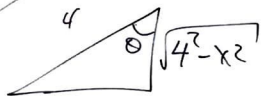


A problem

$$\frac{x}{16} \sqrt{16-x^2} = ?$$



$$x = 4 \sin \theta = 4$$

$$\sin \theta = \frac{x}{4}$$

$$\theta = \arcsin\left(\frac{x}{4}\right)$$

$$\cos \theta = \frac{\sqrt{4^2 - x^2}}{4}$$

$$\sqrt{16-x^2} = 4 \cos(\theta)$$

$$\tan \theta = \frac{x}{\sqrt{4^2 - x^2}}$$

from my version of Set 4, problem 8.

trig identity!
↓

$$\frac{x}{16} \sqrt{16-x^2} = \frac{4}{16} \sin(\theta) \cdot 4 \cos(\theta) = \sin \theta \cdot \cos(\theta) = \frac{1}{2} \sin(2\theta) = \frac{1}{2} \sin\left(2 \arcsin\left(\frac{x}{4}\right)\right)$$

$$\arcsin\left(\frac{x}{4}\right)$$

$$= 4 \cos\left(\arcsin\left(\frac{x}{4}\right)\right)$$

$$\boxed{\frac{x}{16} \sqrt{16-x^2} = \frac{1}{2} \sin\left(2 \arcsin\left(\frac{x}{4}\right)\right)}$$