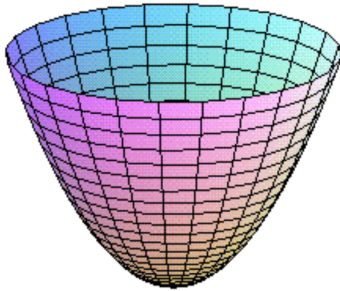


2. [5.3 Volumes by Shells] (10 pts) Use cylindrical shells to determine the volume of the solid obtained by rotating the region bounded by $y = 2x^2$, $y = 8$ and the y -axis about the y -axis {yes, same as prob 1}

- (i) Sketch the x & y axii on this 3-D view: (ii) Sketch the side-view. Place a thin cylindrical shell in the drawing



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

(iv) What will the radius, height and sidewall area of the shell be in terms of the variable selected in (iii)?

radius: $r =$ _____

height: $h =$ _____

sidewall area = $2\pi r h =$ _____

(v) What will the volume of the shell be? Volume = shell sidewall 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

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