

**Math 16B: Short Calculus II**  
**Winter 2018, Section 3**  
**Homework Sheet 3**  
**Due: Monday, February 5, 2018**

Submit your solutions to the following problems in lecture on the due date above. Present your work in a clean and organized fashion, either on a printed copy of this document (preferred) or a separate sheet of paper. As stated in the syllabus, late submissions will **not** be accepted.

1. Evaluate the following indefinite integrals.

(a)  $\int \left( 8x^3 - 6x + 1 + \frac{1}{x} + \sqrt{x} \right) dx$

(b)  $\int (5e^{3x} + \sin(5x) + \cos(2x)) dx$

2. Solve the following initial value problem.

$$f''(x) = 6x + 3, \quad f'(1) = 5, \quad f(0) = 3$$

3. Suppose the velocity of an accelerating car (in ft/sec) is given by the following equation.

$$v(t) = 3t^2 + 10t + 1$$

How far does the car travel in the first 10 seconds?