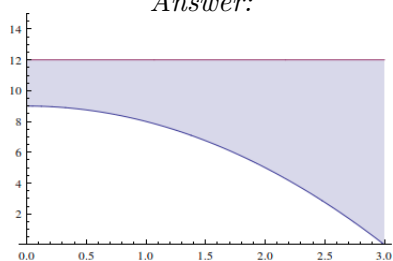# Lab 3 Practice

September 17, 2013

1a. Let A be the region bounded by $y = 9 - x^2$, $y = 12$, $x = 0$, and $x = 3$. Plot this with Mathematica.

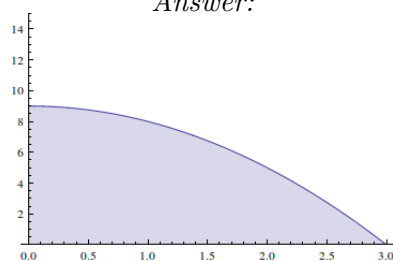*Answer:*

2a. Plot the region A under the graph of $f(x) = 9 - x^2$ for $0 \le x \le 3$ about the vertical axis $x = -2$.

Answer:

1b. Find the volume V obtained by revolving the region A about the line $y = 15$.
Answer: $\frac{1188\pi}{5}$.

1b. Find the volume V obtained by revolving the region A about the line $x = -2$.
Answer: $\frac{225\pi}{2}$

3. Calculate the volume V obtained by rotating the region under the graph of $f(x) = x^{-1/2}$ over $[1, 4]$ about the line $x = -3$. *(Hint: Shell Method* *Answer:* $\frac{64\pi}{3}$