

1. If $I_n = \int_0^{\sqrt{2}} \sin^n x dx$ and its reduction formula is $I_n = \frac{n-1}{n} I_{n-2}$ then

$$I_3 =$$

(a) 1, (b) $\frac{428}{315}$, (c) 0, (d) $\frac{2}{3}$.

2. From the recurrence relation $\Gamma(n+1) = n \Gamma(n)$, calculate $\Gamma(6)$

3. Find the number of significant figures in the following numbers:

(i) 62551, (ii) 210.073.

4. Introducing slack and surplus variables convert the following L.P.P. into standard form

$$\text{Maximize } Z = 2x_1 + x_2$$

$$\text{Subject to } x_1 \leq 4.$$

$$2x_1 + x_2 \geq 1$$

$$x_1, x_2 \geq 0.$$

5. Find the I.B.F.S. by North-West Corner Rule of the following TP.

	D ₁	D ₂	D ₃	D ₄	
O ₁	2	5	4	7	4
O ₂	6	1	2	5	6
O ₃	4	5	2	4	8
	3	7	6	2	