Recall

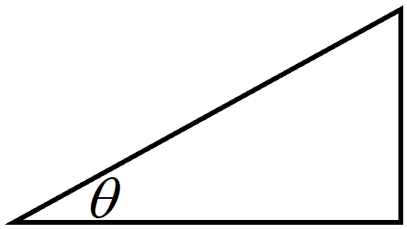
Trigonometric Identity

$$\cos^2\theta + \sin^2\theta = \_\_\_\_\_.$$

$$\tan^2\theta + \_\_\_\_\_ = \sec^2\theta.$$

Motivation

Evaluate the integral $\int \frac{1}{\sqrt{4+x^2}}\,dx$.

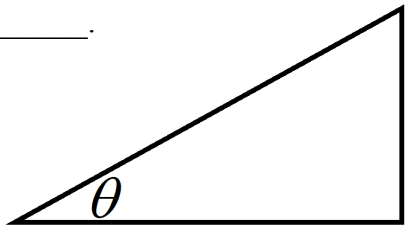


Strategy

Strategy

Evaluate integrals involving a^2+u^2.

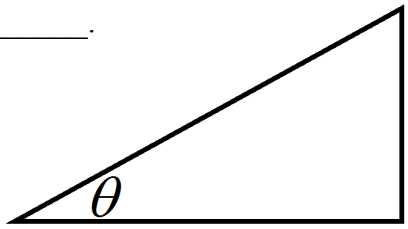
- Let $u=$ _____, where _____.
- Then $du=$ _____.
- Option 1: Convert a^2+u^2 to _____.
- Option 2: Note that $\sqrt{a^2+u^2}=$ _____.



Strategy

Evaluate integrals involving a^2-u^2.

- Let $u=$ _____, where _____.
- Then $du=$ _____.
- Option 1: Convert a^2-u^2 to _____.
- Option 2: Note that $\sqrt{a^2-u^2}=$ _____.



Strategy

Evaluate integrals involving u^2-a^2.

- Let $u=$ _____,

  where _____.
- Then $du=$ _____.
- Option 1: Convert to _____.
- Option2: Note that $\sqrt{u^2-a^2}=$ _____.