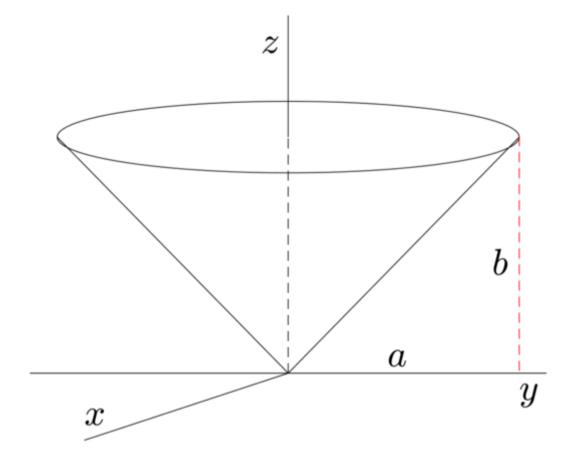
≡ Item Navigation

Surface Area of a Cone

Compute the lateral surface area $A=\int_S\,dS$ of a cone (see figure) in two ways.



(a) Unroll the cone and compute the area of the resulting circular sector.

(b) Define the cone parametrically as

$$oldsymbol{r} = rac{az}{b}\cos heta\,oldsymbol{i} + rac{az}{b}\sin heta\,oldsymbol{j} + z\,oldsymbol{k}, \qquad ext{for } 0 \leq z \leq b \quad ext{and} \quad 0 \leq heta \leq 2\pi,$$

$$\text{for } 0 \leq z \leq b \quad \text{and} \quad 0 \leq \theta \leq 2\pi,$$

and compute the surface integral.

✓ Completed

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