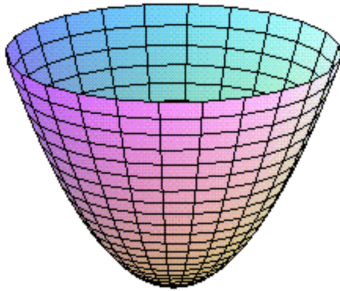


**Show work for full credit. Go for the most point. Don't get bogged down on any one problem.**

**1. [5.2 Volumes] (10 pts).** Use disk/washers to determine the volume of the solid obtained by rotating the region bounded by  $y = 2x^2$ ,  $y = 8$  and the  $y$ -axis about the  $y$ -axis

(i) Sketch the  $x$  &  $y$  axii on this 3-D view:      (ii) Sketch the side view showing the disk/washer:



(iii) What will the thickness be?  $dx$  or  $dy$  ? (Circle one) Indicate this on the side view sketch above.

(iv) What will the radius and area of the disk/washer be in terms of the variable selected in (iii)?

radius:  $r =$  \_\_\_\_\_

area =  $\pi r^2 =$  \_\_\_\_\_

(v) What will the volume of the disk/washer be? Volume = area \* thickness

volume = \_\_\_\_\_

(vi) What are the variable limits in terms of the variable selected in (iii)? circle it below

a: from  $x$  or  $y =$  \_\_\_\_\_ to b:  $x$  or  $y =$  \_\_\_\_\_

(v) Set the integral up but do not solve it

$$V = \int_{a=}^{b=} \text{_____} d_$$