

Please **read** Sections 5.2 and 5.3. Also please **do**:

- (a) **Section 5.2, Part 1: Indefinite integrals** (pages 254–255): Exercise 1abcdfhjmnqr.
- (b) **Section 5.2, Part 2: Definite integrals** (page 255): Exercise 2abcdg.
- (c) **Section 5.2, Part 3: Initial value problems** (page 255-256): Exercises 3, 4.
- (d) **Section 5.3, Part 1: The separation of variables method** (pages 267–268): Exercises 1, 2abcd.

Hints:

- Exercise 1, Section 5.2: For part (c), try $u = \sqrt{x}$. For part (h), try $u = \tan(x)$. For part (q), try $u = 2y$ (and remember what the derivative of $\arctan(u)$ is).
- Exercise 2, Section 5.2: For part (d), try $u = \arctan(x)$. For part (g), try $u = x/2$ (and remember what the derivative of $\arctan(u)$ is).