

Trigonometry

$$\frac{1}{\sin(\theta)} = \text{cosec}(\theta)$$

$$\frac{1}{\cos(\theta)} = \text{sec}(\theta)$$

$$\frac{1}{\tan(\theta)} = \text{cot}(\theta)$$

$$\cos^2 \theta + \sin^2 \theta = 1$$

$$1 + \tan^2 \theta = \text{sec}^2 \theta$$

$$1 + \cot^2 \theta = \text{cosec}^2 \theta$$

$$\sin(\theta) = \sin(180 - \theta)$$

$$\cos(\theta) = \cos(360 - \theta)$$

$$\tan(\theta) = \tan(\theta + 180)$$

Trigonometry

In the Formula Book

$$\sin(A \pm B) = \sin A \cos B \pm \cos A \sin B$$

$$\cos(A \pm B) = \cos A \cos B \mp \sin A \sin B$$

$$\tan(A \pm B) = \frac{\tan A \pm \tan B}{1 \mp \tan A \tan B}$$

Not in the Formula Book (but you can make them by substituting B for A)

$$\sin(2A) = 2 \sin A \cos A$$

$$\cos(2A) = \cos^2 A - \sin^2 A$$

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

To put something in the form

$$R \sin(\theta \pm \alpha) \text{ or } R \cos(\theta \mp \alpha):$$

-Compare to compound angle formula

-Find R using pythagoras: $R^2 = a^2 + b^2$

-Find alpha by dividing sin by cos to get tan