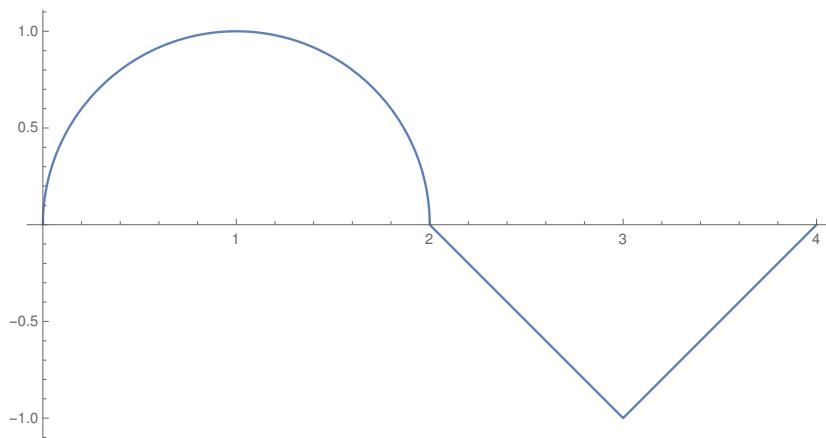


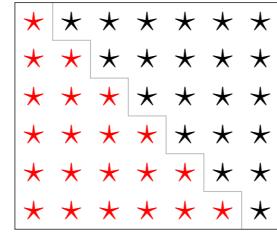
## Math 141 Group Quiz 6

Names: \_\_\_\_\_

1. Find  $f(x)$  if we know that  $f''(x) = x^2 + 3$  and  $f(0) = 1$  and  $f'(0) = 2$ .

2. Recall from yesterday that  $f(t)$  is the area under the graph of  $f'(x)$  on  $[0, t]$ .  
My velocity in meters per second is shown below. How far have I traveled after 3 seconds?





3. Why does this picture suggest  $2(1 + 2 + 3 + \dots + n) = n(n + 1)$ ?

4. a. Approximate the area under the graph of  $f(x) = x$  on  $[0, 1]$  using  $n$  rectangles.

b. Use the sum in question 2. to simplify the sum in part a.

c. Take  $\lim_{n \rightarrow \infty}$  of the answer you found in part b.