$x^2 + 2x\sin y + 3\cos y = 0$
$\arcsin(x/2 + \sin y) = y - P/3$

$x/2 + \sin y = \sin(y - P/3)$
$x/2 + \sin y = \sin y\cos(P/3) - \sin(P/3)\cos y$
$x/2 + \sin y = \sin y/2 - \sqrt{3}/2\cos y$
$x + 2\sin y = \sin y - \sqrt{3}\cos y$
$x = -(\sqrt{3}\cos y + \sin y)$

$3\cos^2 y + 2\sqrt{3}\cos y\sin y + \sin^2 y + 2(\sqrt{3}\cos y + \sin y)\sin y + 3\cos y = 0$
$3\cos^2 y + 2\sqrt{3}\cos y\sin y + \sin^2 y - 2\sqrt{3}\cos y\sin y - 2\sin^2 y + 3\cos y = 0$
$3\cos^2 y - \sin^2 y + 3\cos y = 0$
$4\cos^2 y + 3\cos y - 1 = 0$
$4\cos^2 y + 3\cos y = 1$
$\cos y = t$
$4t^2 + 3t - t = 0$
$D = 9 + 16 = 25$
$t_1 = (-3 + 5)/8 = ¼$
$t_2 = -8/8 = -1$
$y = \pm\arccos(¼) + 2pk$
$y = p + 2pk$ - не подходит

$-p/2 < y - p/3 < p/2$
$-p/2 + p/3 < y < p/2 + p/3$
$-p/6 < y < 5p/6$
$y = \arccos(¼)$

$x = -(\sqrt{3}/4 + \sin(\arccos(¼)))$
$x = -\sqrt{3}/4 - \sqrt{15}/4 = -(\sqrt{3} - \sqrt{15})/4$
Ответ: $(-(\sqrt{3} - \sqrt{15})/4; \arccos(¼))$

$\sin(\arccos(¼)) = t = \sin(p)$
$\arccos(¼) = p$
$0 < p < P$
$¼ = \cos(p)$
$\pm\sqrt{1 - \cos^2 p} = \sin p$
тк $0 < p < P$ поэтому
$+\sqrt{1 - \cos^2 p} = \sin p$
$\sqrt{1 - 1/16} = \sin p$
$\sqrt{15}/4 = \sin p$