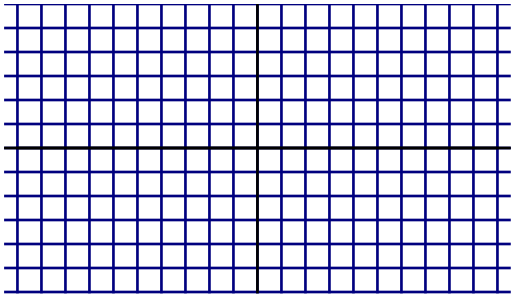
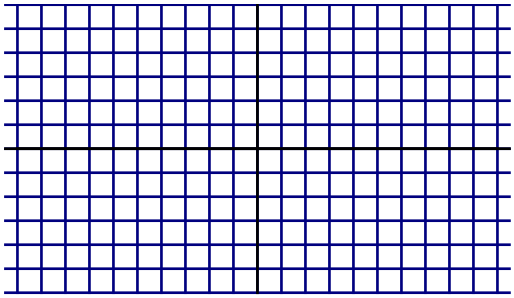
Chapter 7 Test January 23, 2012 No Calculators Name

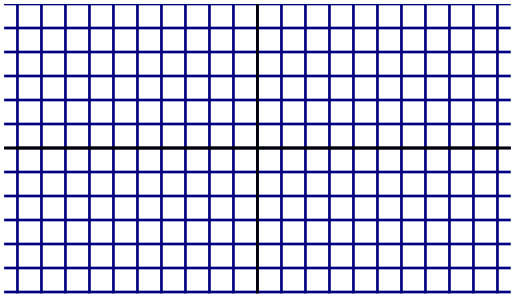
1. Find the area of the region bounded by the graphs of the equations $y = \cos x$ and $y = \cos 2x$, on the interval $[0, \pi]$



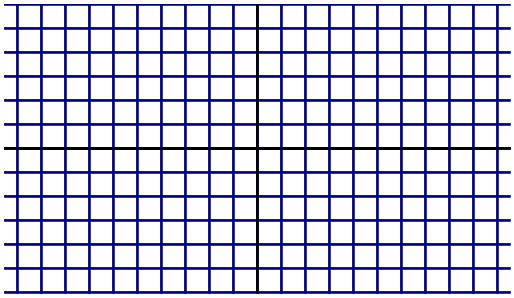
2. Find the area of the region bounded by the graphs of the equations $y = 2x^2$ and $y = x^4 - 2x^2$



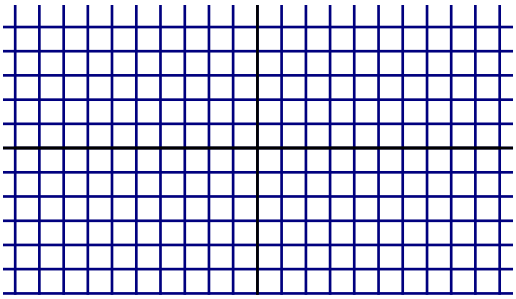
3. A solid has as its base the region in the xy – plane bounded by the graphs of the equations $x = y^2$ and $x = 4$. Every cross section by a plane perpendicular to the x – axis is a square, with diagonal in the xy – plane. Find the volume of the solid.



4. A solid has as its base the region in the xy – plane bounded by the graphs of the equation $y = \tan x$ and $y = \sec x$ on the interval $\left[\frac{-\pi}{3}, \frac{\pi}{3}\right]$. Every cross section by a plane perpendicular to the x – axis is a circle, with diameter in the xy – plane. Find the volume of the solid.

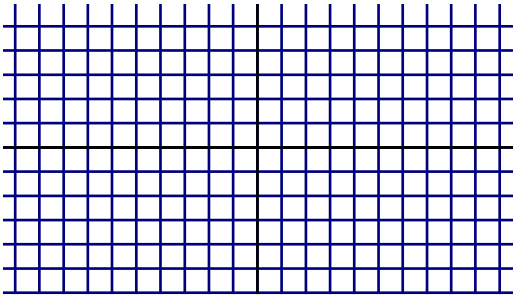


5. Find the volume of the solid generated by revolving the region bounded by the graphs of the equations $y = 4 - x^2$ and $y = 2 - x$, about the x – axis.

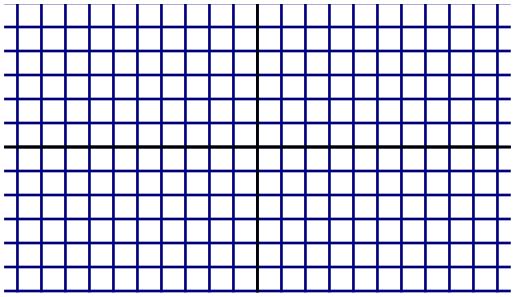


6. Find the length of the arc for the function $y = \int_{-2}^{x} \sqrt{5t^6 - 1}\, dt$ from $x = -2$ to $x = -1$.

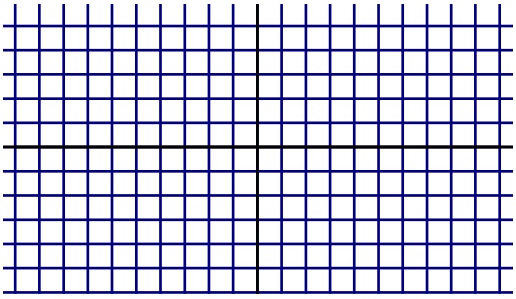
7. Find the volume of the solid generated by revolving the region bounded by the graphs of the equations $y = \sqrt{x - 2}$, $y = 0$, and $x = 6$ about the line $x = 1$.



8. Find the volume of the solid generated by revolving the region bounded by the graphs of the equations $x = 2^y$, $y = 0$, and $x = 4$, about the line $x = 5$. Set up the integral only.



9. Find the volume of the solid generated by revolving the region bounded by the graphs of the equations $y^2 = x - 1$ and $x = 5$ about the line $y = -2$. Set up the integral only.



10. Find the volume of the solid generated by revolving the region bounded by the graphs of the equations $y = \sin x$ and $y = \cos x$, on the interval $\left[\frac{-\pi}{4}, 0\right]$ about the line $y = 1$. Set up the integral only.