

List of helpful trigonometric material
Math 2260

1. Definitions of trig functions. Expressing $\sec \theta$, $\csc \theta$ and $\tan \theta$ and $\cot \theta$ in terms of $\sin \theta$ and $\cos \theta$.

2. Integrals and derivatives of all the basic trig functions, including \tan , \sec and \csc .

3. Sum of squared trigonometric functions

$$\sin^2 \theta + \cos^2 \theta = 1, \quad \sec^2 \theta = 1 + \tan^2 \theta, \quad \csc^2 \theta = 1 + \cot^2 \theta. \quad (1)$$

4. Half angle formulae:

$$\sin 2\theta = 2 \sin \theta \cos \theta, \quad \cos 2\theta = \cos^2 \theta - \sin^2 \theta. \quad (2)$$

5. Double angle formulae:

$$\cos^2 \theta = \frac{1 + \cos 2\theta}{2}, \quad \sin^2 \theta = \frac{1 - \cos 2\theta}{2}. \quad (3)$$

6. Angle sum formulae:

$$\sin(A + B) = \sin A \cos B + \cos A \sin B \quad \cos(A + B) = \cos A \cos B - \sin A \sin B. \quad (4)$$

7. Angle product formulae:

$$\sin A \sin B = \frac{1}{2} \cos(A - B) - \frac{1}{2} \cos(A + B), \quad (5)$$

$$\cos A \cos B = \frac{1}{2} \cos(A - B) + \frac{1}{2} \cos(A + B), \quad (6)$$

$$\sin A \cos B = \frac{1}{2} \sin(A - B) + \frac{1}{2} \sin(A + B). \quad (7)$$