$$\gamma(\pi/4)=eta(\pi/8)=eta(9\pi/8)$$
 $\gamma(\pi/4)=eta(\pi/8)=eta(9\pi/8)$
 $\gamma(0)=eta(0)=eta(\pi)$
 $\gamma(2\pi)=eta(2\pi)$

 $\gamma(\pi/2) = \beta(\pi/4) = \beta(5\pi/4)$

 $\gamma(3\pi/2) = \beta(3\pi/4) = \beta(7\pi/4)$