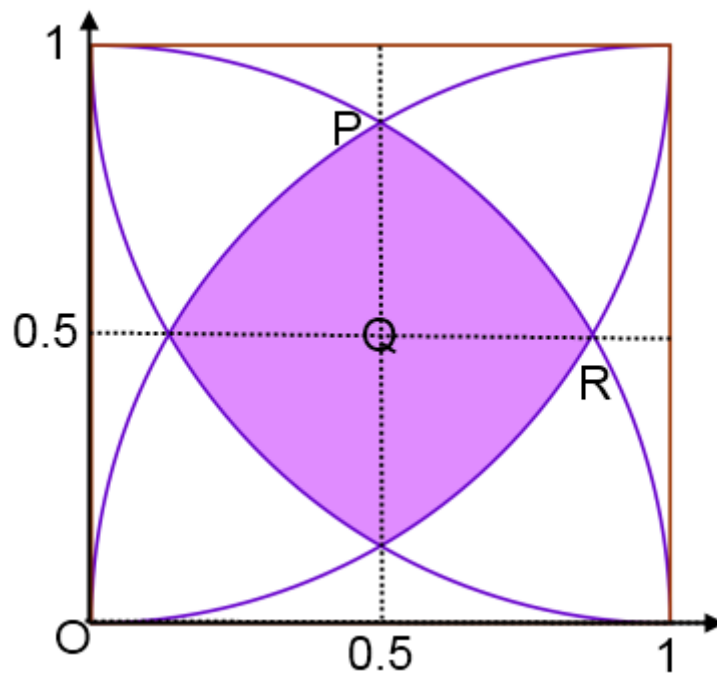


Problem: Work out the purple shaded area.

One method: find the area under the curve between P and R, and then subtract the rectangle to give the curved area PQR.



The equation of the circle passing through P and R, centre O, is $x^2 + y^2 = 1$ which can be written $y = \sqrt{1-x^2}$.

The coordinates of P are....

The coordinates of R are....

To find the area under the curve between P and R, I need to integrate....

To find the curved area PQR I need to subtract....

The shaded area is four times the curved area PQR....