

$\begin{aligned} & \left[\frac{2q^{n} \circ f \text{ Tangood Plone}}{2x} \right] + \frac{2q^{n} \circ g}{2q} \right]_{p} + \frac{(z-z_{0}) \left(\frac{2f}{2z} \right)}{2z} \right]_{p} \\ & (z-1) \cdot (2) + \frac{2q}{2q} \cdot (2) + \frac{2q}{2q} \cdot (2) \\ & \left[\frac{2q^{n} \circ f \text{ Normal Line}}{2q} \right]_{p} + \frac{(z-z_{0}) \left(\frac{2f}{2z} \right)}{2q} \right]_{p} \\ & \left[\frac{2q^{n} \circ f \text{ Normal Line}}{2q} \right]_{p} + \frac{(z-z_{0})}{2q} \cdot (2\frac{q}{2z}) \\ & \left[\frac{2q}{2q} \right]_{p} + \frac{(z-z_{0})}{2q} \cdot (2\frac{q}{2z}) \right]_{p} \\ & \left[\frac{2q}{2q} \right]_{p} + \frac{2q}{2q} \cdot (2\frac{q}{2z}) \\ & \left[\frac{2q}{2q} \right]_{p} + \frac{2q}{2q} \cdot (2\frac{q}{2z}) \\ & \left[\frac{2q}{2q} \right]_{p} + \frac{2q}{2q} \cdot (2\frac{q}{2z}) \\ & \left[\frac{2q}{2q} \right]_{p} + \frac{2q}{2q} \cdot (2\frac{q}{2z}) \\ & \left[\frac{2q}{2q} \right]_{p} + \frac{2q}{2q} \cdot (2\frac{q}{2z}) \\ & \left[\frac{2q}{2q} \right]_{p} + \frac{2q}{2q} \cdot (2\frac{q}{2z}) \\ & \left[\frac{2q}{2q} \right]_{p} + \frac{2q}{2q} \cdot (2\frac{q}{2z}) \\ & \left[\frac{2q}{2q} \right]_{p} + \frac{2q}{2q} \cdot (2\frac{q}{2z}) \\ & \left[\frac{2q}{2q} \right]_{p} + \frac{2q}{2q} \cdot (2\frac{q}{2z}) \\ & \left[\frac{2q}{2q} \right]_{p} + \frac{2q}{2q} \cdot (2\frac{q}{2z}) \\ & \left[\frac{2q}{2q} \right]_{p} + \frac{2q}{2q} \cdot (2\frac{q}{2z}) \\ & \left[\frac{2q}{2q} \right]_{p} + \frac{2q}{2q} \cdot (2\frac{q}{2z}) \\ & \left[\frac{2q}{2q} \right]_{p} + \frac{2q}{2q} \cdot (2\frac{q}{2z}) \\ & \left[\frac{2q}{2q} \right]_{p} + \frac{2q}{2q} \cdot (2\frac{q}{2z}) \\ & \left[\frac{2q}{2q} \right]_{p} + \frac{2q}{2q} \cdot (2\frac{q}{2z}) \\ & \left[\frac{2q}{2q} \right]_{p} + \frac{2q}{2q} \cdot (2\frac{q}{2q}) \\ & \left[\frac{2q}{2q} \right]_{p} + \frac{2q}{2q} \cdot (2\frac{q}{2q}) \\ & \left[\frac{2q}{2q} \right]_{p} + \frac{2q}{2q} \cdot (2\frac{q}{2q}) \\ & \left[\frac{2q}{2q} \right]_{p} + \frac{2q}{2q} \cdot (2\frac{q}{2q}) \\ & \left[\frac{2q}{2q} \right]_{p} + \frac{2q}{2q} \cdot (2\frac{q}{2q}) \\ & \left[\frac{2q}{2q} \right]_{p} + \frac{2q}{2q} \cdot (2\frac{q}{2q}) \\ & \left[\frac{2q}{2q} \right]_{p} + \frac{2q}{2q} \cdot (2\frac{q}{2q}) \\ & \left[\frac{2q}{2q} \right]_{p} + \frac{2q}{2q} \cdot (2\frac{q}{2q}) \\ & \left[\frac{2q}{2q} \right]_{p} + \frac{2q}{2q} \cdot (2\frac{q}{2q}) \\ & \left[\frac{2q}{2q} \right]_{p} + \frac{2q}{2q} \cdot (2\frac{q}{2q}) \\ & \left[\frac{2q}{2q} \right]_{p} + \frac{2q}{2q} \cdot (2\frac{q}{2q}) \\ & \left[\frac{2q}{2q} \right]_{p} + \frac{2q}{2q} \cdot (2\frac{q}{2q}) \\ & \left[\frac{2q}{2q} \right]_{p} + \frac{2q}{2q} \cdot (2\frac{q}{2q}) \\ & \left[\frac{2q}{2q} \right]_{p} + \frac{2q}{2q} \cdot (2\frac{q}{2q}) \\ & \left[\frac{2q}{2q} \right]_{p} + \frac{2q}{2q} \cdot (2\frac{q}{2q}) \\ & \left[\frac{2q}{2q} \right]_{p} + \frac{2q}{2q} \cdot (2\frac{q}{2q}) \\ & \left[\frac{2q}{2q} \right]_{p} + \frac{2q}{2q} \cdot (2\frac{q}{2q}) \\ & \left[\frac{2q}{2q} \right]_{p} + \frac{2q}{2q} \cdot (2$		3-7-17 of 3-000000
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		
$(x-1) (2) + (y-1) = + (z-1) = 0$ $[x+y+z=3] - (1)$ $[x-x_0] = (y-y_0) = (z-z_0) = 0$ $[x-y] = (y-1) = (z-1) = (z-1) = 0$ $[x-y] = (y-1) $		Egn of Tangent Plane,
		$(x-x_0) \left(\frac{\partial x}{\partial t}\right) + \left(\frac{\partial y}{\partial t}\right) \left(\frac{\partial y}{\partial t}\right) + \left(\frac{\partial z}{\partial t}\right) \left(\frac{\partial z}{\partial t}\right) = 0$
		(x-1)(2) + (y-1) = 0 + (z+1) = 0
Eq. of Normal line $(x-x_0)$ (x^2-y_0)		x + y + z = 3 - (1)
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		
$ \frac{(x-x_0)}{(x^2-y_0)} = \frac{(y-y_0)}{(x^2-y_0)} = \frac{(x^2-z_0)}{(x^2-z_0)} = \frac{(x^2-z_0)}{(x^2-z$		[大孝
Ans: $(x-1) = (y-1) = (z-1)$ $(x-1) = (y-1) = (z-1)$ Ans: $(x-1) $		
And $(x-1) = (y-1) = (z-1)$ And $(x-1) = (z-1)$ And $(x-1) = (y-1) = (z$		(3c-20) (9-40) (7/20)
An: $(x-1) = (y-1) = (z-1)$ Ax: $(x-1) =$		
3.> Plane $4x-6y-2+14=0$ is tongent to $f(x,y,z)$ due point be (x_0,y_0,z_0) Plane $4x-6y-z+14=0$ is tongent plane $(x-x_0) \frac{\partial f}{\partial x} + \frac{(y-y_0)(\frac{\partial f}{\partial y})}{\partial y} + \frac{(z-z_0)(\frac{\partial f}{\partial z})}{\partial z} = 0$ $\frac{\partial f}{\partial x} = 2x$ $\frac{\partial f}{\partial y} = 6y$ $\frac{\partial f}{\partial y} = 2x$ $\frac{\partial f}{\partial y} = 6y$ $\frac{\partial f}{\partial y} = 2x$ $\frac{\partial f}{\partial y} = 6y$ $\frac{\partial f}{\partial y} = 2x$ $\frac{\partial f}{\partial y} = 6y$ $\frac{\partial f}{\partial y} = 6y$ $\frac{\partial f}{\partial y} = 2x$ $\frac{\partial f}{\partial y} = 6y$ $\frac{\partial f}{\partial y} = 2x$ $\frac{\partial f}{\partial y} = 6y$ $\frac{\partial f}{\partial y} = 2x$ $\frac{\partial f}{\partial y}$	Ans	(y-1) = (y-1) == 1) (z-1) (z-1) == 0 (z-1)
3.> Plane $4x - 6y - 2 + 14 = 0$ is tongent to $f(x, y, z)$ dut point be (x_0, y_0, z_0) = $\frac{1}{2}x^2 + 3y^2 + 2z$ Plane $4x - 6y - 2 + 14 = 0$ is tongent plane $(x - x_0) \frac{3f}{3x} + \frac{(y - y_0)(3f)}{3y} + \frac{(z - z_0)(3f)}{3y} = 0$ $\frac{3f}{3x} - 2x$ $\frac{3f}{3x} - 2x$ $\frac{3f}{3x} - 2x$ $\frac{3f}{3x} - 2x$ $\frac{3f}{3x} - 6y$ $\frac{3f}{3x} - 6y$ $\frac{3f}{3x} - 6y$ $\frac{3f}{3x} - 2x$ $3f$		
3.> Plane $4x - 6y - 2 + 14 = 0$ is tongent to $f(x, y, z)$ dut point be (x_0, y_0, y_0) Plane $4x - 6y - 2 + 14 = 0$ is tongent plane $(x - x_0) \frac{3f}{3x} \left _{F} (x_0 - y_0) \left(\frac{3f}{3y}\right) \right _{F} (z - z_0) \left(\frac{3f}{3z}\right) = 0$ $\frac{3f}{3x} = 2x$ $\frac{3f}{3y} = 6y$ $\frac{3f}{3y} = 2x$ $\frac{3f}{3y} = 2x$ $\frac{3f}{3y} = 2$ $\frac{3f}{3y} = 2$ $\frac{3f}{3z} = 2$		$\frac{1}{1}$
dut point be (x_0, y_0, z_0) Plane $4x - 6y - z + 14 = 0$ is tongent plane $(x - x_0) = 3f$ $3x \mid p$		
Plane $4x-6y-2+14=0$ is tongent plane $(x-x_0) \frac{3f}{3x} \left \frac{(y-y_0)(3f)}{3y} \right _{p} \frac{(z-z_0)(3f)}{3z} = 0$ $\frac{3f}{3x} \left(\frac{(x-x_0)}{2x_0} \frac{2x_0}{f} + \frac{(y-y_0)}{6y_0} \frac{6y_0}{f} + \frac{(z-z_0)}{2} \frac{2}{f} = 0$ $\frac{3f}{3y} = \frac{6y_0}{2x_0} \frac{x}{x} + \frac{6y_0}{y_0} \frac{y}{y} + \frac{2z}{2x_0} - \frac{2x_0^2 - 6y_0^2 z_0}{f}$ $\frac{3f}{3z} = \frac{2}{f} -\frac{x_0}{x} - \frac{3y_0}{y_0} \frac{y}{y} - \frac{z}{z} + \frac{z_0}{z} + \frac{x_0^2 + 3y_0^2 = 0}{f}$ $\frac{3z}{3z} = \frac{1}{f} \frac{2}{f} $	3.>	
$ \frac{(x-x_0)}{3x} = \frac{3f}{3y} + \frac{(y-y_0)(3f)}{3y} = 0 $ $ \frac{3f}{3x} = \frac{2x}{3x} $ $ \frac{3f}{3y} = \frac{(x-x_0)}{2x_0} + \frac{(y-y_0)}{3y} = 0 $ $ \frac{3f}{3y} = \frac{6y}{3y} + \frac{(x-x_0)}{2x_0} = 0 $ $ \frac{3f}{3y} = \frac{6y}{3x} + \frac{6y}{3y} = \frac{(y)}{3y} + 2x - 2x_0 - 2x_0^2 - 6y_0^2 = 0 $ $ \frac{3f}{3y} = \frac{2}{3x_0} + \frac{2x_0}{3x_0} + 2x$		
$ \frac{\partial f}{\partial x} = 2x $ $ \frac{\partial f}{\partial y} = 6y $ $ \frac{\partial f}{\partial y} = 6y $ $ \frac{\partial f}{\partial y} = 2x_0 \times x + 6y_0 \cdot (y_1) + 2x - 2x_0 - 2x_0^2 - 6y_0^2 \times x $ $ \frac{\partial f}{\partial y} = 2 - x_0 \times x - 3y_0 \cdot (y_1) - x + z_0 + x_0^2 + 3y_0^2 = 0 $ $ \frac{\partial f}{\partial z} = 2 - x_0 \times x - 3y_0 \cdot (y_1) - x + z_0 + x_0^2 + 3y_0^2 = 0 $ $ \frac{\partial f}{\partial z} = 2 - x_0 \times x - 3y_0 \cdot (y_1) - x + z_0 + x_0^2 + 3y_0^2 = 0 $		A COLONIA DE LA COLONIA DE
$\frac{\partial x}{\partial f} = 6y$ $\frac{\partial f}{\partial y} = 6y$ $\frac{\partial x}{\partial y} = 2x_0 x + 6y_0 (y) + 2x - 2x_0 - 2x_0^2 - 6y_0^2 x$ $\frac{\partial f}{\partial z} = 2 - x_0 x - 3y_0 (y) - x + z_0 + x_0^2 + 3y_0^2 = 0$ $\frac{\partial f}{\partial z} = \frac{2}{3z_0} + \frac{2}{3} + \frac{2}{$		$\frac{3x}{(x-x^{\circ})} = \frac{3x}{3t} \left[\frac{3x}{(x-x^{\circ})} \left(\frac{3x}{3t} \right) \right] = 0$
$\frac{\partial f}{\partial y} = 6y$ $\frac{\partial f}{\partial y} = 2x_0 + 6y_0 + (y_0) + 2x - 2x_0 - 2x_0^2 - 6y_0^2 - 2y_0^2 - 2x_0^2 - 6y_0^2 - 2y_0^2 - 2y_$	1 F F	8F _ 25c
$\frac{\partial f}{\partial y} = \frac{6y}{2x_0} \frac{2x_0}{x} + \frac{6y_0}{6y_0} \frac{(y)}{y} + 2z - 2z_0 - 2x_0^2 - \frac{6y_0^2}{2}$ $\frac{\partial f}{\partial z} = \frac{2}{3z_0} \frac{-x_0}{x} - \frac{3y_0}{y} \frac{(y)}{y} - z + z_0 + \frac{x_0^2}{x} + \frac{3y_0^2}{2} = 0$ $\frac{\int companns}{y} \frac{(y)}{y} + \frac{2z}{y} - \frac{2z_0}{y} - \frac{2z_0^2}{y} + \frac{3y_0^2}{y} = 0$		$(x-x_0)$ $2x_0$ $f(y-y_0)$ $6y_0 + (z-z_0)$ $2=0$
$\frac{2x_0 \times + 6y_0 \times (y) + 2z - 2z_0 - 2x_0^2 - 6y_0^2 \times (y)}{2f - 2} = \frac{2}{3z_0} - \frac{2x_0 \times - 3y_0 \times (y)}{2} - \frac{2}{3} + \frac{2}$	No.	= 69 1 1 1 0 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
$\frac{\partial f}{\partial z} = \frac{2}{\sqrt{2}} - \frac{2}{\sqrt{2}} = \frac{2}{\sqrt{2}} - \frac{3}{\sqrt{2}} = \frac{2}{\sqrt{2}} + \frac{3}{\sqrt{2}} = 0$		1 27
(Companna	-17	$2f = 2 - x_0 \propto -3y_0 (y) - 7 + 70 + 20 + 3y^2 = 0$
(oefficients) 4x-6y-z+14 = 0		Company
		(defficients 4x-6y-z+14z0)

	VACUATO VALUE - 0.09. 7
	$\sum_{\alpha = 0}^{\infty} (x_{\alpha} = -4)$
	-3y_=-6 (y_= 2]
	xo2+18yo2+ Zo = 14
	16+12+20 = 14 70 = 14-28
	(3) (3) -1 = 1-14-7 = 92
Ans:	The point is (-4,2,-14)
	Tools Tools
4.>	$R = E \qquad T = 20 \pm 0.1 A$ $T \qquad E = 120 \pm 0.05 V \qquad (0.002)$
	R = 6
	max error = SR = 121 / Rerror = 8R 100 x
22	log R = log E - log I
	SR SE SILV SOLUTION STORY OF S
	REIL
11.5	SR = R (000.05 = 0.1) 100 130
7.50	120 20
	SR = 6 (4.16 x10 4 + 5x10 -3)
	SR = 6 (4.16 X10 14 5X 10)
	CR Z 6 X 5420 X104
	= 834.96K1874 (3)
-	0.000.448
	BR = 275.04X10-4
Bns	[8R = 0.0275]
	% Error = BR x 100 = 0.45831
	K .
J. L.	THE RESERVE OF THE PROPERTY OF

5.3	$P = E^2$ $E = 200 - 5$ V $SE = -5 V$	
	R R=8-0.20 12 8R=-0.20-	<u>. </u>
	log P = 2 log (E) - log (R)	
	$P = E^{-}$	
	SP = 2 SE SR 11	
	P = $(200)^2$	
	SP = 2(-5) - (-0.20) (8)	
	P (200) (8) (11-01-) 1 5000 WIT	le iA
	= -10 , 0.20	
	200 8 A MO 108 = I 3 = 9.	KA
	= (5000) (-1, 0.20) 121= 3	
	$= (5000) \left(\frac{-1}{20} + \frac{0.20}{8} \right)^{\frac{1}{2}} + \frac{22}{3}$	
	197 5000 (-0:005) 40 -198 - 100 xom	
	[SP = -125] T pol - 3 pol = 3 pol	
	The power decreases by 125 W 13 7 13 93	
6.7	$T = 2\pi \frac{1}{4} \frac{8L}{L} 100\% = 1\% = 8g \times 100\% = 2.5\%$	
	179	
	$\log T = \log \Omega \pi J + \sqrt{\log \Omega} - \frac{1}{2} \log (q)$	
	(10.78)	
ا به از	ST = (0) + &L _ 89 AND 2 = 93	
	2g JV3F.14.78	
	ST x 100 x - 1 (8Lx 100 x) - 1 (89 x 100)	
	T 2 L 2 (13)	
	= 1 (1) - 1 (25).0 - 12	ina
	2 1	
	8Tx 100 = -1.5731.0 = 631 x:18 = 70113 X	1
	CT.	penad
	TX 100 = -0.75 The maximum error is	n Time
	Ans: 15 0.75%	M. W.
		11



	The state of the s
7.>	I = PLAN = PL (\(\tau d^2 \) N
	33000 A . Ma
	8% error in P, L, N & d', find error in I
	and the transfer of the state o
	log t = log P+ log (L) + 2 log (d) + log N + log (T) - log (33000)
	(2) MZ) (8) (A) MZ
-, -1	SI SP + SL + 2 Sd + SN I P P d D N
NIE A	
1172	ST 100 x = \(\(\) \(\
4 - 110	7 + 6 8% + 28% + 8%
	ibis via (Arms of mais of 1 = 1)
Ane	Maxm = (1)518 1/1 (2)
	Error in I () and () and () and ()
	()(A) ((B)
8.)	Area of Ellipse Tab
(2)	This ten street and upon A
() (A)	50 x 100 = 100 = 100 (1)
	CIENTRE) A CONTRACTOR OF THE C
	$\log (A) = \log (\pi) + \log (\alpha) + \log (b)$
	C A - MANICARIA DO ACT OF
	SA = 1 510 + sa + Sb a b
	$\frac{8A \times 100}{b} = \frac{8a \times 100}{b} = \frac{12}{3}$
1	2 1% + 1%
	SA x 100% = 2%
	Ans: Maximum possible error in Arca = 2 %



