

Math 151  
In-class Worksheet

1. Compute the following

- (a) The area between the curve  $y = 8x - x^4$  and the  $x$ -axis.
- (b) The average value of  $f(x) = x\sqrt[3]{x^2 - 1}$  on the interval  $[0, 3]$ .

2. Evaluate the following integrals.

(a)  $\int \frac{x}{\sqrt{x^2 - 9}} dx$

(b)  $\int \frac{x}{\sqrt{x - 9}} dx$

(c)  $\int \frac{1}{\sqrt{x - 9}} dx$

(d)  $\int \frac{\sin t}{\cos^5 t} dt$

(e)  $\int_0^{\pi/4} \tan t \cdot \sec^4 t dt$