JEEM - 8Jan2020 - Shift2 - 16-30

ai24btech11030 - Shiven Bajpai

1) The area (in sq. units) of the region $(x, y) \in \mathcal{R}$: $x^2 \le y \le 3 - 2x$, is: (8 Jan 2020 -

2) Let S be the set of all functions $f:[0,1] \to \mathcal{R}$, which are continuous on [0,1] and differentiable on (0,1). Then for every f in S, there exists a $c \in (0,1)$, depending on

3) The differential equation of the family of curves, $x^2 = 4b(y + b)$, $b \in \mathcal{R}$, is:

c) $\frac{29}{3}$

d) $\frac{34}{3}$

c) |f(c) + f(1)| < (1+c)|f'(c)|d) |f(c) - f(1)| < (1-c)|f'(c)|

c) x(y') 2 = x - 2yy'

d) x(y') 2 = 2yy' - x

(8 Jan 2020 - S2)

b) $\frac{32}{3}$

S2)

a) $\frac{31}{2}$

f, such that:

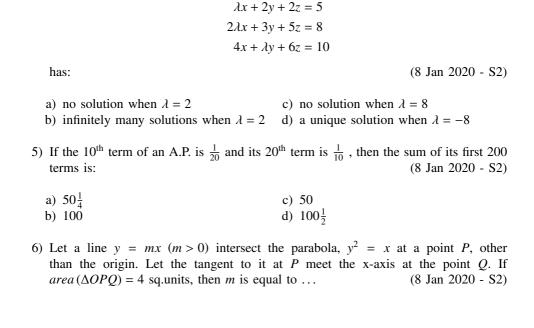
2020 - S2)

a) xy'' = y'

b) x(y') 2 = x + 2yy'

4) The system of linear equations

a) $\frac{(f(1)-f(c))}{(1-c)} = f'(c)$ b) |f(c)-f(1)| < |f'(c)|



- 7) Let f(x) be a polynomial of degree 3 such that f(-1) = 10, f(1) = -6, f(x) has a critical point at x = -1 and f'(x) has a critical point at x = 1. Then the local minima at $x = \dots$ (8 Jan 2020 S2)
- 8) $\frac{\sqrt{2}\sin\alpha}{\sqrt{1+\cos2\alpha}} = \frac{1}{7}$ and $\sqrt{\frac{1-\cos2\beta}{2}} = \frac{1}{\sqrt{10}}$, $\alpha, \beta \in (0, \frac{\pi}{2})$, then $\tan(\alpha + 2\beta)$ is equal to ... (8 Jan 2020 S2)
- 9) The number of 4 letter words (with or without meaning) that can be made from the eleven letters of the word "EXAMINATION" is ... (8 Jan 2020 S2)
- 10) The sum, $\sum_{n=1}^{7} \frac{n(n+1)(2n+1)}{4}$ is equal to ... (8 Jan 2020 S2)