	Section B (b) "Normal vector to surface No. of Spheroid."
	MORMAL VECTOR CALCULATION
	TO SURFACE OF SPHEROID >
+	The position vector to surface of spheroid can be use then as,
702	$\vec{v}(0, \varphi) = r(0, \varphi) \hat{\sigma}$ — Db where $r(0, \varphi)$ is parametrization of the surface.
	for spheroid, $v(0, \varphi) = v(0) = R - Rs \cos(20)$ which is given in eq 15a.
→	normal vector to any arbitrary surface with position vector $\vec{u}(0, \varphi)$ is given by
	$\overrightarrow{n} = \frac{\partial \overrightarrow{v}(0, \varphi)}{\partial \theta} \times \frac{\partial \overrightarrow{v}(0, \varphi)}{\partial \varphi} - 2b$
	n = 2v(0,q) x 2v(0,q) - (3)b
	as we know, $\hat{n} = \vec{n}$
	[Ref:-Vector Calculus, 6th Edition] [by Jarvold E. Marisclen]
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Calculating normal vectors,

$$\frac{3\vec{v}(0, \phi)}{3\theta} = \frac{3r(0, \phi)}{3\theta}\hat{r} + r(0, \phi)\frac{3\hat{r}}{3\theta} - \frac{\Phi_b}{\theta}$$

$$\frac{3\vec{v}(0, \phi)}{3\theta} = \frac{3r(0, \phi)}{3\theta}\hat{r} + r(0, \phi)\frac{3\hat{r}}{3\theta} - \frac{\Phi_b}{\theta}$$

ar we know,
$$\frac{\partial \hat{r}}{\partial \hat{o}} = \hat{o}$$
, $\frac{\partial \hat{r}}{\partial \hat{\phi}} = \frac{\sin \hat{o} \hat{\phi}}{\cos \hat{\phi}} = \frac{\cos \hat{\phi}}{\cos \hat{\phi}} =$

$$\frac{\partial \vec{V}(0, \varphi)}{\partial \theta} = \frac{\partial r(0, \varphi) \hat{\tau} + r(0, \varphi) \hat{\Theta}}{\partial \theta} = \frac{\partial \vec{V}(0, \varphi)}{\partial \theta} = \frac{\partial \vec{V}(0, \varphi)}{\partial \theta}$$

$$\frac{\partial \vec{v}(0, \varphi)}{\partial \varphi} = \frac{\partial r(0, \varphi)}{\partial \varphi} \hat{r} + r(0, \varphi) \sin \theta \hat{\varphi} - 86$$

$$\vec{\eta} = \partial \vec{v}(0, \phi) \times \partial \vec{v}(0, \phi)$$

$$\frac{\partial}{\partial \theta} = \frac{\partial \varphi}{\partial \theta} = \frac{$$

for Spheroid,
$$\gamma(0,q) = \gamma(0) = R - Rs \cos(20)$$

$$\frac{37(0, 0)}{30} = \frac{37(0)}{30} = +RSSin(20)(2) \\
 \frac{37(0, 0)}{30} = \frac{37(0)}{30} = 0$$

$$\frac{37(0, 0)}{30} = \frac{37(0)}{30} = 0$$

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substituting the variables in eq10 b to eq9b, normal vector can be given as,
normal vector can be given as,
$\frac{\pi_{\text{spheroid}} = (7(0))^2 \sin \theta \hat{r} - r(\theta) 2 \sin \theta \sin (20) RS \hat{\theta}}{+ 0 \hat{\phi} - (1) b}$
+ 0 \$ - Wb
(R-RS 000 (20)) Q
(D) b
$\hat{n} = \frac{\vec{n}}{ n } = \frac{(R - Rs\cos(20))^2 \sin \theta \hat{\sigma} - 4Rs\cos \theta \sin^2 \theta}{(R - Rs\cos(20))\theta}$
(R-RS cos (20)) 4 sin 20 + 16 R3 2 cos 20 sin 40
(R-Rs cos (20)) ²
L_([3)b.
1 100 1 100 2 100
n= (R-Rs con (20)) sin 0 r- 4Rs con 0 sin 20 (R-Rs con (20))
J(R-Rs Cos (20)) 48in 20 + 16 R2 52 cos 20 8in 40 (R-Rs cos (20)
<u>(14) 6</u>
(R-RSCOO(20)) 28in0 2 - 4 RSCOO QSin20 (R-RSCOO(20)) 20
(R-RSCON (20)) 8in 0 [(R-RS CON(20))]+ 16 R25 2 (000 0 Sin 20
L (15) b

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$$\hat{n} = (R - Rs \cos(20))\hat{r} - 4Rs \cos \theta \sin \theta \hat{q} - (6)b$$

$$\sqrt{(R - Rs \cos(20))^2 + 4R^2s^2 \sin^2(20)}$$

n' represents the unit normal vector.