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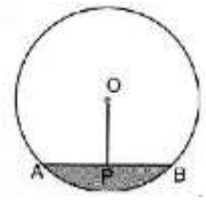
CBSE
Class IX Mathematics
Term 1
Sample Paper - 2

Q1. At what point the graph of the linear equation 4x-3y = 12 cuts y-axis?

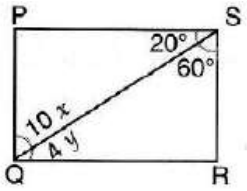
(A) (0,-4)
(B) (4,-0)
(C) (2,-4)
(D) (4,-4)

Q2. In figure, O is the centre of the circle and PA= PB, find ∠OPA.



(A) 45°
(B) 90°
(C) 95°
(D) 100°

Q3. In the given figure PQRS is a parallelogram. Find the value



(A) x = 5°, y = 6°
(B) x = 4° , y 7°
(C) x = 6° , y = 5°
(D) x = 9° , y = 2°

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Q4. What is the volume of right circular cylinder, whose base area is 606 cm^2 and height is 2 m?

(A) 121100 cm^3
(B) 121300 cm^3
(C) 121010 cm^3
(D) 121200 cm^3

Q5. Find the value of 3x+1, if median of 2, 3, x, x+2, 11, 17 is 9. (The observations are arranged in ascending order of magnitude.)

(A) 24
(B) 23
(C) 25.3
(D) 25

Q6. The surface area of a sphere of radius 5cm is five times the curved surface area of a cone of radius 4cm. find the height of the cone.

(A) 4
(B) 5
(C) 3
(D) 2

Q7. The total cost of making a solid spherical ball is Rs.33,97 at the rate of Rs 7 per cubic meter. Find the radius of this ball.

(A) 10.5 m
(B) 10.4 m
(C) 10.55 m
(D) 10.3 m

Q8. For the data 3, 21 25, 17 (x+3), 19 (x-4) if mean is 18, find the value of x and hence, find the mole of the data.

(A) 16
(B) 16.5
(C) 17.2
(D) 17

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Q9. Three coins are tossed simultaneously 1000 times and the following observations are made. Three leads = 216 times, two heads= 384 times, 1 head =270 times, no head = 130 times. If coins are tossed once again, find the probability of non-occurrence of exactly 2 heads.

(A) 0.615
(B) 0.616
(C) 0.617
(D) 0.618

Q10. The weight of 60 persons in a group are given below:

Weight (in kg)	60	61	62	63	64	65
No. of persons	5	18	4	16	5	12

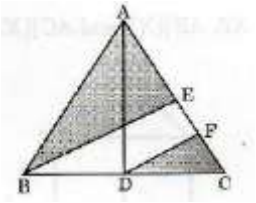
Find the probability that a person selected at random has Weight less than 65kg

(A) 4/3
(B) 5/4
(C) 4/5
(D) 6/5

Q11. The monthly hostel charges for a student comprises of Rs 1000 p.m as fixed boarding charges and remaining charges at the rate of Rs50 per day (for the no. of days for which the food has been availed by a student) what are the monthly charges to be paid by a student who availed meals for 21 days in given month?

(A) 2040
(B) 2030
(C) 2050
(D) 2045

Q12. In figure, AD and BE are medians BE || DF. Which of the following is correct?



(A) CF = ½ Ac
(B) CF = 1/8 AC
(C) CF = ¼ AC
(D) CF = 1/6 AC

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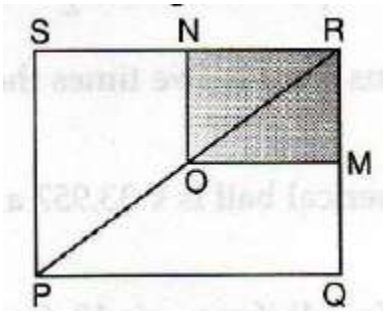
Q13. PQRS is a square. N and M are the mid-points of sides SR and QR respectively. O is a point on diagonal PR such that OP=OR. Also find the ratio of ar (ΔORM) and ar (PQRS)



(A) 1/7
(B) 1/9
(C) 1/6
(D) 1/8

Q14. Rain water which falls on a flat rectangular surface of length 6 m and breadth 4 m is transferred into a cylindrical vessel of internal radius 120cm. what will be the height of water in the cylindrical vessel if the rain fall is 1 cm? give your answer to the nearest whole number.(use π= 3.14)

(A) 190.9 cm
(B) 190.8 cm
(C) 190. 7 cm
(D) 189.9 cm

Q15. A small indoor green house is made entirely of glass panes (including base) held together with tape. It is 30 cm long, 25 cm wide and 25 cm high. What is the area of the glass? How much tape of width 10 cm is required for all the 12 edges?

(A) 320
(B) 230
(C) 310
(D) 340

Q16. If $\sqrt{x}$ is an irrational number then x is:

(A) Rational
(B) Irrational
(C) 0
(D) Positive real

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Q17. Two lines PR and QS intersect each other at O. if $\angle POQ: \angle QOR = 2:3$. Find $\angle POS$.

(A) 144°
(B) 72°
(C) 108°
(D) 216°

Q18. What should be added to $x^2 + 2x + 0.5$ to make it a perfect square?

(A) 0.5
(B) 0.6
(C) 0.4
(D) 0.1

Q19. A measure of the number of square units needed to cover the outside of a figure is called…

(A) Volume
(B) Area
(C) Surface
(D) Curved surface area

Q20. Find the remainder when $x^{11} + 1$ is divided by $x + 1$.

(A) 1
(B) -1
(C) -2
(D) 0

Q21. If x+y+z=9 then find the value of $(3 - x)^3 + (3 - y)^3 + (3 - z)^3 - 3(3 - x)(3 - y((3 - z)$.

(A) -2
(B) -1
(C) 0
(D) 1

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Q22. In figure 8, AB|| CD and CD || EF, Also, EA ⊥ AB. If $\angle BEF = 55°$. Find the values of x, y and z.

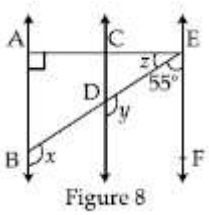


Figure 8

(A) 120°
(B) 130°
(C) 125°
(D) 115°

Q23. If a and b are rational numbers, find the value of a and b.

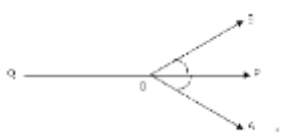
$$\frac{\sqrt{3}+1}{\sqrt{3}+1} = a + b\sqrt{3}$$

(A) a = -1, b = 2
(B) a = 2 , b = -1
(C) a = -2, b = -1
(D) a = 2 , b = 1

Q24. A jigsaw puzzle is made of triangular pieces. Each piece is an isosceles triangle with base 8 cm and perimeter 18 cm. find the number of pieces that can be fitted on 16×9 cm rectangular board

(A) 11
(B) 13
(C) 12.5
(D) 12

Q25. In the given figure PQ is a straight line. OP bisects $\angle AOB$. Find the relation between $\angle BOQ$ and $\angle AOQ$.



(A) $\angle BOQ = \angle AOQ$
(B) $\angle OBQ = \angle OAQ$
(C) $\angle POA = \angle PBO$
(D) $\angle BQO = \angle AQO$

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Q26. Factorize: $a^{12} \times^4 - a^4 \times^{12}$

(A) $a^4x^4(a^4 + x^4)a^2 + x^2(a + x)(a - x)$

(B) $a^4x^4(a^4 - x^4)a^2 + x^2(a + x)(a - x)$

(C) $a^4x^4(a^4 + x^4)a^2 + x^2(a + x)(a + x)$

(D) $a^4x^4(a^4 + x^4)a^2 - x^2(a + x)(a - x)$

Q27. In figure 9, ABC is a triangle with $\angle BAC = 90°$ and $AL \perp BC$ which of the following is correct?

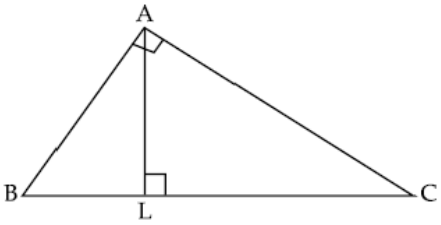

Figure 9

(A) $\angle ACB = \angle CBA$

(B) $\angle ACB = 3\angle LCBA$

(C) $\angle CAL = \angle ABL$

(D) $\angle CAL = \angle ABC$

Q28. A car starts the center of city and in each consecutive hour it covers a distance of 20 km (along north), 16 km (along east), 24 kmm (along south) and 20 km (along west) respectively. Assuming the centre of city to be the origin, north-south direction is along y axis and west-east direction is along x axis, find how far is the car from x and y axis respectively at its final position.

(A) x = 4, y = -4

(B) x = - 4 , y = - 4

(C) x = - 4 , y = - 3

(D) x = 4 = y = -2

Q29. Find the values of a and b so that the polynomial $x^3 - ax^2 - 13x + b$ has $x - 1$ divisible by $x^2 + 3x + 2$

(A) - 15

(B) 15

(C) -14

(D) 14

Q30. If $x = \frac{\sqrt{3}+\sqrt{2}}{\sqrt{3}-\sqrt{2}}$ and $y = \frac{\sqrt{3}-\sqrt{2}}{\sqrt{3}+\sqrt{2}}$, find the value of $x^2 + y^2$

(A) 99

(B) 97

(C) 98

(D) 100