High School Math Problems
2017
Week 27
Problem

For $a > b > 0$, prove that

$$b\sqrt{2} \cdot \frac{2a + \sqrt{a^2 - b^2}}{\sqrt{a + \sqrt{a^2 - b^2}}} = \sqrt{(a+b)^3} - \sqrt{(a-b)^3}.$$