

Things You Should Know/Be Able to Do

Note: many of the OpenStax exercises have a paragraph above the first one telling you more details about the problem, so if you're not sure what the question is asking, look above it to see if there's a paragraph starting with "In the following exercises...."

Note also that reviewing problems from your homework and WeBWorK can be helpful.

- Solve optimization problems (e.g., Apex Section 4.3 Exercises 3–17; OpenStax Section 4.7 Exercises 311–312, 315–355)
- Find antiderivatives—general as well as specific given certain conditions (e.g., Apex Calculus Section 5.1 Exercises 8–18, 22–26, 28, 30, 31, 33, 34, 36, 37, 38; OpenStax Calculus Section 4.10 Exercises 465–467, 468, 470, 473–481, 484–488, 490–497, 499–504, 506–507)
- Do antiderivative application problems (using calculus, not memorized physics equations) (e.g., Apex Calculus Section 5.2 Exercises 14–17, Section 5.4 Exercises 40, 41, 43–48; OpenStax Calculus Section 4.10 Exercises 509–514, Section 5.3 Exercises 144–145)
- Estimate the area under a curve using approximating rectangles and draw a picture illustrating your estimate (e.g., Apex Calculus Section 5.3 Exercises 27, 29, 32; OpenStax Calculus Section 5.1 Exercises 12–19, 22–26, 38–40, 42–45,)
- Find the area under a curve using geometry (e.g., Apex Calculus Section 5.2 Exercises 5–3; OpenStax Calculus Section 5.2 Exercises 70–83, 96)
- Find the area under a curve as a limit of Riemann sums (e.g., Apex Calculus Section 5.3 Exercises 33, 34, 36–38; OpenStax Calculus Section 5.2 Exercises 60–68,)
- Find integrals using properties of integrals (e.g., Apex Calculus Section 5.2 Exercises 18–25; OpenStax Calculus Section 5.2 Exercises 88–93, 98–103)
- Use the Fundamental Theorem of Calculus (both parts) (e.g., Apex Calculus Section 5.4 Exercises 5–9, 12, 13, 15–17, 19–27, 53–55; OpenStax Calculus Section 5.3 Exercises 150–157, 160(a,b), 161(a, b), 162(a, b), 163(a, b), 170–189, 197)
- Interpret definite integrals and use them in context (e.g., OpenStax Calculus Section 5.4 Exercises 213, 223–231, 239–243)