$\sin^6 x + \cos^6 x = \sin x \cos x$

$((3\sin x - \sin 3x))^2 + ((\cos 3x + 3\cos x))^2 = 16 \sin \cos x$

$9\sin^2 x - 6\sin x \cdot \sin 3x + \sin^2 3x + \cos^2 3x - 6\cos x \cdot \cos 3x + 9\cos^2 x = 16 \sin \cos x$

$10 - 6\sin x \cdot \sin 3x - 6\cos x \cdot \cos 3x = 16 \sin x \cos x$

$3((\cos 4x) - \cos(2x)) - 3(\cos(4x) + \cos(2x)) = 16 \sin x \cos x$

$3\cos 4x - 3\cos 2x - 3\cos 4x - 3\cos 2x = 16\sin x \cos x$

$-6\cos 2x = 16 \sin x \cos x$

$-3\cos 2x = 8\sin x \cos x$

$6\sin^2 x - 3 = 8\sin x \cos x$

$6\sin^2 x - 8\sin x \cos x - 3 = 0 \mid : \sin^2 x$

$6 - 8\cos x / \sin x - 3/\sin^2 x = 0 \mid : \sin^2 x$

$1/\sin^2 x = 1 + ctg^2 x$

$6 - 8ctg x - 3(1 + ctg^2 x) = 0$

$ctg x = t$

$-3t^2 - 8t + 6 = 0$

$3t^2 + 8t - 6 = 0$

$D/4 = 16 + 18 = 34$
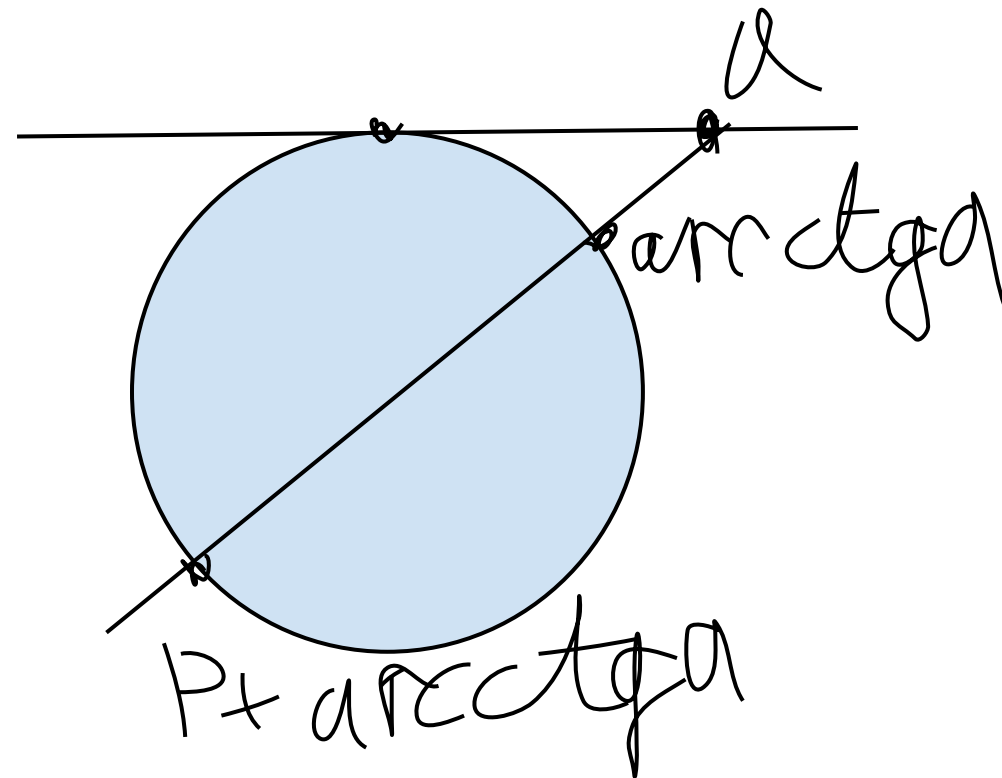
$t_1 = (4 + \sqrt{34})/3$

$t_2 = (4 - \sqrt{34})/3$

$ctg x_1 = (4 + \sqrt{34})/3$

$x_1 = arcctg((4 + \sqrt{34})/3) + pk$

$x_2 = arcctg((4 - \sqrt{34})/3) + pk$

$ax^2 + bxy + cy^2 = 0 \qquad \mid : x^2$

$a + b(y/x) + c(y/x)^2 = 0$

$y/x = t$

$a + bt + ct^2 = 0$