$\cos(\phi) = x_p \quad , \quad \sin(\phi) = y_p \quad , \quad \tan(\phi) = \dfrac{y_p}{x_p}$

$\sin^2(x) + \cos^2(x) = 1$ and $\cos^{-2}(x) = 1 + \tan^2(x)$.

$$\cos(a \pm b) = \cos(a)\cos(b) \mp \sin(a)\sin(b) \quad , \quad \sin(a \pm b) = \sin(a)\cos(b) \pm \cos(a)\sin(b)$$

$$\tan(a \pm b) = \frac{\tan(a) \pm \tan(b)}{1 \mp \tan(a)\tan(b)}$$

$$\begin{aligned}
\sin(p) + \sin(q) &= 2\sin(\tfrac{1}{2}(p+q))\cos(\tfrac{1}{2}(p-q)) \\
\sin(p) - \sin(q) &= 2\cos(\tfrac{1}{2}(p+q))\sin(\tfrac{1}{2}(p-q)) \\
\cos(p) + \cos(q) &= 2\cos(\tfrac{1}{2}(p+q))\cos(\tfrac{1}{2}(p-q)) \\
\cos(p) - \cos(q) &= -2\sin(\tfrac{1}{2}(p+q))\sin(\tfrac{1}{2}(p-q))
\end{aligned}$$

$$\begin{array}{rcl}
2\cos^2(x) = 1 + \cos(2x) & , & 2\sin^2(x) = 1 - \cos(2x) \\
\sin(\pi - x) = \sin(x) & , & \cos(\pi - x) = -\cos(x) \\
\sin(\tfrac{1}{2}\pi - x) = \cos(x) & , & \cos(\tfrac{1}{2}\pi - x) = \sin(x)
\end{array}$$

$$\begin{array}{rcl}
\underline{\sin(x) = \sin(a)} & \Rightarrow & x = a \pm 2k\pi \text{ or } x = (\pi - a) \pm 2k\pi, \quad k \in I\!N \\
\underline{\cos(x) = \cos(a)} & \Rightarrow & x = a \pm 2k\pi \text{ or } x = -a \pm 2k\pi \\
\underline{\tan(x) = \tan(a)} & \Rightarrow & x = a \pm k\pi \text{ and } x \neq \dfrac{\pi}{2} \pm k\pi
\end{array}$$

$$\arctan(x) = \arcsin\left(\frac{x}{\sqrt{x^2+1}}\right) = \arccos\left(\frac{1}{\sqrt{x^2+1}}\right) \quad , \quad \sin(\arccos(x)) = \sqrt{1-x^2}$$