Warm-up for Monday, February 11th, 2022

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Constructing Line and Surface Integrals

Objects of Electromagnetism

Suppose you are performing a line integral from $x = 0$ to $x = 2$. To what expression does $d\vec{l}$ reduce?

- A: $dz\hat{z}$
- B: $dy\hat{y}$
- C: $dx\hat{x}$
- D: $dz\hat{x}$

Objects of Electromagnetism

Suppose you are performing a line integral from $y = 0$ to $y = 2$. To what expression does $d\vec{l}$ reduce?

- A: $dz\hat{z}$
- B: $dy\hat{y}$
- C: $dx\hat{x}$
- D: $dz\hat{x}$

Objects of Electromagnetism

Suppose you are performing a surface integral over the unit circle in the xy-plane. To what expression does $d\vec{a}$ reduce?

- A: $dxdz\hat{z}$
- B: $dxdy\hat{z}$
- C: $sdsd\phi\hat{x}$
- D: $sdsd\phi\hat{z}$