

Write as a single trig function of a single angle.

$$1. \sqrt{\frac{1 - \cos(80^\circ)}{2}} = \sin\left(\frac{80^\circ}{2}\right) = \boxed{\sin(40^\circ)}$$

$$2. \cos^2\left(\frac{2\pi}{7}\right) - \sin^2\left(\frac{2\pi}{7}\right) = \cos 2\left(\frac{2\pi}{7}\right) = \boxed{\cos\left(\frac{4\pi}{7}\right)}$$

$$3. \sqrt{\frac{1 + \cos(100^\circ)}{2}} = \cos\left(\frac{100^\circ}{2}\right) = \boxed{\cos(50^\circ)}$$

$$4. \frac{2 \tan(35^\circ)}{1 - \tan^2(35^\circ)} = \tan 2(35^\circ) = \boxed{\tan(70^\circ)}$$

$$5. \frac{1 - \cos 98^\circ}{\sin 98^\circ} = \tan\left(\frac{98^\circ}{2}\right) = \boxed{\tan(49^\circ)}$$

$$6. 2 \sin\left(\frac{\pi}{5}\right) \cos\left(\frac{\pi}{5}\right) = \sin 2\left(\frac{\pi}{5}\right) = \boxed{\sin\left(\frac{2\pi}{5}\right)}$$

$$7. 2 \cos^2\left(\frac{2\pi}{5}\right) - 1 = \cos 2\left(\frac{2\pi}{5}\right) = \boxed{\cos\left(\frac{4\pi}{5}\right)}$$

$$8. 1 - 2 \sin^2\left(\frac{\pi}{8}\right) = \cos 2\left(\frac{\pi}{8}\right) = \cos\left(\frac{2\pi}{8}\right) = \boxed{\cos\left(\frac{\pi}{4}\right)}$$