1. The order of the differential equation of all circles whose radius is 4, is
(A) 1
(B) 2
(C) 3
(D) 4

2. It is observed that 25 % of the cases related to child labour reported to the police station are solved. If 6 new cases are reported, then the probability that atleast 5 of them will be solved is
(A) $(1/4)^6$
(B) 19/1024
(C) 19/2048
(D) 19/4096

3. A bag contains 6 white and 4 black balls. Two balls are drawn at random. The probability that they are of the same colour is
(A) 5/7
(B) 1/7
(C) 7/15
(D) 1/15

4. A stone is dropped into a pond. Waves in the form of circles are generated and the radius of outermost ripple increases at the rate of 5 cm/sec. Then area increased after 2 seconds is
(A) 100 Π cm2/sec
(B) 40cm2/sec
(C) 50cm2/sec
(D) 25cm2/sec

5. If G (3,-5,r) is centroid of triangle ABC where A (7,-8,1), B (p,q, 5) and C (q+1,5p,0) are vertices of a triangle then values of p,q,r are respectively
(A) 6 , 5 , 4
(B) -4 , 5 ,4
(C) -3 , 4 , 3
(D) -2 , 3 , 2

6. Which of the following equations has no solution ?
(A) sec θ= 23
(B) cosθ = √2
(C) tanθ = 2019
(D) sinθ = -1/5

7. The joint equation of the lines passing through the origin and trisecting the first quadrant is
(A) $\sqrt{3}x^2 - 4xy + \sqrt{3}y^2 = 0$
(B) $x^2 + \sqrt{3}xy - y^2 = 0$
(C) $3x^2 - y^2 = 0$
(D) $x^2 - \sqrt{3}xy - y^2 = 0$

8. If the lengths of the transverse axis and the latus rectum of a hyperbola are 6 and 8/3 respectively, then the equation of the hyperbola is
(A) $4x^2 - 9y^2 = 72$
(B) $4x^2 - 9y^2 = 36$
(C) $9x^2 - 4y^2 = 72$
(D) $9x^2 - 4y^2 = 36$

9. If f(x) = 3x3 - 9x2 - 27x + 15, then the maximum value of f(x) is
(A) -66
(B) 30
(C) -30
(D) 66

10. The minimum value of z = 10x +25y subject to $0 \leq x \leq 3$, $0 \leq y \leq 3$, $x+y \geq 5$ is
(A) 80
(B) 95
(C) 105
(D) 30

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