Lesson 10-3 Double and Half Angle Formulas

Simplify the given expression.

1. $2\sin\dfrac{\alpha}{2}\cos\dfrac{\alpha}{2}$

2. $\sqrt{\dfrac{1+\cos 70^{\circ}}{2}}$

Find the exact value.

3. $1-2\sin^{2}\dfrac{7\pi}{12}$

Assume $\angle A$ **is acute.**

4. If $\tan A = \dfrac{1}{2}$ **, find** $\cos 2A$ **and** $\tan 2A$ **without a calculator.**