

# Math 150 – Final Exam Formulas Given

Spring 2017, Prof. Beydler

$$\tan(A + B) = \frac{\tan A + \tan B}{1 - \tan A \tan B}$$

$$\tan(A - B) = \frac{\tan A - \tan B}{1 + \tan A \tan B}$$

$$\tan 2A = \frac{2 \tan A}{1 - \tan^2 A}$$

$$\tan \frac{A}{2} = \pm \sqrt{\frac{1 - \cos A}{1 + \cos A}} = \frac{\sin A}{1 + \cos A} = \frac{1 - \cos A}{\sin A}$$

Area of a sector:  $\frac{1}{2} r^2 \theta$

Area of a triangle:  $Area = \frac{1}{2} bc \sin A$

The Dot Product Theorem:  $\vec{u} \cdot \vec{v} = |\vec{u}| |\vec{v}| \cos \theta$  ( $\theta$  is the angle between  $\vec{u}$  and  $\vec{v}$ )