

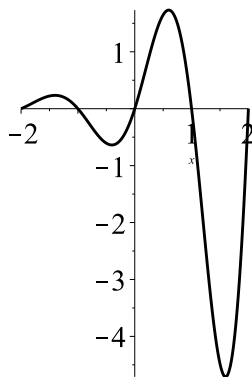
In-Class Assignment 11

MATH 141

Directions: Work neatly on a separate sheet of paper. Your group will hand in one write-up with everyone's name on it. **DO NOT** fold the corner over to hold everything together!

Work together on each problem; do not delegate different problems to different people.

1. The graph below is of $y = f'(x)$.



- (a) If $f(0) = 2$, approximately what is $f(1)$?
- (b) The function f has two local maxima on $[-2, 2]$. At what values of x do they occur?
- (c) Define $g(x)$ by $g(x) = \int_0^x f'(x)dx$. What is $g'(1)$?
2. A car travels with a velocity of $v(t) = 4t^3 - 3t^2 + 2$ meters per second. What is the net change in position of the car between $t = 3$ and $t = 5$?
3. Integrate.

(a) $\int_1^e \frac{1}{x} dx$

(b) $\int_0^{\pi/4} \frac{1}{1+x^2} dx$

(c) $\int_1^4 (e^x + \sin(\pi x)) dx$

(d) $\int (6x^2 + \cos x) dx$