Trigonometry

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

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

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

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

$$1 + \tan^2\theta = sec^2\theta$$

$$1 + \cot^2\theta = cosec^2\theta$$

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

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

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

Trigonometry

In the Formula Book

$$\sin(A \pm B) = sinAcosB \pm cosAsinB$$

$$\cos(A \pm B) = cosAcosB \mp sinAsinB$$

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

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

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

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

$$\cos(2A) = 2\cos^2 A - 1$$

$$\cos(2A) = 1 - 2\sin^2 A$$

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

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