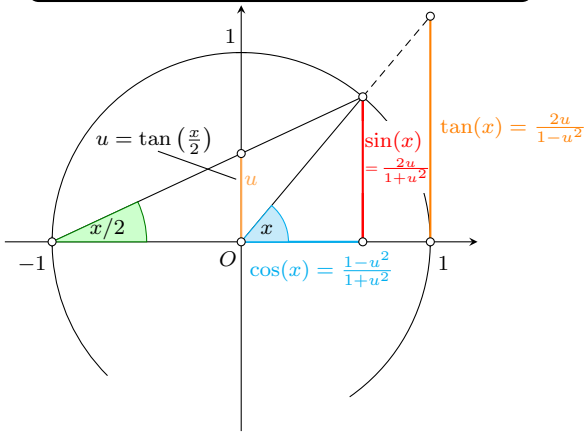
General substitution (trigonometric substitution)



$$u = \tan\left(\frac{x}{2}\right), \qquad x = 2 \cdot \arctan(u)$$

$$\sin(x) = \frac{2u}{1+u^2}, \quad \cos(x) = \frac{1-u^2}{1+u^2}, \quad \tan(x) = \frac{2u}{1-u^2}$$

$$dx = \frac{2}{1+u^2}\, du$$