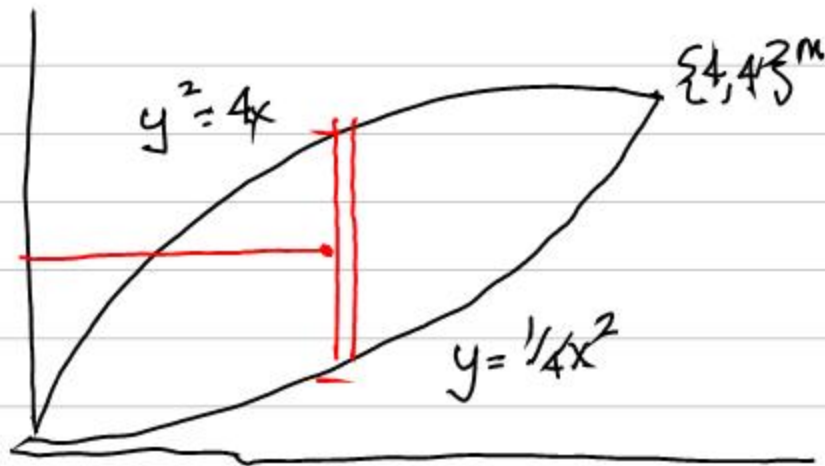


9 Nov 2009



$$dA = (y_{\text{top}} - y_{\text{bottom}}) dx$$

$$y_{\text{top}} = 2x^{1/2} \quad y_{\text{bottom}} = \frac{1}{4}x^2$$

$$\bar{x} = \frac{\int x dA}{\int dA} = \frac{\int_0^4 (2x^{1/2} - \frac{x^2}{4}) x dx}{\int_0^4 (2x^{1/2} - \frac{x^2}{4}) dx}$$

$$\frac{\frac{4}{5} x^{5/2} - \frac{x^3}{12} \Big|_0^4}{\frac{4}{3} x^{3/2} - \frac{x^3}{12} \Big|_0^4} = \frac{\frac{4}{5}(32) - 16}{\frac{4}{3}(8) - \frac{64}{12}} = \boxed{1.8 \text{ m}} = \bar{x}$$