

4. A force of $F = 20x - x^3$ stretches a nonlinear spring by x meters. What work is required to stretch the spring from $x=1$ to $x=3$ meters?

5. Find the center of mass (\bar{x}, \bar{y}) for the region bounded by $y = \frac{5}{4}x^2$, $y = 5$ assuming constant density.