16.10 - Summary

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Fundamental Theorem of Calculus

$$\int_a^b F'(x)dx = F(b) - F(a)$$

Fundamental Theorem of Line Integrals

$$\int_C \nabla f \cdot d\mathbf{r} = f(\mathbf{r}(b)) - f(\mathbf{r}(a))$$

Green's Theorem

$$\iint_D (\frac{\partial Q}{\partial x} - \frac{\partial P}{\partial y})\, dA = \int_{\partial D} P\, dx + Q\, dy$$

Stoke's Theorem

$$\iint_S curl\ \mathbf{F} \cdot d\mathbf{S} = \int_{\partial S} \mathbf{F} \cdot d\mathbf{r}$$

Divergence Theorem

$$\iiint_E div\ \mathbf{F}\, dV = \iint_{\partial E} \mathbf{F} \cdot d\mathbf{S}$$