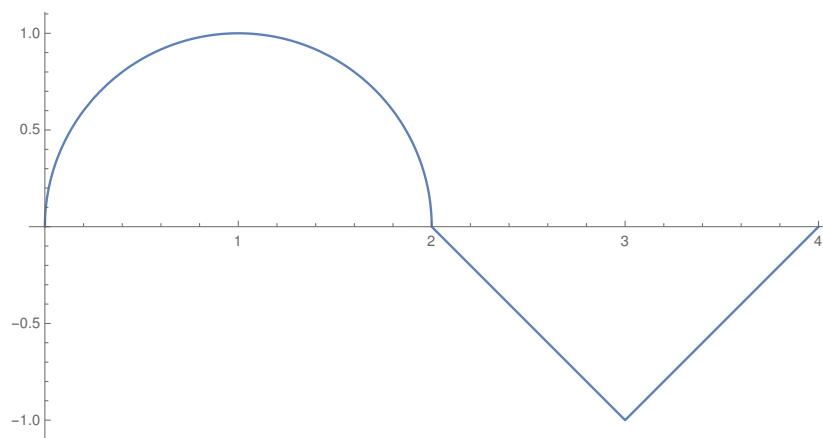


Math 141 Group Quiz 6

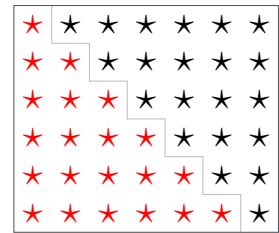
Names: _____

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 $2(1 + 2 + 3 + \cdots + n) = n(n + 1)$?



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.