

Problem statement Suppose R is the region in the plane enclosed by $y = x^2$ and $y = 4$.

a) Compute the perimeter P and area A of R , and then compute the ratio $Q = A/P^2$.

Note By squaring the perimeter the ratio becomes independent of the units chosen to measure the region.

b) Compute this ratio $Q = A/P^2$ for these four regions: the region R , a square, a circle, and an equilateral triangle. Draw the figures in increasing order of Q .