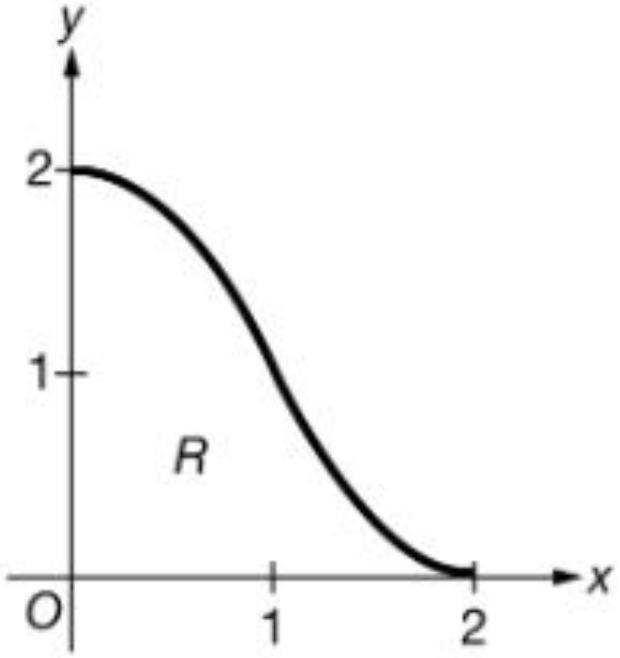
Unit 8 - End of Unit FRQ Review

Calc. AB/BC

Warmup: Questions from Lesson 8.13?

If you haven’t finished the CA worksheet from yesterday take it out and continue to work on it during this time.

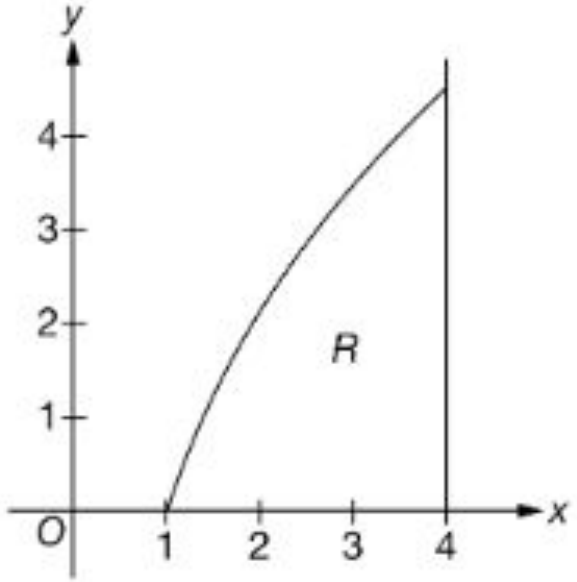


Let f be the function defined by $f(x) = \begin{cases} 2 - x^2 & \text{for } 0 \le x < 1 \\ (x-2)^2 & \text{for } 1 \le x \le 2 \end{cases}$. Let R be the region in the first quadrant bounded by the graph of f and the x- and y-axes, as shown in the figure above.

(a) Find the area of R.

(b) Region R is the base of a solid. For this solid, each cross section perpendicular to the x-axis is a square. Write, but do not evaluate, an expression involving one or more integrals that gives the volume of the solid.

(c) The portion of the region R for $1 \leq x \leq 2$ is revolved about the y-axis to form a solid. Find the volume of the solid.



Let R be the region bounded by the graph of $y = \frac{3(x-1)}{\sqrt{x}}$, the x-axis, and the vertical line $x = 4$, as shown in the figure above.

(a) Find the area of R.

(b) Find the volume of the solid generated when R is revolved about the x-axis.

Notes Filled In:

AP Calc. AB/BC - Unit 8 FRQ Review - Filled In