

Happy Graphs

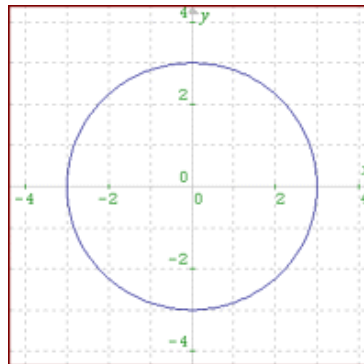
I maintain that there is happiness to be found in mathematics.

What follows is a short proof.

Step 1: Graph

$$x^2 + y^2 = 9$$

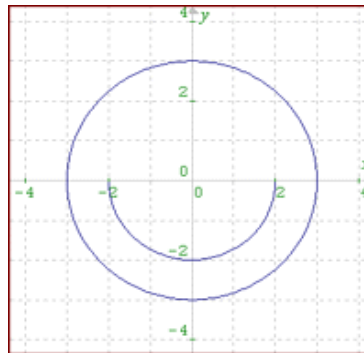
Result:



Step 2: also graph

$$y = \sqrt{4-x^2}$$

Result:

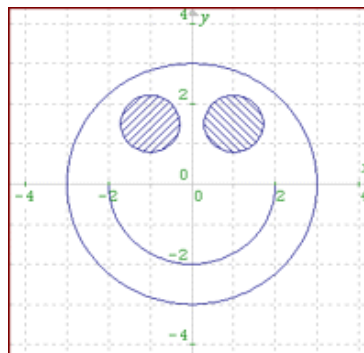


Step 3: also graph

$$(x-1)^2 + (y-3/2)^2 \leq 1/2$$

$$(x+1)^2 + (y-3/2)^2 \leq 1/2$$

Result:



Q.E.D.