A three-dimensional object is created by rotating the curve \( y = x^{2/3} \) about the \( x \)-axis from \( x = 0 \) to \( x = 8 \) as shown. Find the volume of this object as follows

1. Determine an axis to slice the object along into tiny circular discs
   
   Axis of integration: ________________

2. Determine the volume of a typical slice
   
   (a) Draw a typical slice then identify and label its radius \( r \) and its thickness with appropriate arrows. Find the volume of the slice in terms of these variables.

\[
dV = __________________________
\]
(b) Draw a graph of the $x$-$y$ cross section. In the graph, draw a typical slice that matches your slice in part (2) and label its dimensions with appropriate arrows. Labels must be consistent with the variables used on the figure of a typical slice.

(c) Write the volume of a typical slice in terms of the variable of integration.

$$dV = \text{________________________}$$

3. Find the bounds of integration and write the integral that gives the total volume.