

Q. If the image of the origin taken in the common chord of $x^2 + y^2 - 4x - 4y = 0$ and $x^2 + y^2 - 16 = 0$ is (α, β) . Then $\alpha + \beta =$ _____

Answer: 8

Solution:

Equation of common chord is $S_1 - S_2 = 0$

$$(x^2 + y^2 - 4x - 4y) - (x^2 + y^2 - 16) = 0$$

$$x + y = 4$$

By simple geometric observation, the image of $(0,0)$ in $x + y = 4$ is $(4,4)$ [Or use mirror image formula]

$$\alpha + \beta = 4 + 4 = 8$$

