A region is bounded by the $x$-axis, the line $x = 2$ and the curve $y = \frac{1}{2}\sqrt{x + 2}$ as shown here.

Find this area by integrating along the $y$-axis using thin horizontal slices.

1. In the shaded area draw a typical slice (that is a thin horizontal rectangle that goes from the left boundary to the right boundary).

2. Correctly label the height and width of your slice in the above figure. Get feedback.

3. Write a formula for the area of your slice.

\[ dA = \]

4. Write an integral for the total shaded area. Enter your answer in WebAssign.