

### Conditions

solve  $y = \sin(x+c)$  for  $c$  with 2 given values for  $x$  and  $y$

### Solution

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

$$x + c = \arcsin(y) + 2\pi n, n \in \mathbb{Z}; c = \arcsin(y) - x + 2\pi n$$

For example, let's  $x = 0, y = 0$ . Then

$$0 = \sin(0 + c), \sin c = 0, c = \pi n, n \in \mathbb{Z}$$