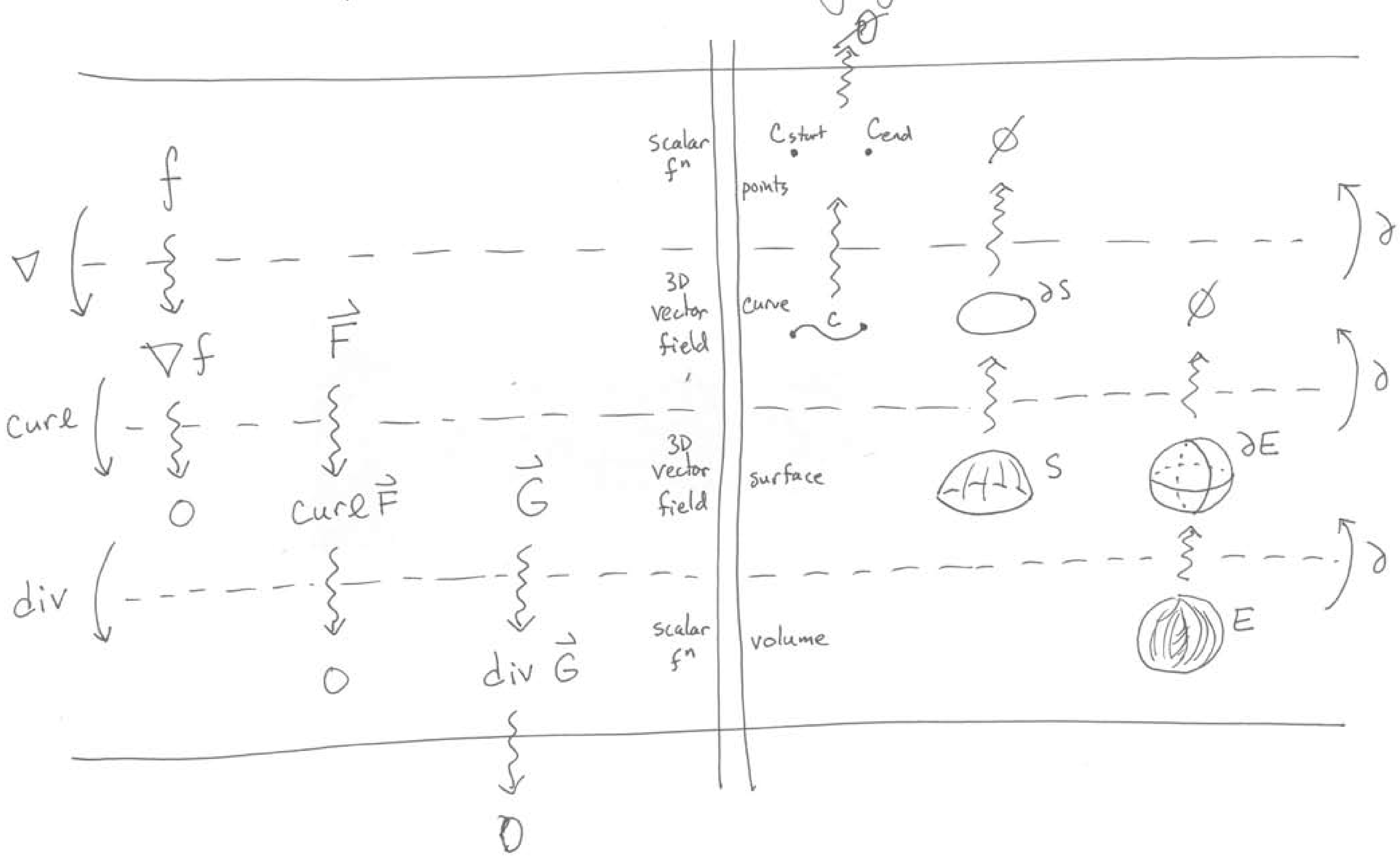
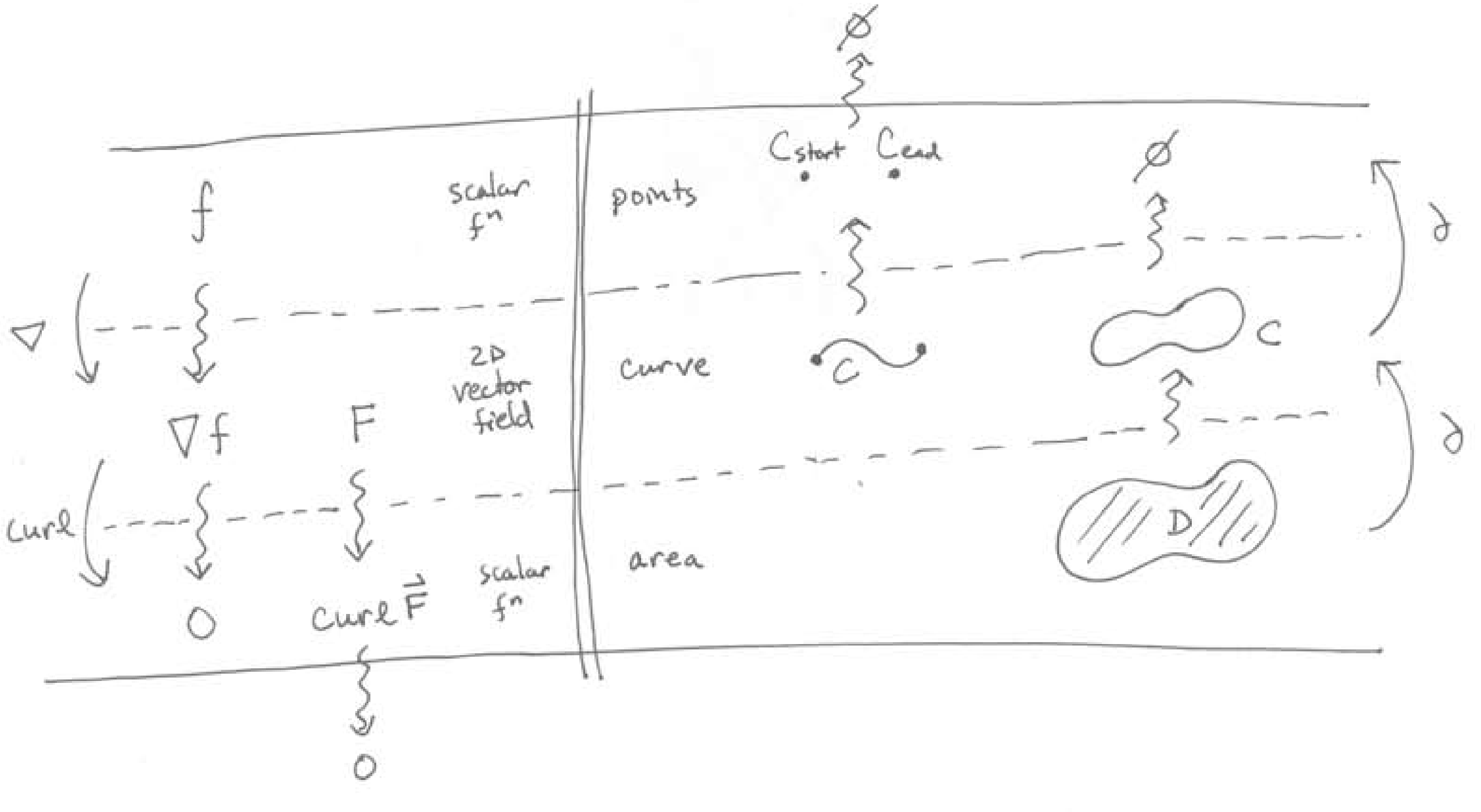
3D Vector Calculus in ~~my~~ your head

0D	$f(C_{end}) - f(C_{start})$		
	$\parallel$		
1D	$\int_C \nabla f \cdot d\vec{r}$	$\int_{\partial S} \vec{F} \cdot d\vec{r}$	
		$\parallel$	
2D		$\iint_S \operatorname{curl} \vec{F} \cdot d\vec{S}$	$\iint_{\partial E} \vec{G} \cdot d\vec{S}$
			$\parallel$
3D			$\iiint_E \operatorname{div} \vec{G} \, dV$
	Fundamental Theorem of Line Integrals	Stokes' Theorem ~~([illegible])~~	The Divergence Theorem

3D Vector Calculus in ~~my~~ your head



0D	$f(C_{end}) - f(C_{start})$	
	$\parallel$	
1D	$\int_C \nabla f \cdot d\vec{r}$	$\int_C \vec{F} \cdot d\vec{r}$
		$\parallel$
2D		$\iint_D \text{curl}\,\vec{F} \cdot dA$
	Fundamental Theorem of Line Integrals	Green's Theorem

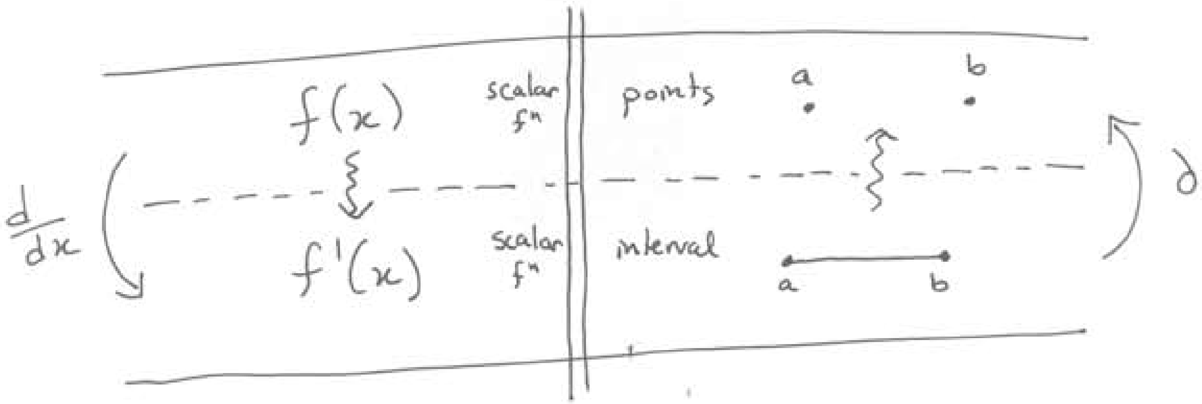


2D Vector Calculus

in ~~my~~ your head

0D	$f(b) - f(a)$
	$\parallel$
1D	$\int_a^b f'(t)\,dt$

Fundamental Theorem of Calculus



1D Vector Calculus

in ~~my~~ your head.

More generally,

$$\boxed{\int_{\partial M} \omega = \int_M d\omega}$$

M – manifold (somewhere to integrate)

ω – differential (something to integrate)

	ω	M	$d\omega$
FTLI	f	C (curve)	$\nabla f \cdot d\vec{r}$
Stokes'	$\vec{F} \cdot d\vec{r}$	S (surface)	$\text{curl}\,\vec{F} \cdot d\vec{S}$
Divergence	$\vec{G} \cdot d\vec{S}$	E (volume)	$\text{div}\,\vec{G}\, dV$