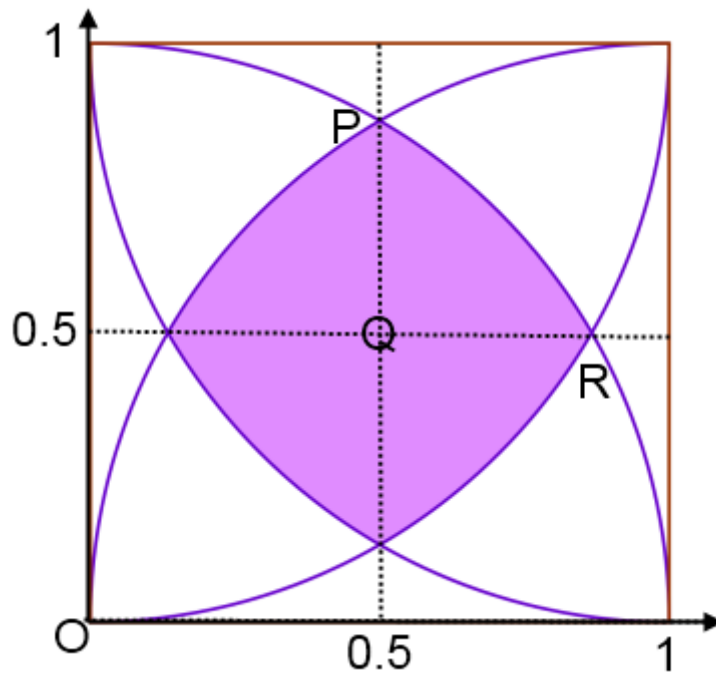Problem: Work out the purple shaded area.

One method: Work out the curved area PQR by working out the area of the sector POR and subtracting the area of the triangles OQP and OQR.

The equation of the circle passing through P and R, centre O, is $x^2+y^2=1$

The coordinates of P are….

The coordinates of R are….

Angle POR is….

Area of the Sector POR is….

Triangles OQR and OQP are congruent. Triangle OQP has base QP =…. and height ….

Curved area PQR is Sector POR – Triangle OQR – Triangle OQP = ….

Total shaded area is four times curved area PQR = ….