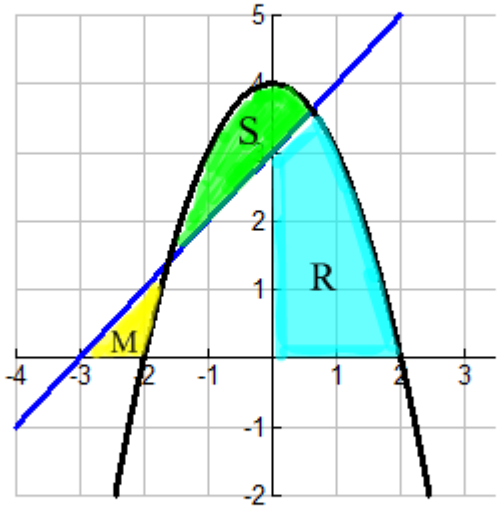
AP Calculus AB **Name**_____
Areas and Volumes
Formative Quiz



1. Let ***R*** be the region in the first quadrant bounded by the *x*-axis and the graphs of $f(x)=x+3$ and $g(x)=-x^2+4$. Region ***S*** is bounded by the two curves and region ***M*** is bounded by the two curves and the *x*-axis in the second quadrant.
   a. Find the area of ***R***.
   b. Find the area of ***M***.
   c. Find the volume of a solid when area ***S*** is rotated about the line $y=5$.
   d. Region ***S*** is the base of a solid. For the solid, each cross section perpendicular to the *x*-axis is an equilateral triangle. Write but do not solve an integral expression for the volume of this solid.
