

Closing Wed. Apr 6: HW\_1A, 1B, 1C

Print off Worksheet 1 (“The Area Problem”) for quiz section tomorrow.

See new postings online  
(Riemann Sums summary)

**Entry Tasks:**

- (a) Assume  $f''(x) = 5\sqrt{x} + x$ ,  
 $f(0) = 3$ ,  $f(1) = 4$   
Find  $f(x)$ .
- (b) Ron steps off the 10 meter high  
dive at his local pool. Find a  
formula for his height above the  
water.

## 5.1 Defining Area

In Calculus I, you defined

$$\begin{aligned} f'(x) &= \text{'slope of the tangent at } x\text{'} \\ &= \lim_{h \rightarrow 0} \frac{f(x+h) - f(x)}{h} \end{aligned}$$

In Calculus II, we will see that antiderivatives are related to the area 'under' a graph

$$= \lim_{n \rightarrow \infty} \sum_{i=1}^n f(x_i^*) \Delta x$$