Appendix G

DRAFT ACHIEVEMENT TEST - I

MATHEMATICS – Standard IX

BLUE PRINT FOR DRAFT TEST - 1

WEIGHTAGE TO CONTENT

Content	No. of Questions	Percentage
Circles	7	23.33
Identities	6	20
Area	9	30
Polynomials	8	26.67
Total	**30**	**100**

WEIGHTAGE TO OBJECTIVES

Objectives	No. of Questions	Percentage
Remembering	4	13.33
Understanding	7	23.33
Applying	10	33.33
Analyzing	3	10
Evaluating	4	13.33
creating	2	6.67
Total	**30**	**100**

BLUE PRINT

Objectives / Content	Remembering	Understanding	Applying	Analyzing	Evaluating	Creating	Total
Circles	1	2	2	1	1	0	**7**
Identities	1	1	2	0	1	1	**6**
Area	1	2	3	1	1	1	**9**
Polynomials	1	2	3	1	1	0	**8**
Total	**4**	**7**	**10**	**3**	**4**	**2**	**30**

DRAFT ACHIEVEMENT TEST NO.1

MATHEMATICS – Standard IX

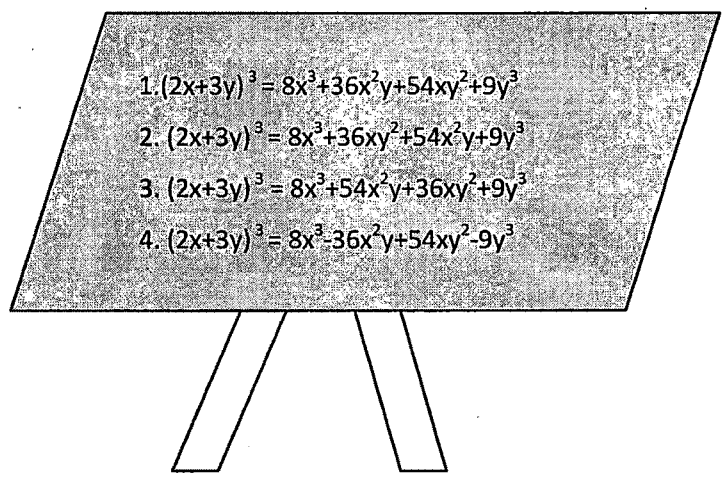
Instructions :-

1. Choose correct answer from brackets
2. All questions are compulsory
3. Each question carries 1 mark

1. Vineetha draws a number of chords in a circle which are equidistant from the centre. What she observe from the chords?

   [(a) Chords are parallel to each other, (b) Chords are equal, (c) Chords are bisect each other, (d) Chords are perpendicular to each other]

2. Lovely is in a confusion!!



   Can you help her to find the solution?

   [(a) 1, (b) 2, (c) 3, (d) 4]

3. The altitude of an equilateral triangle is $10\sqrt{3}$cm. What is its area?

   [(a) $173cm^2$, (b) $137cm^2$, (c) $136cm^2$, (d) $174cm^2$]

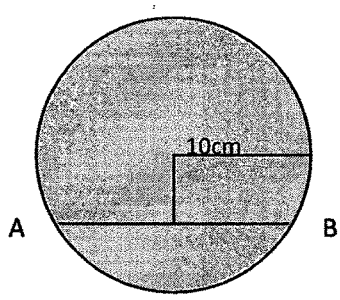
4. The following is a polynomial having degree 3.

   $P(x) = 2x^3-5x^2+7x-3$

Which one of the following is true?

[(a) $P(1) = P(0)$, (b) $P(0) > P(1)$, (c) $P(1) > P(0)$, (d) $[P(0)]^2 = P(1)$]

5. Vinay wants to find the length of the chord AB from the following figure.

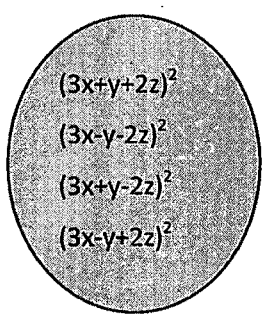


Will you help him to find the answer?

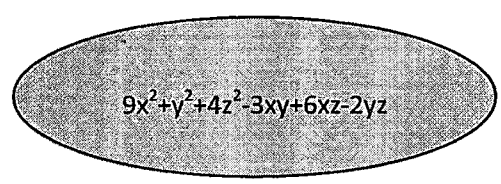
[(a) 16cm, (b) 10cm, (c) 4cm, (d) 8cm]

6. Which one of the following from set A matches to set B?

Set A

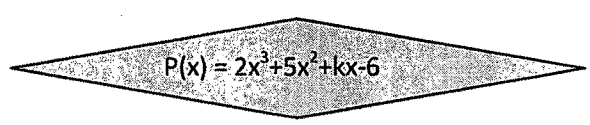


Set B



[(a) $(3x+y+2z)^2$, (b) $(3x-y-2z)^2$, (c) $(3x+y-2z)^2$, (d) $(3x-y+2z)^2$]

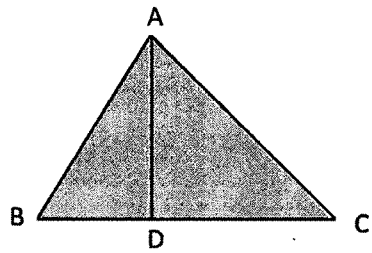
7. $P(1) = P(2)$ for the following polynomial.



What is the value of k?

[(a) 1, (b) -1, (c) 3, (d) -3]

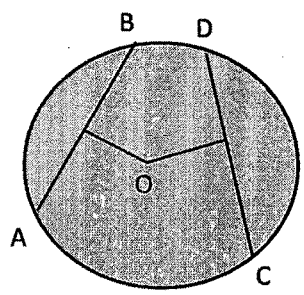
8. In ΔABC shown below, suppose AB=25cm and AC=26 cm. AD perpendicular to BC and AD=24cm.



Can you find the area of ΔABC?

[(a) 204cm^2, (b) 102cm^2, (c) 408cm^2, (d) 100cm^2]

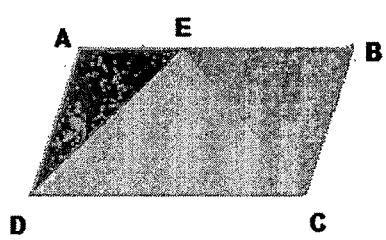
9. In the figure OM=ON and the two lines AB and CD are represented as 5x+3 and 7x+1.



What will be the value of x?

[(a) 1, (b) 3, (c) 5, (d) 7]

10. Arati divided the parallelogram ABCD in to three triangles. Also Arati found that area of parallelogram is 20 cm^2.



Now Arati want to know the area of the ΔDCE. Can you help her?

[(a) 6.67cm^2, (b) 10cm^2, (c) 15cm^2, (d) 5cm^2]

11. Among h(-2), h(-1), h(1) and h(2) which one has the larger value for the polynomial

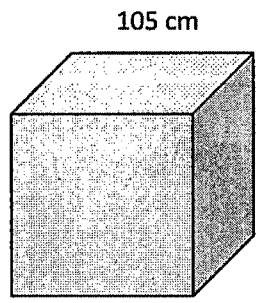
$h(x)=2x^3-3x^2-7x+3$

[(a) h(-2), (b) h(-1), (c) h(1) (d) h(2)]

12. In a circle 7cm long chord is 1cm away from the centre. What is the length of the other chord in the same circle which is 2cm away from the centre?
[(a) 3.04cm, (b) 4.08cm, (c) 5.08cm, (d) 6.08cm]

13. The Electricity Department acquired a plot in the shape of a equilateral triangle having an area 17.3 Ares. They want to put a wire fence around it. How much wire is needed if each side is to have four rows of wire?
[(a) 60√3m, (b) 80√3m, (c) 180√3m, (d) 240√3m]

14. Vivek urgently wants to know the volume of a cube having the side 105cm. What it will be?

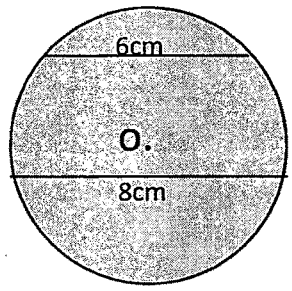


[(a) 1156725 cm^3, (b) 1000125 cm^3, (c) 1167525 cm^3, (d) 1175625 cm^3]

15. Archana divided a polynomial q(x) by 5x-3. She got the quotient as $2x^2$-x-1 and the remainder is -2. What will be q(x)?
[(a) $10x^3-11x^2-2x+5$, (b) $10x^3-x^2-2x+1$, (c) $10x^3-11x^2-2x+1$, (d) $10x^3-11x^2-2x-1$]

16. If $a^2(a+3b)=208$ and $b^2(3a+b)=135$, then what will be the value of (a+b)?
[(a) 343, (b) 7, (c) 9, (d) 73]

17. In the following figure 6cm and 8cm chords are facing the centre of a circle having radius 5cm. What is the distance between the chords?



[(a) 7cm, (b) 3cm, (c) 4cm, (d) 2cm]

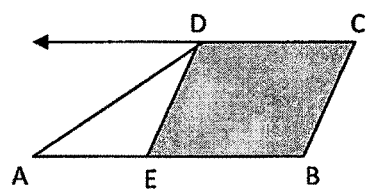
18. Ashmith walking at the speed of 3 km/hr takes 12 minutes to walk around a regular hexagonal garden. What is the area of the garden?

[(a) 25950m^2, (b) 29550m^2, (c) 25590m^2, (d) 20595m^2]

19. Fathima asked to divide a polynomial by 2x+1, instead divided by 2x-1. She got the quotient x^2-4x+3 and the remainder 2. What would have been the quotient had she done the correct problem?

[(a) x^2+3x+½, (b) x^2+½x+3, (c) x^2-3x-½, (d) x^2-½x-3,]

20. In the figure AB=32cm, EB=22cm, ED=17cmand AD=21cm. What is the area of parallelogram EBCD?

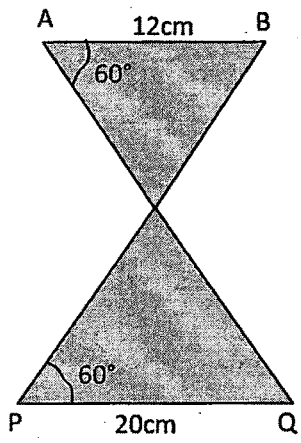


[(a) 84cm^2, (b) 369.6cm^2, (c) 396.6cm^2, (d) 360.9cm^2]

21. When $2x^3$+3x^2-4x+k is divided by x+2, the remainder obtained is 3. What is the value of 'k'?

[(a) -2, (b) -1, (c) 1, (d) 2]

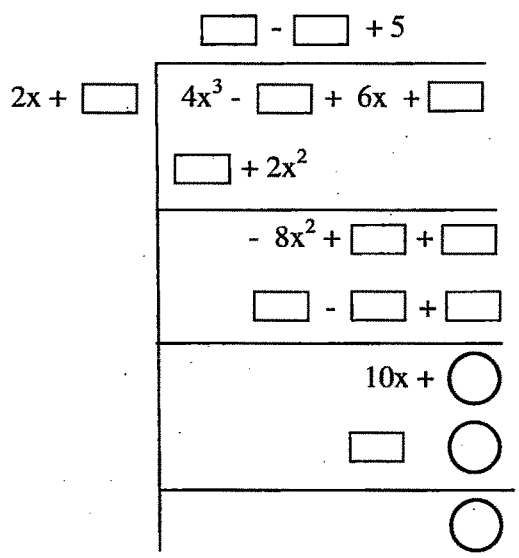
22. In the picture below, AB is parallel to PQ and ∟A = ∟P = 60°. Also AB = 12cm and PQ = 20cm.



What is the distance between AB and PQ?

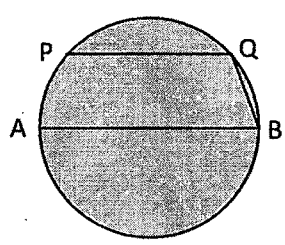
[(a) 27.68cm, (b) 27.86cm, (c) 25.39cm, (d) 25.93cm]

23. In the division shown below identify the missing terms indicated by blank circles.



[(a) 10, 5, 5, (b) 8, 6, 2, (c) 7, 7, 0, (d) 5, 5, 0]

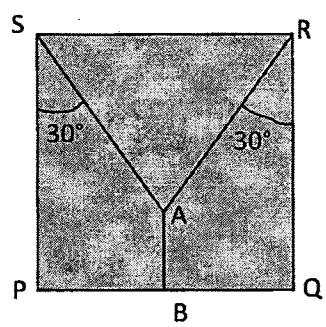
24. In the picture below, PQ is a chord parallel to the diameter AB.



If AB = 50cm and PQ = 14cm, find BQ.

[(a) 20cm, (b) 49cm, (c) 25 cm, (d) 30 cm]

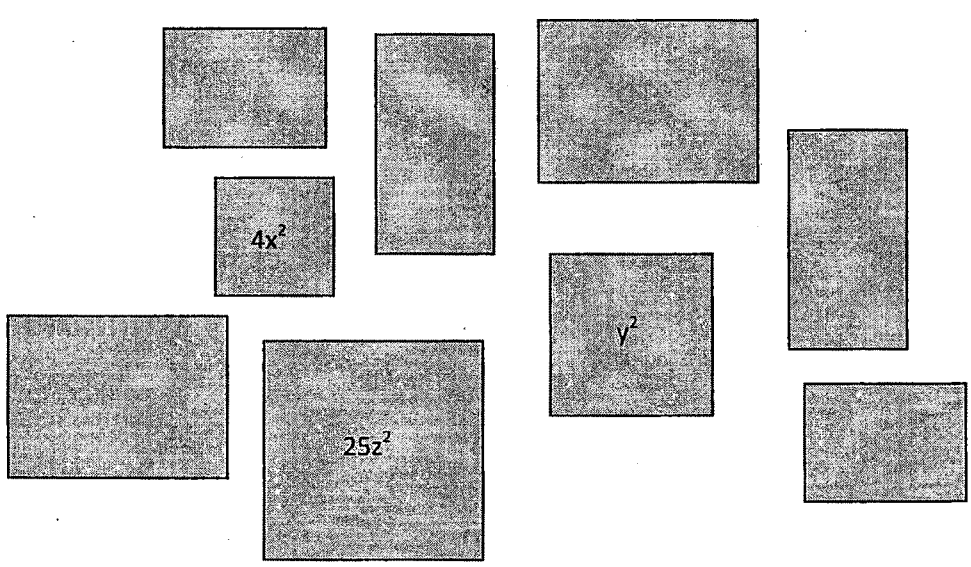
25. In the picture below, PQRS is a square and ∠PSA = ∠QRA = 30°. The perpendicular from A to PQ meets it at B,



If the perimeter of the square is 160cm, what is the length of AB?

[(a) 5.4 cm, (b) 4.5cm, (c) 6.5cm, (d) 5.6cm]

26. The following are some squares and rectangles. The three squares are labeled as $4x^2$, y^2 and z^2.



By rearranging these squares and rectangle you will get an identity. Identify it?

[(a) $(2x+5z)^2+y^2 = 4x^2+y^2+25z^2+20xz$,

(b) $(4x+y+25z)^2 = 4x^2+y^2+25z^2+20xz+ 8xy+10yz$,

(c) $(2x+y+5z)^2 = 4x^2+y^2+25z^2+20xz+ 10xy+8yz$,

(d) $(2x+y+5z)^2 = 4x^2+y^2+25z^2+20xz+ 8xy+10yz$]

27. Which of the following is statement is not true?

(a) The perpendicular bisectors of the three sides of a triangle meet at a point.

(b) The perpendicular from the centre of a circle to a chord bisects the chord.

(c) All chords of the same length in a circle are at the same distance from the centre.

(d) The line joining the centre of a circle to the midpoint of a chord is parallel to the chord.

28. Which one of the following is true?

(a) $(2x+1/2)^3=8x^3+6x^2+3x+1/8$

(b) $(3p-4q)^3=27p^3-108p^2q+144pq^2-64p^3$

(c) $8x^3+1/27=(2x-1/3)(4x^2-2x/3+1/9$

(d) $(a-3b+2c)^2=a^2+9b^2-4c^2-6ab-12bc+4ac$

29. Which one of the following statement is not correct?

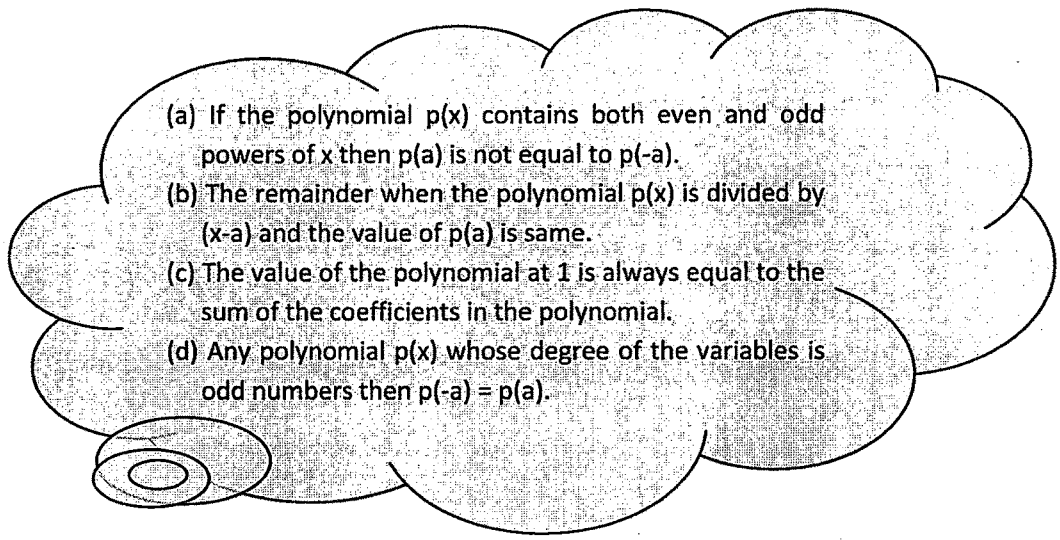
(a) If two triangles have a common altitude, then their areas are proportional to their bases.

(b) Two altitudes of a triangle are equal then it is isosceles.

(c) The area of an equilateral triangle having side 'a' is $(\sqrt{3}/2)a^2$,

(d) If two triangles have a common base and stand between the same pair of parallel lines.

30. Which one of the following statement is not correct?



(a) If the polynomial p(x) contains both even and odd powers of x then p(a) is not equal to p(-a).

(b) The remainder when the polynomial p(x) is divided by (x-a) and the value of p(a) is same.

(c) The value of the polynomial at 1 is always equal to the sum of the coefficients in the polynomial.

(d) Any polynomial p(x) whose degree of the variables is odd numbers then p(-a) = p(a).

DRAFT ACHIEVEMENT TEST - II

MATHEMATICS – Standard IX

BLUE PRINT FOR DRAFT TEST - II

WEIGHTAGE TO CONTENT

Content	No. of Questions	Percentage
Mensuration of circles	12	40
Prisms	11	36.67
Similar triangles	7	23.33
Total	**30**	**100**

WEIGHTAGE TO OBJECTIVES

Objectives	No. of Questions	Percentage
Remembering	4	13.33
Understanding	7	23.33
Applying	9	30
Analyzing	4	13.33
Evaluating	3	10
creating	3	10
Total	**30**	**100**

BLUE PRINT

Objectives / Content	Remembering	Understanding	Applying	Analyzing	Evaluating	Creating	Total
Mensuration of Circles	1	3	4	2	1	1	**12**
Prisms	2	3	3	1	1	1	**11**
Similar Triangles	1	1	2	1	1	1	**7**
Total	4	7	9	4	**3**	3	**30**

DRAFT ACHIEVEMENT TEST NO.2

MATHEMATICS – Standard IX

Instructions :-

1. Choose correct answer from brackets
2. All questions are compulsory
3. Each question carries 1 mark

31. Aheli found that the volume of a cubical vessel is 1728 cm^3. What is its surface area?
[(a) 148 cm^2, (b) 864 cm^2, (c) 846 cm^2, (d) 184 cm^2]

32. A wire 1256 cm long bent in to a circle. What is the area enclosed in it?
[(a) 125600 cm^2, (b) 12560 cm^2, (c) 628000 cm^2, (d) 62800 cm^2]

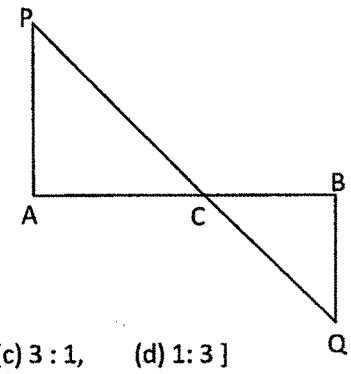
33. A tank in the shape of a rectangular prism has dimensions 4.2 m, 1.5 m, and 1.2 m. How many litres of water can contain it?
[(a) 7.56 litres, (b) 75.6 litres, (c) 756 litres, (d) 7560 litres]

34. If the areas of two similar triangles are 81cm^2 and 100cm^2, then what is the ratio of their perimeters?
[(a) 3:5, (b) 9:10, (c) 27:15, (d) 3:4]

35. If the diameter of a circle is doubled, how many times then will be the new area by the original area?
[(a) 2, (b) 3, (c) 4, (d) 6]

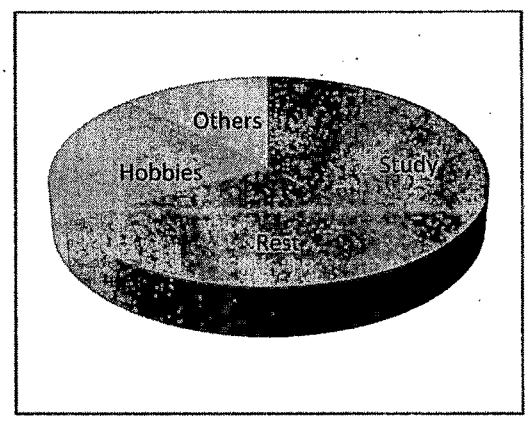
36. In a historical monument a pillar is found to be in the shape of a rectangular prism of length 220cm and breadth 180cm. If its lateral surface area is equal to the sum of the base areas then what will be its height?
[(a) 990cm, (b) 99cm, (c) 188cm, (d) 1880cm]

37. In the figure below, AP and BQ are perpendicular to AB. Suppose that AP = 4cm and BQ = 2cm . What will be AC : CB



[(a) 1 : 2, (b) 2 : 1, (c) 3 : 1, (d) 1: 3]

38. The following is the pie chart showing the daily time schedule of Aditya. The central angle of the sector representing the study is found to be 135°.



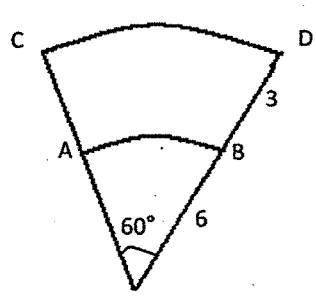
How much time does Aditya spend for the study?

[(a) 6hrs, (b) 7hrs, (c) 8hrs, (d) 9hrs]

39. A water tough is in the shape of a trapezoidal prism of length 2 meters. Its top edge is 90cm long and the bottom edge is 60 cm long. If it is 45cm deep then how many litters of water does it contain?

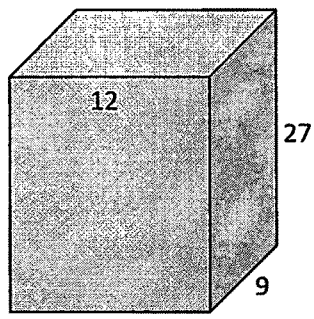
[(a) 6.75 litres, (b) 67.5 litres, (c) 675 litres, (d) 6750 litres]

40. In the figure, what is the difference in the lengths of arcs AB and CD.



[(a) 6.28 cm, (b) 3.14 cm, (c) 9.42 cm, (d) 13.7 cm]

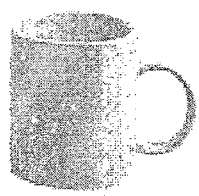
41. Ashita has a rectangular block of wood of length 12cm, breadth 9cm and height 27cm.



She cut a largest square prism from it. What will be its surface area?

[(a) 1134cm^2, (b) 972cm^2, (c) 927cm^2, (d) 1143cm^2]

42. The handle of a coffee mug is a circular arc of length 9cm.



If it makes an angle of 176° with the centre of the circle from which it is cut off. What is the radius of this circle?

[(a) 3.04cm, (b) 2.9cm, (c) 2.83cm, (d) 3.14cm]

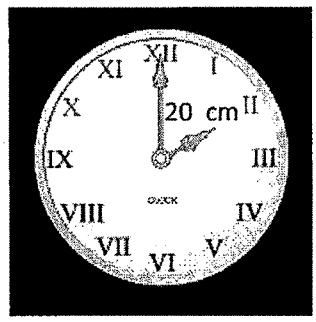
43. A boy 1.2 meters tall standing 2.5 meters away from a street lamp casts shadow 1.5 meters long. What is the height of the lamp post?

[(a) 3.1 cm, (b) 1.3 cm, (c) 2.3 cm, (d) 3.2 cm]

44. A ballot box is in the shape of a square prism with each side of the base 30cm long and height 45cm. Two such boxes are to be given to each booth in a constituency with 380 polling booths. If the price of one square meter of iron costs Rs.75/-, how much money is needed for making these ballot boxes?

[(a) Rs.41040, (b) Rs.44010, (c) Rs.40140, (d) Rs.44100]

45. The minute hand of the following clock is 20cm long.



What is the area it sweeps from 2.00 pm to 2.15 pm?

[(a) 314cm^2, (b) 693cm^2, (c) 639cm^2, (d) 341cm^2]

46. A cylindrical copper pipe is 2 meters long. Its outer diameter is 10cm and its thickness is 1cm. How many cubic centimeters of copper are used to make it?

[(a) 5652cc, (b) 5256cc, (c) 5526cc, (d) 2565cc]

47. If the length of each side of a triangle is doubled, then how many times the area will increase?

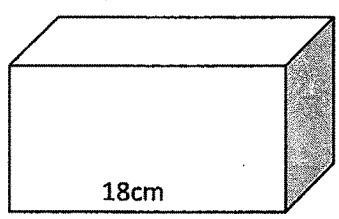
[(a) 2 times, (b) 4 times, (c) 6 times, (d) 8 times]

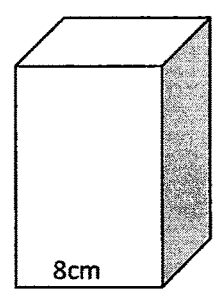
48. Matilda have bicycle with radius of the wheel is 34 cm.

How far does she travel when the wheel make 5 complete rotation?

[(a) 10.6m, (b) 9.6m, (c) 30m, (d) 29m]

49. Each side of a metal cube is 18cm long. It is melted and recast in to a square prism with each side of the base 8cm long.

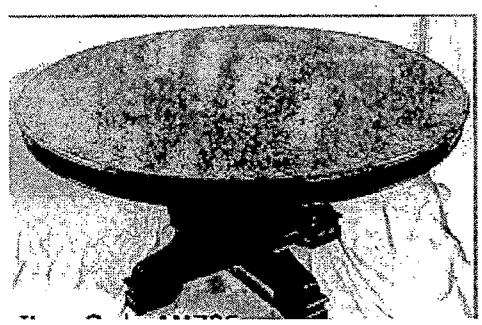




What is the change in the surface area?

[(a) 3044cm^2, (b) 1944cm^2, (c) 1602cm^2, (d) 1100cm^2]

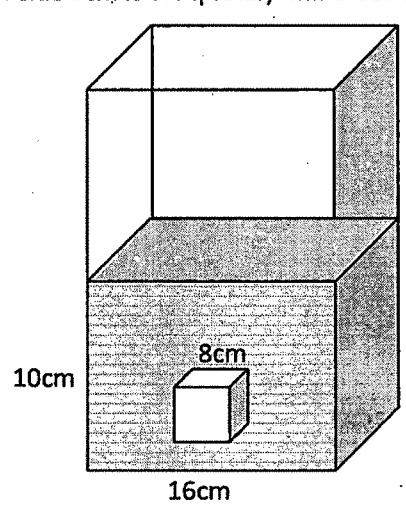
50. Aparna has a circular dining table with 6.16 sq.m area.



She wants to cover the edge of the border with a wooden rod for a good look. What length of wooden rod should be she bought to make it?

[(a) 6.8m, (b) 7.8m, (c) 8.8m, (d) 9.8m]

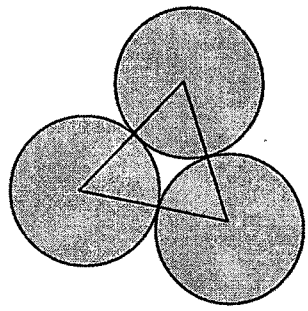
51. A vessel in the shape of a square prism with each side of base 16cm contains water 10cm high. If a cube of side 8cm is completely immersed in it.



How much will the water level rise?

[(a) 1cm, (b) 2cm, (c) 3cm, (d) 4cm]

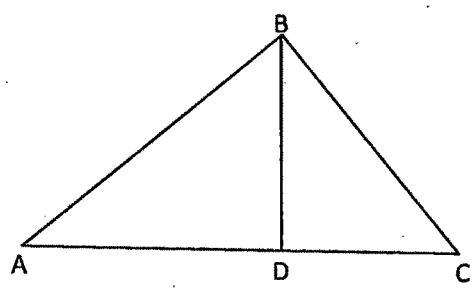
52. With each vertex of an equilateral triangle as centre a circle is drawn as shown in the picture.



If the area of the triangle is 17300 sq.cm, then what is the area of the white portion inside the triangle?

[(a) 1600cm^2, (b) 1700cm^2, (c) 15700cm^2, (d) 15600cm^2]

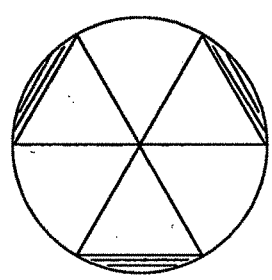
53. ΔABC is a right angled triangle with ∠B = 90°. The altitude through B meets AC at D.



What do you observe?

[(a) ΔABC ~ ΔADC, (b) ΔABC ~ ΔBDC, (c) ΔBDC ~ ΔADC, (d) Above three are right]

54. In the picture, the diameter of the circle is 12 cm and the three triangles are equilateral with sides equal to the radius of the circle.



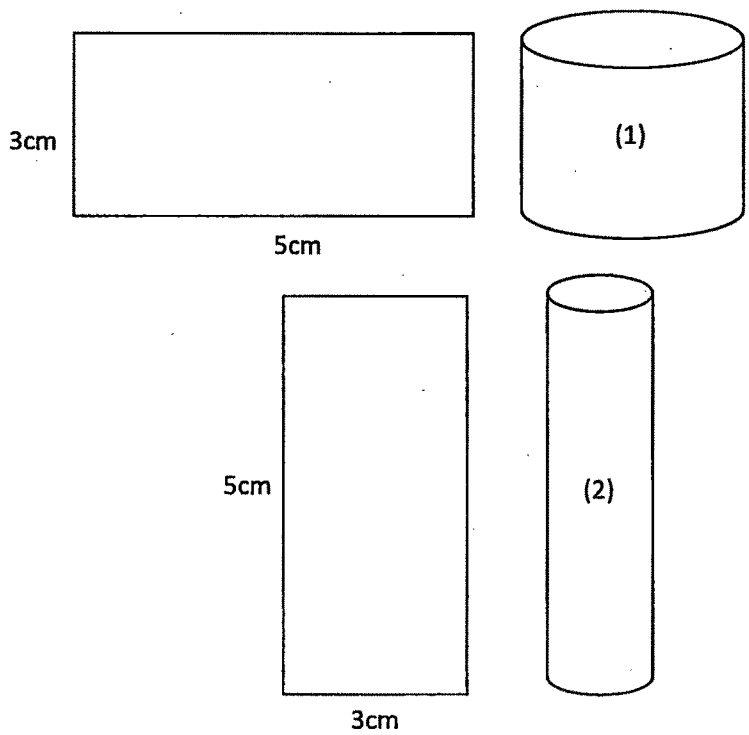
Find the area of the shaded portion of the picture.

[(a) 15.57cm^2, (b) 15.75cm^2, (c) 9.81cm^2, (d) 9.18cm^2]

55. Which of the following is statement is not true?

(a) If two triangles are similar, then their perimeters are proportional to a pair of sides opposite equal angles.
(b) In two similar triangles, the ratio of two sides opposite to equal angles is equal to the ratio of altitudes of these sides.
(c) The areas of two similar triangles is proportional to the square of a pair of sides opposite equal angles.
(d) If two triangles are similar, then their perimeters are proportional to a pair of angle bisectors.

56. Arun made two cylinders with the rectangular cardboard having length 5cm and breadth 3cm in the following way.



What he observed regarding the volume of the two cylinders?

[(a) Volume of cylinder (1) > Volume of cylinder (2),

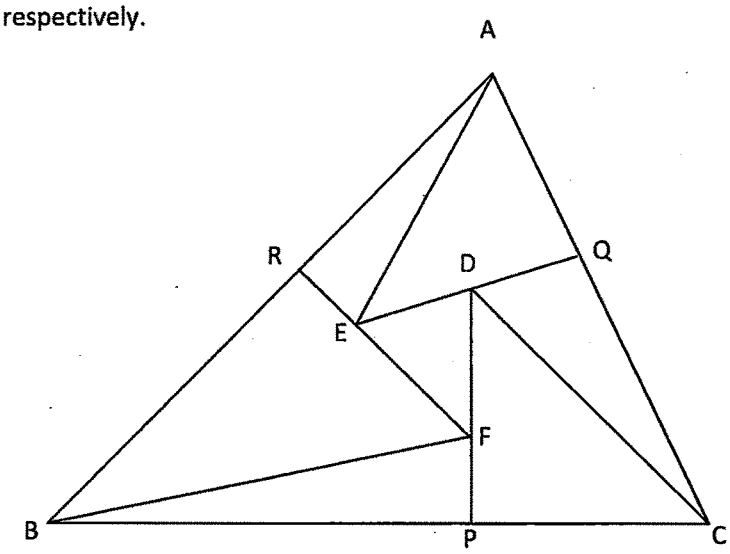
(b) Volume of cylinder (1) < Volume of cylinder (2),

(c) Volume of cylinder (1) = Volume of cylinder (2), (d) None of these]

57. Which of the following is statement is not true?

(a) If the radius of one circle half that of another circle, then the ratio of their areas will be 2:1.
(b) The perimeter of a circle is proportional to the diameter.
(c) The length of an arc and the area of a sector in a circle are both proportional to the central angle
(d) If the radius of a circle is increased by 50%, then the area increased by 125%.

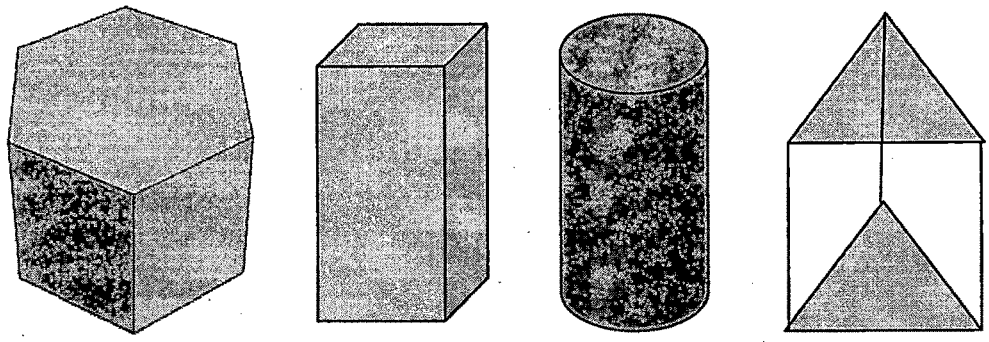
58. In ΔABC shown in the picture, PD, QE, and RF are perpendiculars to the sides BC, CA and AB respectively.



What is your conclusion?

[(a) ΔABC ~ ΔDEF, (b) ΔABC ~ ΔBRF, (c) ΔABC ~ ΔCPD, (d) ΔABC ~ ΔAQE]

59. The following Cylinder, Square prism, Regular hexagonal prism and Equilateral prism having the same base perimeter and height. Arrange them in ascending order according to their volume.



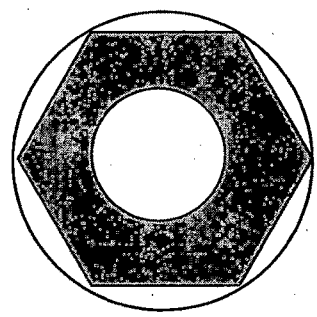
[(a) Equilateral prism - Square prism – Cylinder - Regular hexagonal prism,

(b) Equilateral prism - Square prism - Regular hexagonal prism - Cylinder,

(c) Equilateral prism - Regular hexagonal prism - Square prism - Cylinder,

(d) Equilateral prism– Cylinder - Square prism - Regular hexagonal prism,]

60. The picture shows the cross section of an iron bolt. If the circumference of the outer circle is 16Π and the circumference of the inner circle is 12Π, find the area of the shaded portion in the picture.



[(a) 52cm^2, (b) 53cm^2, (c) 54cm^2, (d) 55cm^2]