$$Y = \sin(x+y)$$

$$Y^1 = \cos(x+y)(1+y)$$

$$Y^1 = \cos(x+y) + Y^1(\cos(x+y))$$

$$Y^1 - Y^1 \cos(x+y) = \cos(x+y)$$

$$Y^1(1-\cos(x+y)) = \cos(x+y)$$

$$Y^1 = \cos(x+y)/1-\cos(x+y)$$

Given, $Y^1 = 0$

Then,

$$Y^1 = \cos(x+y)/1-\cos(x+y) = 0$$

Therefore,

$$\text{Cos}(x+y) = 0$$

$$(x+y) = \cos^{-1}0$$