



$$\frac{\frac{1}{2} - \cos 40^\circ \cdot \overbrace{\sin 70^\circ}^{\cos 20^\circ}}{\cos^2 20^\circ - 1} = \frac{\overbrace{\cos(40^\circ + 20^\circ)}^{\cos 60^\circ} - \cos 40^\circ \cdot \cos 20^\circ}{- \sin^2 20^\circ}$$

$$= \frac{\cancel{\cos 40^\circ} \cdot \cancel{\cos 20^\circ} - \sin 40^\circ \cdot \sin 20^\circ - \cancel{\cos 40^\circ} \cdot \cancel{\cos 20^\circ}}{- \sin^2 20^\circ}$$

$$= \frac{-2 \cdot \cancel{\sin 20^\circ} \cdot \cancel{\cos 20^\circ} \cdot \cancel{\sin 20^\circ}}{- \sin^2 20^\circ} = 2 \cdot \cos 20^\circ$$
$$= 2 \cdot \sin 70^\circ$$