A three-dimensional object is created by rotating the curve \( y = \frac{3}{2} \sin \left( \frac{\pi}{4} x \right) \) about the line \( y = 3 \) from \( x = 0 \) to \( x = 4 \) as shown to the right.

1. Axis of integration: ____________

2. Find the volume of a typical slice. Use the blank space below to

   (a) Draw a typical slice and label its dimensions with appropriate arrows.

   (b) Draw the \( x-y \) cross section, the corresponding slice and label its dimensions. Labeling must be consistent.

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