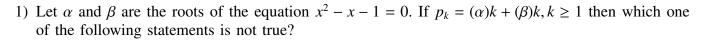
Remark

Jan 7 S2 16-30

EE24BTECH11051 - Prajwal



a)
$$(p_1 + p_2 + p_3 + p_4 + p_5) = 26$$

c)
$$p_5 = p_2 * p_3$$

b)
$$p_5 = 11$$

c)
$$p_5 = p_2 * p_3$$

d) $p_3 = p_5 - p_4$

2) The area of the region $\{(x, y) \in R | 4x^2 \le y \le 8x + 12 \}$ is :

a)
$$\frac{125}{3}$$

c)
$$\frac{124}{2}$$

b)
$$\frac{128}{3}$$

c)
$$\frac{124}{3}$$
 d) $\frac{127}{3}$

3) The value of c in Lagrange's mean value theorem for the function $f(x) = x^3 - 4x^2 + 8x + 11$, where $x \in [0, 1]$ is

a)
$$\frac{(4-\sqrt{7})}{3}$$
 b) $\frac{2}{3}$

c)
$$(\sqrt{7}-2)$$

b)
$$\frac{2}{3}$$

c)
$$\frac{(\sqrt{7}-2)}{3}$$

d) $\frac{(4-\sqrt{5})}{3}$

4) Let y = y(x) be a function of x satisfying $y(\sqrt{1-x^2}) = k - x(\sqrt{1-y^2})$ where k is a constant and y(1/2) = -1/4. Then $\frac{dy}{dx}$ at $x = \frac{1}{2}$ is equal to:

a)
$$\frac{-\sqrt{5}}{2}$$
 b) $\frac{\sqrt{5}}{2}$

c)
$$\frac{-\sqrt{2}}{4}$$

b)
$$\frac{\sqrt{5}}{2}$$

c)
$$\frac{-\sqrt{5}}{4}$$
 d) $\frac{2}{\sqrt{5}}$

5) Let the tangents drawn from the origin to the circle, $x^2 + y^2 - 8x - 4y + 16 = 0$ touch it at the points A and B. The $(AB)^2$ is equal to

a)
$$\frac{32}{5}$$

c)
$$\frac{52}{5}$$
 d) $\frac{56}{5}$

6) If system of linear equations

$$x + y + z = 6 \tag{1}$$

$$x + 2y + 3z = 10 (2)$$

$$3x + 2y + \lambda z = \mu \tag{3}$$

has more than two solutions, then $\mu - \lambda^2$ is equal to

7) If the function f defined on $\left(\frac{-1}{3}, \frac{1}{3}\right)$ by $f(x) = \begin{cases} \left(\frac{1}{x}\right) \log\left(\frac{1+3x}{1-2x}\right) & \text{if } x \neq 0 \\ k & \text{if } x = 0 \end{cases}$ is continuous, then k is equal to

- 8) If the foot of perpendicular drawn from the point (1,0,3) on a line passing through $(\alpha,7,1)$ is $\left(\frac{5}{3}, \frac{7}{3}, \frac{17}{3}\right)$ then α is equal to:
- 9) If the mean and variance of eight numbers 3, 7, 9, 12, 13, 20, x and y be 10 and 25 respectively then xy is equal to

10) Let $X = \{n \in N : 1 \le n \le 50\}$. If $A = \{n \in N : n \text{ is a multiple of } 2\}$ and $B = \{n \in N : n \text{ is a multiple of } 7\}$, then the number of elements in the smallest subset of X containing both A and B is .