=> r = 21 cm

Radius of the cylinder = 21 * (1/3) = 7 cm Height of the cylinder = 7 * 2 = 14 cm

Volume of the cylinder = $\pi r^2 h$ = (22/7) * 7 * 7 * 14 = 2156 cm^3

28. Answer: B

Explanation: The area of the equilateral triangle = 196√3 Sq cm The area of the equilateral triangle = (√3/4) * a^2 (√3/4) * a^2 = 196√3

a^2 = 196 * 4

Side (a) = 14 * 2 = 28 cm

The diameter of the circle = 28 cm Radius (r) = 14 cm

Circumference of the circle = 2πr = 2 * (22/7) * 14 = 88 cm

29. Answer: D

Explanation: Area of parallelogram = bh

Let the breadth and height of the parallelogram is 10 cm and 10cm,

Normal area = 10 * 10 = 100 New length = 10 * 130/100 = 13 New height = 10 * 80/100 = 8

 New area = 13 * 8 = 104

Required percentage = [(104 – 100)/100] * 100 = 4 % increased

30. Answer: A

Explanation: Area of a circle = πr^2 2464 = 22r^2/7

2464 * (7/22) = r^2 r^2 = 784

r = 28 m

Circumference = 2 * 22/7 * 28 = 176 sq. m Perimeter of the rectangle = 2 * 176 = 352 sq. m 352 = 2(l + 80)

176 = l + 80

l = 176 − 80

l = 96

Area of the rectangle = 96 * 80 = 7680 sq. m

31. Answer: C

Explanation: Radius = (2/5) * side Area of circle = πr^2 =616 (22/7) * r^2 = 616

r^2 = 616 * (7/22) = 196

Radius (r) = 14 cm

Side = Radius * (5/2) = 14 * (5/2) = 35 cm Perimeter of the square = 4a

= > 35 * 4

= > 140 cm

32. Answer: B

Explanation: Radius of the circular plot = 14 m

Area of the circular path = 3080/4 = 770

Area of the path = $\pi(r + x)^2 - \pi r^2$ (Here x is the width of the path)

= > (22/7) [$(14 + x)^2 - 14^2$]

= > (22/7) [$196 + 28x + x^2 - 196$]

= > (22/7) [$28x + x^2$] (22/7) [$28x + x^2$] = 770 $28x + x^2$ = 770 * (7/22)

$28x + x^2$ = 245

$x^2 + 28x - 245$ = 0 (x +35) (x - 7) = 0

x = 7 meter

33. Answer: C

Explanation: Area of square = 1156 Sq m Side of the square = 34 m

Length of the rectangle = 34 + 16 = 50 m Breadth of the rectangle = 34 – 7 = 27 m Area of the rectangle = 50 * 27 = 1350 Sq m

34. Answer: A

Explanation: The ratio between the radius to that of the height of the cylinder = 1: 3

The perimeter of the square = 112 cm 4a = 112

Side (a) = 112/4 = 28 cm

Radius of the cylinder = (1/4) * 28 = 7 cm

Volume of the cylinder = $\pi r^2 h$ = (22/7) * 7 * 7 * 21 = 3234 Sq cm

35. Answer: B

Explanation: πr^2 + lb = 991

(22/7) * 14 * 14 + 25b = 991

616 + 25b = 991

25b = 991 – 616

25b = 375

=> b = 15 cm

Circumference of circle = 2πr = 2 * (22/7) * 14 = 88 cm

Perimeter of rectangle = 2(l + b) = 2(25 + 15)

= > 2 * 40 = 80 cm

Required answer = 88 + 80 = 168 cm

36. Answer: A

Explanation: (l – b) =2 (1)

2(l + b) = 68

(l + b) = 34   (2)

(1)+(2)

2l = 36

= > l = 18 cm
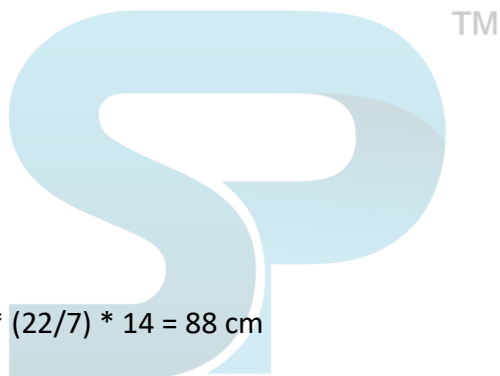
Side of the square = 18 cm Radius = 2/1 * 18 = 36 cm

Area of the circle = ∏ * 36 * 36 = 1296∏

37. Answer: D

Explanation: Perimeter of square field = 24 * 4 = 96 m Perimeter of the rectangular field = 96 * 3 = 288 m Let the length of the rectangular field be x

288 = 2 * (x + 48)

288 – 96 = 2x

x = 96 m

Area of the rectangular field = 96 * 48 = 4608 Sq. m

38. Answer: C

Explanation: Circumference of the circle = 88cm (i.e.) 2 * (22/7) * r = 88

r = 14cm

Given that, height of the cone = 2cm

Then, length of the cone = √(196 + 4) = √200 = 10√2 Thus, CSA = πrl = (22/7) * 14 * 10√2

= 440√2cm^2

39. Answer: A

Explanation: From I:

Let the breadth of the rectangle = b cm Length = (b + 2) cm

Area of rectangle = length x breadth

= > 624 = (b + 2) x b

= > b^2 + 2b – 624 = 0

= > (b – 24) (b + 26) = 0

= > b = 24, -26 (rejected)

= > Breadth = 24 cm

= > Length = 24 + 2 = 26 cm = Radius of the cylinder Let the side of the square = n cm

Area of square = (side)^2
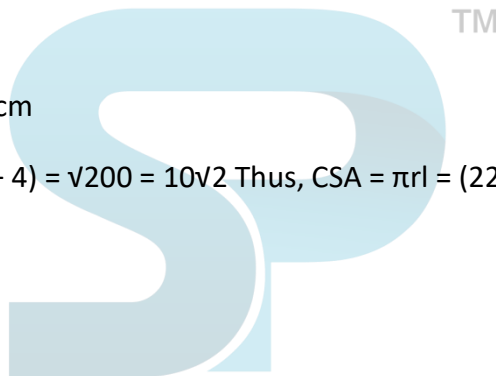
= > 441 = n^2

= > n = √441

= > n = 21 cm

Side of the square = Height of the cylinder = 21 cm Volume of cylinder = $\pi r^2 h$

= > (22/7) x 26 x 26 x 21

= > 44616 cm^3

This is satisfies the given condition. From II:

Let the breadth of the rectangle = b cm Length = (b + 2) cm

Area of rectangle = length x breadth

= > 728 = (b + 2) x b

= > b^2 + 2b − 728 = 0

= > (b − 26) (b + 28) = 0

= > b = 26, -28 (rejected)

= > Breadth = 26 cm

= > Length = 26 + 2 = 28 cm = Radius of the cylinder Let the side of the square = n cm

Area of square = $(side)^2$

= > 484 = n^2

= > n = √484

= > n = 22 cm

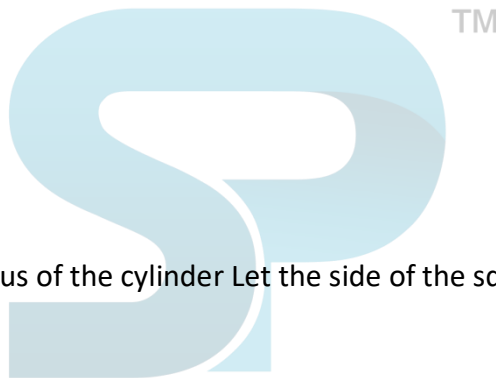Side of the square = height of the cylinder = 22 cm Volume of cylinder = $\pi r^2 h$

= > (22/7) x 28 x 28 x 22

= > 54208 cm^3

This is not satisfies the given condition. From III:

Let the breadth of the rectangle = b cm Length = (b + 2) cm

Area of rectangle = length x breadth

= > 143 = (b + 2) x b

= > $b^2 + 2b - 143 = 0$

= > $(b - 11)(b + 13) = 0$

= > b = 11, -13(rejected)

= > Breadth = 11 cm

= > Length = 11 + 2 = 13 cm = radius of the cylinder Let the side of the square = n cm

Area of square = (side)^2

= > $7056 = n^2$

= > $n = \sqrt{7056}$

= > n = 84 cm

Side of the square = height of the cylinder = 84 cm Volume of cylinder = $\pi r^2 h$

= > 22/7 x 13 x 13 x 84

= > 44616 cm^3

This is satisfies the given condition.

40. Answer: C

Explanation: Diagonal = a√2 14√2 = a√2

a = 14

Perimeter of square = 4 * 14 = 56

Volume of the cylinder = (22/7) * 14 * 14 * 56 = 34496

This not satisfies the given condition. From Option (B)

Diagonal = a√2 21 √2 = a√2

a = 21

Perimeter of square = 4 * 21 = 84

Volume of the cylinder = (22/7) * 21 * 21 * 84 = 116424

This not satisfies the given condition. From Option (C)

Diagonal = a√2 a√2 = 7√2

a = 7

Perimeter of the square = 4 * 7 = 28

Volume of the cylinder = (22/7) * 7 * 7 * 28 = 4312

This satisfies the given condition.

41. Answer: A

Explanation: Circumference of the circle is 44 cm.

44 = 2 * (22/7) * r Radius of the circle = 7 cm

The ratio of the radius of the circle to the cylinder is 1:2. So,

Radius of the cylinder = (2/1) * 7 = 14 cm Height of the cylinder = 14 + 10 = 24 cm Volume of the cylinder = πr^2 h

(22/7) * 14 * 14 * 24 = 14784 cm^3

TSA of the cylinder = $2\pi r$ (h + r)

2 * (22/7) * 14 (14 + 24) = 3344 cm^2

Radius of the cone = Radius of the circle = 7 cm Height of the cone = Height of the cylinder = 24 cm Length of the cone = $\sqrt{(24^2 + 7^2)}$ = 25 cm

CSA of the cone = $\pi r l$

22/7 * 7 * 25 = 550 cm^2

We can find answers of all the given questions.

42. Answer: E

Explanation: The area of the rectangle = lb

280 = (b + 6) * b

$b^2 + 6b = 280$

$b^2 + 6b - 280 = 0$

$b^2 + 20b - 14b - 280 = 0$

b (b + 20) - 14(b + 20) = 0

(b - 14)(b + 20) = 0

b = 14, -20(negative value neglect) Length of the rectangle = 14 + 6 = 20

Perimeter of the rectangle = 2(20 + 14) = 68 cm Diagonal of the rectangle = $\sqrt{596}$ cm

Height of the cone = √596 * 20/100 = √596/5 cm Height of the cylinder = (√596/5) * (1/3) = √596/15 cm

We cannot find the radius of the cylinder and cone.

We can find only B in the given question.

43. Answer: B

Explanation: Height of the cone = 6cm 308= 1/3 * 22/7 * r * r * 6 Radius of the cone = 7 cm

Breadth of the rectangle = 2/1 * 7 = 14 cm Perimeter of the rectangle = 2(l + b) = 68cm L = 34 − 14 = 20 cm

Area of the rectangle = 20 * 14 =2 80 Perimeter of the square * (140/100) = 280 Perimeter of the square = 200 cm

Side of the square = 50 cm

Area of the square = 50 * 50 = 2500cm^2

Slanting height of the cone (l) = √(r^2 + h^2) = √(7^2 + 6^2) = √85

Total surface area of the cone= πr(r + l)

22/7 * 7 * (7 +√85) = 154 + 22√85 cm^2

Diagonal of the rectangle = √(20^2 + 14^2) = √596 cm

C) Height of the cuboid is not given

44. Answer: C

Explanation: 25 = √[(24x)^2 + (7x)^2] = 25x

x = 1 cm

Radius of the cone = 7 * 1= 7 cm Height of the cone = 24 * 1= 24 cm

TSA of the cone = πr(r + l) = 22/7 * 7 * (25 + 7) = 704 cm^2

B) Height of the cylinder is not given. Breadth of the rectangle = 3/4 * 24 = 18 cm 2(l + 18) = 76

Length of the rectangle = 20cm

D) Radius of the cylinder is not given.

We can find the answers of A and C.

45. Answer: A

Explanation: Volume of the cone = πr^{2}h/3 1232 = 1/3 * 22/7 * 7 * 7 * h h = 24 cm

Diagonals of the rhombus = 24 − 4 = 20 cm

Other diagonals of the rhombus = 160 * 2/20 = 16 cm Slanting height of cone = √24² − 7² = 25 cm

Side of the rhombus = √(16/2)² + (20/2)² = √164 Perimeter of the rhombus = 4 * √164 = 4√164 cm CSA of cone = 22/7 * 7 * 25 = 550 cm

We can find the answers of all the given questions.

46. Answer: B

Explanation: 616 = 4 * 22/7 * r * r

Radius of the sphere = 7cm

Length of the rectangle = 10/7 * 7 = 10 cm 2 (10 + b) = 76

Breadth of the rectangle = 28 cm Area of the room = 28 * 10 = 280 cm Cost of flooring = 280 * 18 = Rs.5040

This will not satisfy the given condition. From option (B)

1232 = 4 * 22/7 * r * r

 Radius of the sphere = √98cm

Length of the rectangle = 10/7 * √98 = 10/7 * √98 cm 2 (10√98/7 + b) = 76

Breadth of the rectangle = 38 − 10/7√98 cm

This will not satisfy the given condition from option (C)

154 = 4 * 22/7 * r * r

Radius of the sphere = 3.5cm

Length of the rectangle = 10/7 * 3.5 = 5 cm 2 (5 + b) = 76

Breadth of the rectangle = 33 cm Area of the room = 33 * 5 = 165 cm Cost of flooring = 165 * 18 = Rs.2970

This will satisfy the given condition From Option (D)

2464 = 4 * 22/7 * r * r Radius of the sphere = 14cm

Length of the rectangle = 10/7 * 14 = 20 cm 2 (20 + b) = 76

Breadth of the rectangle = 18 cm Area of the room = 18 * 20 = 360 cm Cost of flooring = 360 * 18 = Rs.6480

This will satisfy the given condition.

47. Answer: A

Explanation: 24x * 7x * 12x = 2016 x = 1 cm

Breadth of the cuboid = 7 * 1= 7 cm Length of the cuboid = 24 * 1= 24 cm Height of the cuboid = 12 * 1 = 12 cm

Diagonals of the cuboid = $\sqrt{7^2 + 24^2 + 12^2}$ = √769 cm Surface area of the cuboid = 2* (24 * 7 + 7 * 12 + 24 * 12) = 1080

Height of the cone = 24 cm Radius of the cone = 7 cm

Slanting height of the cone = $\sqrt{24^2 + 7^2}$ = 25 cm Volume of the cone = 1/3 * 22/7 * 7 * 7 * 24 = 1232 cm^3

48. Answer: E

Explanation: Slanting height of the cone = $\sqrt{r^2 + (r + 17)^2}$

We cannot find the height, slanting height and radius of the cone

49. Answer: E

Explanation: 1/3 * 22/7 (r + 5) * (r + 5) * (h - 10) – 1/3 * 22/7 * r * r * h = 880

We cannot find the radius and height of the cone.

50. Answer: D

Explanation: Length = 12 + breadth l – b = 12 --à (1)

Perimeter of rectangle = 2 * (l + b) = 104 l + b = 52 --à (2)

By solving the equation (1) and (2), we get, l = 32, b = 20

Radius of the cylinder (r) = (32/2) – 2 = 14 m Height of the cylinder (h) = 20 m

Curved surface area of cylinder = 2πrh

= > 2 * (22/7) * 14 * 20= > 1760 Sq m

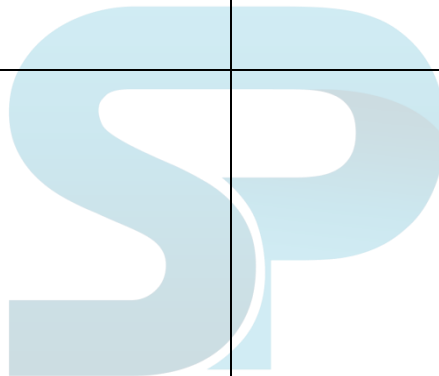## Best Books for Quantitative Aptitude for Competitive Exams

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