Sum and Difference Formulas: Name: _____

1. $\sin(u+v) = \sin(u)\cos(v) + \cos(u)\sin(v)$

2. $\cos(u+v) = \cos(u)\cos(v) - \sin(u)\sin(v)$

3. $\tan(u+v) = \dfrac{\tan(u)+\tan(v)}{1-\tan(u)\tan(v)}$

4. $\sin(u-v) = \sin(u)\cos(v) - \cos(u)\sin(v)$

5. $\cos(u-v) = \cos(u)\cos(v) + \sin(u)\sin(v)$

6. $\tan(u-v) = \dfrac{\tan(u)-\tan(v)}{1+\tan(u)\tan(v)}$

$\sin 75^\circ = \sin(30^\circ + 45^\circ)$

$u \quad v$

$\sin(u+v) = \sin(u)\cos(v) + \cos(u)\sin(v)$

$\sin 75 = \sin 30^\circ \cos 45^\circ + \cos 30^\circ \sin 45^\circ$

$\frac{1}{2} \cdot \frac{\sqrt{2}}{2} + \frac{\sqrt{3}}{2} \cdot \frac{\sqrt{2}}{2}$

$\frac{\sqrt{2}}{4} + \frac{\sqrt{6}}{4}$

$\sin 75^\circ = \dfrac{\sqrt{2}+\sqrt{6}}{4}$