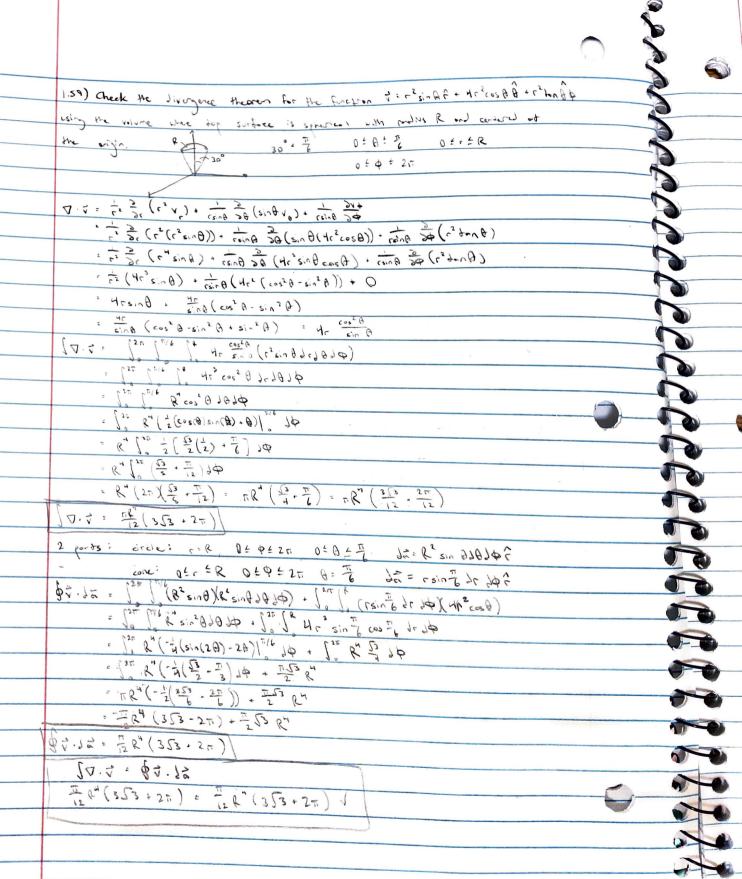
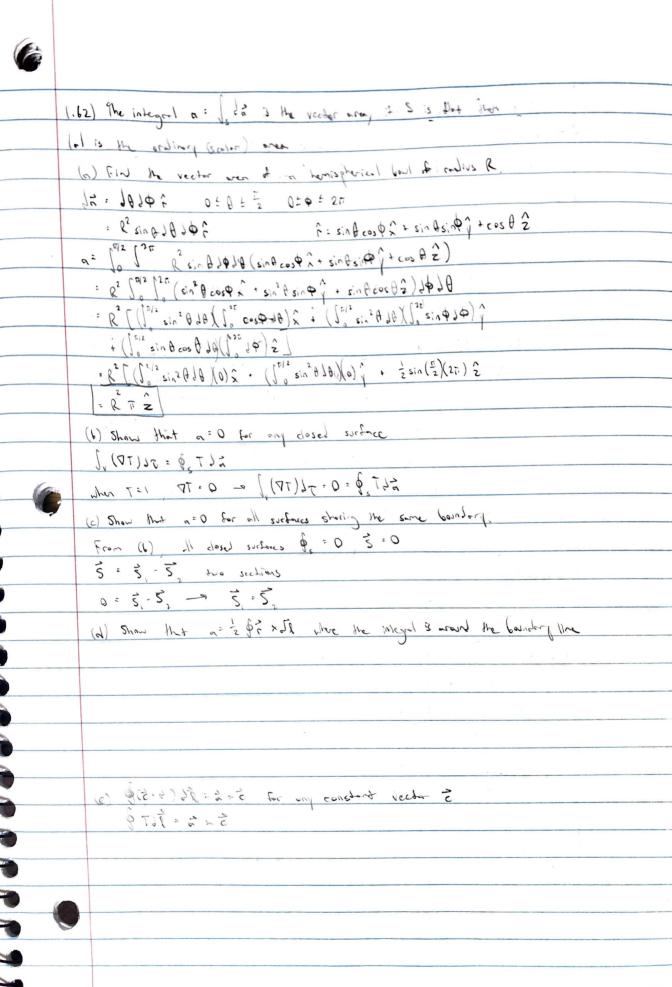
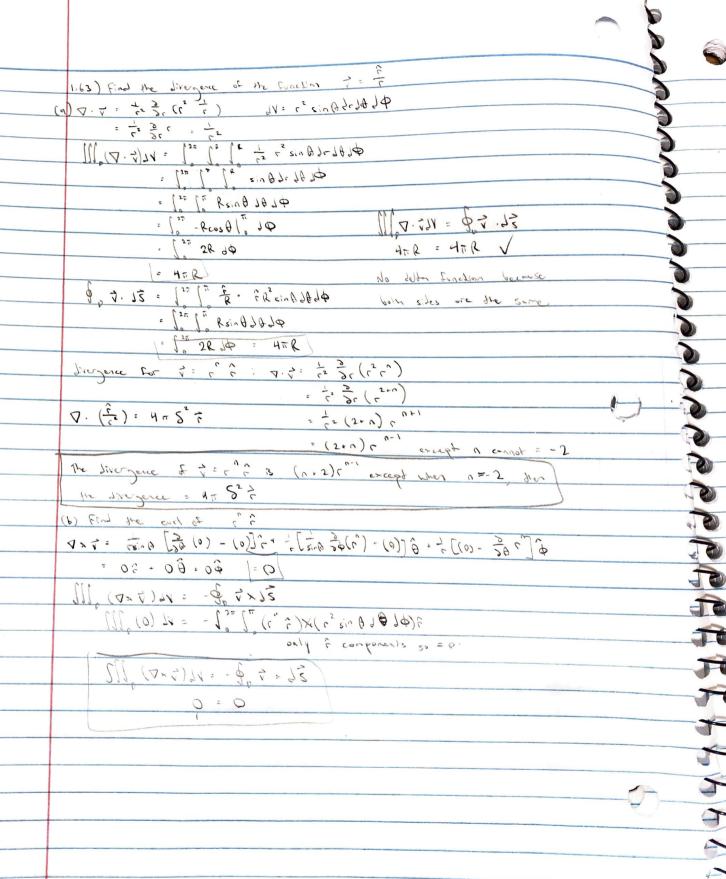


1.57) Compute the line integral of V = (1005 A)ê - (1005 A sin A) A + 30 P D x 1 = (210) [30(210) - 300] 2 . - [100 30 - 30 (00) 0 . - [30(00) - 300] 0 - (31) [ 3 ( sin (30)) - 3 ( reostsin )] ? + - ( sin ) 3 ( reos 2) = 3 ( ((30)) ] 6 + - [3 (r(-ccos Bsin A)) - 3 (ccos 2 B)] \$ = rsind [3 ccos A - 0] + = [sind (0) - 6 ] + = [-2 cos Asin A + 2 ccos (A) (-sin (A))] \$  $= \frac{3\cos\theta}{\sin\theta} \hat{\zeta} - 6\hat{\theta} + \frac{1}{6} \hat{\zeta} - 2\cos\theta\sin\theta + 2\cos(\theta)\sin(\theta)$   $= \frac{3\cos\theta}{\sin\theta} \hat{\zeta} - 6\hat{\theta} + Q$ Vx V = 300+ 0 = 60 O: 12: - 1,140 (√×√).12:0 → ∫(√×√).12:0  $\int (\nabla \times \mathbf{v}) \cdot \int_{\mathbf{u}} = 0 + \frac{3\pi}{2} = \frac{3\pi}{2}$ SI: x-1/1001 50 - of = 100 V= 1005 00 V.d = 1005 00 = 0 52: xy fore so de: . vo: 3r\$ 7.20: 3r









(a)	
	1.64) Let D(r, E) = -1 7 2 1 2 3/2
	(1.64) Let V(r, E) = 417 V Jr. E
	(a) Show that $D(r, E) = (3E^2/4\pi)(r^2 + E^2)^{-3/2}$ Legacter in solution: $\nabla^2 + \frac{1}{r^2} \frac{3r}{3r} (r^2 \frac{3t}{3r}) + \frac{3t}{r^2 \sin \theta} \frac{3t}{3\theta} (\sin \theta \frac{3t}{3\theta}) + \frac{3t}{r^2 \sin \theta} \frac{3t}{3\theta}$ $\frac{1}{4\pi} \nabla^2 \frac{1}{r^2 E^2} = \frac{1}{4\pi} \left( \frac{1}{r^2} \frac{3r}{3r} \left( r^2 \left( r^2 + E^2 \right)^2 \right) + \frac{1}{r^2 \sin \theta} \frac{3t}{3\theta} \left( r^2 \left( r^2 + E^2 \right)^2 \right)$ $= \frac{1}{4\pi} \left( \frac{1}{r^2} \frac{3r}{3r} \left( r^2 \left( r^2 + E^2 \right)^2 \right) + \frac{1}{r^2 \sin \theta} \frac{3t}{3\theta} \left( r^2 \left( r^2 + E^2 \right)^2 \right) + \frac{1}{r^2 \sin \theta} \frac{3t}{3\theta} \left( r^2 \left( r^2 + E^2 \right)^2 \right)$
	Fail actual in solution; Ditalist St. (2 se ) + 1, sing solvent 200 , me to
	1 in this case 15. (2 20 (12)
	- 4 T \ 2 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
	41 \\ \frac{1}{4\pi}\left(\frac{1}{c^2}\left(
	$= \frac{1}{\sqrt{2}} \left( \frac{1}{2} \left( \frac{1}{2} \left( \frac{1}{2} \left( \frac{1}{2} + \frac{1}{2} \right)^{\frac{1}{2}} - \frac{1}{2} \left( \frac{1}{2} + \frac{1}{2} \right)^{\frac{1}{2}} \right) \right) $
	= \( \frac{1}{2}\left(\cap^2 + \xi^2)^{-\sqrt{2}} - \cap^2\left(\cap^2 + \xi^2)^{-\sqrt{2}}\right)
	$ \frac{4\pi}{4\pi} \left( \frac{1}{c^2} \left[ 2c(c^2 + c^2)^{-1/2} - c^3 (c^2 + c^2)^{-3/2} \right] \right) \\ = \frac{1}{4\pi} \left( \frac{1}{c^2} \left[ 2c(c^2 + c^2)^{-1/2} - c^2 (c^2 + c^2)^{-3/2} \right] \right) \\ = \frac{1}{4\pi} \left( \frac{2}{3c^2 + c^2} - \frac{c^2}{3c^2 + c^2} \right) $
	1777 Or 6 10 10
,	
,	