

High School Math Problems
2017
Week 5
Problem

Evaluate the expression

$$\left(\frac{x\sqrt{x}}{\sqrt{1-x^3}} + \frac{\sqrt{1-x^3}}{x\sqrt{x}} \right)^{-1},$$

if

$$x = \sqrt[3]{\frac{a - \sqrt{a^2 - b^2}}{2a}},$$

where $a, b \in \mathbb{R}$ are such that $0 < |a| \geq |b| > 0$.