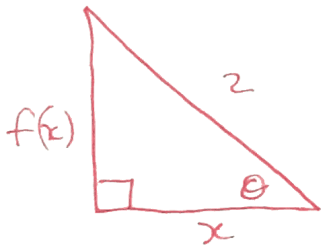
quiz 4
math1117-07
u new haven
Mon, 16 Sept

name: Solution

1 (10 points). Simplify, that is find an algebraic expression, for $\sin(\arccos(\frac{x}{2}))$.

Let $\theta = \arccos\left(\frac{x}{2}\right)$. Then $\cos(\theta) = \frac{x}{2}$ which is illustrated with the right triangle



where $f(x)$ is found with the trig identity

$$f(x) = \sqrt{4 - x^2}$$

Hence, $\sin\left(\arccos\left(\frac{x}{2}\right)\right) = \sin(\theta) = \frac{\sqrt{4-x^2}}{2}$.