

$$y = 5 \ln(3x^2 + 8) - 3x$$

Award-winning ALEKS Now Offers a Complete Calculus Course

For more than 20 years, the leading adaptive learning platform ALEKS has dramatically improved student success with its best-in-class content, individualized instruction, and trusted, mastery-based approach.

Now you and your students can experience these benefits through a rigorous ALEKS Calculus course — complete with a personalized learning path, instant feedback, continuous assessment, and nearly unlimited practice.

Why Choose ALEKS for Calculus?

- **Built-in prerequisite Algebra and Precalculus content** makes it easier for students to fill in knowledge gaps and be more prepared for Calculus.
- **A personalized learning path** increases retention by providing individual support and reinforcement where a student needs it most.

Interactive gradable tools

Sketching the region bounded by curves and finding its area

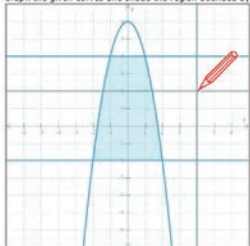
Use these curves to complete the parts below.

$$y + 2x^2 = 6$$

$$y = 4$$

$$y = -2$$

(a) Graph the given curves and shade the region bounded by them.



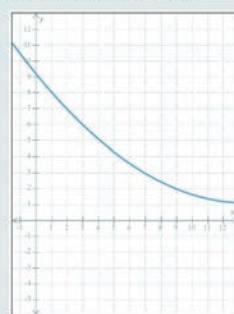
(b) Find the area of the region bounded by the given curves. Give an exact answer (not a decimal approximation).

- **Top-tier answer input tools and an open response environment** provide students with an active and authentic learning experience.

Ungraded scratch area

Answer the questions below. Note that you can draw on the grid, but it will not be graded.

Scratch Area (Not Part of Answer)



$$(3x^2 + 8) -$$

$$\int_4^1 g(x) dx$$



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Immediate feedback

Finding the most general antiderivative: Algebraic

Find the most general antiderivative F of the function f .

$$f(x) = \frac{-2}{x^8}$$

$$F(x) = \frac{2}{7x^7}$$

Be Careful

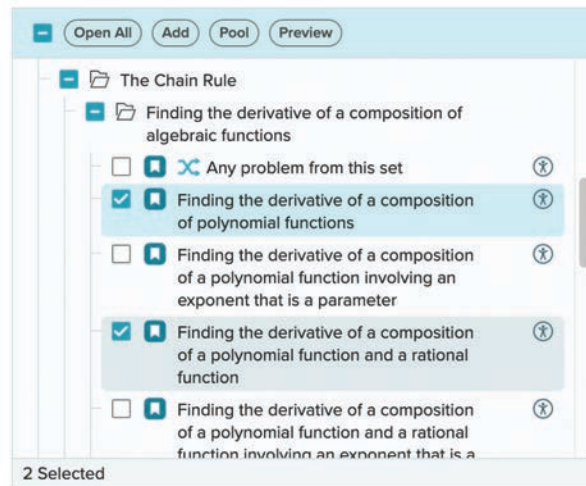
Make sure to add an arbitrary constant.

OK

- **Just-in-time error correction** gives students immediate feedback so they can address issues right away through practice and achieve a true comprehension of core skills and definitions.

- **Ultimate flexibility for teachers** offers the freedom to assign targeted practice outside the personalized path, choosing the question types they prefer — conceptual, procedural or application-based — with granular variations that pinpoint distinct approaches.

Teacher-assigned practice



Worked example with notes

EXPLANATION

To approximate the area of a region under a curve, we might use shapes we can easily find the area of, such as rectangles. Here is an example.

Example:

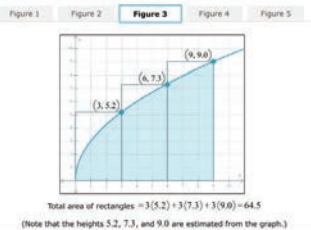
Consider the curve $y = \sqrt{x}$ shown below in the tab marked Figure 3. Suppose we wish to estimate the area under the curve for x in $[0, 9]$. In other words, we would like to estimate the area of the region that lies under the curve, above the x -axis, and between the values $x = 0$ and $x = 9$. This region is shaded in the tab marked Figure 2.

We will estimate the area of this region using rectangles. To do this, we will divide the interval $[0, 9]$ into three subintervals of equal length. The subinterval length will give the width of each rectangle. Then we will choose a sample point in each subinterval to approximate the value of the function on that subinterval. The value of the function at that point will give the height of the rectangle for that subinterval.

See Figures 3, 4, and 5.

- In Figure 3, the sample point is the right endpoint of the subinterval. Using the total area of the rectangles to estimate the area of the shaded region gives an overestimate, because the total area of the rectangles is clearly more than the area of the shaded region. The calculation for the total area of the rectangles is shown beneath the graph in Figure 2.

- In Figure 4, the sample point is the left endpoint of the subinterval. Using the total area of the rectangles to estimate the area of the shaded region gives an underestimate. (In fact, there are only two rectangles entering into the estimate.) The calculation for the total area of the rectangles is shown beneath the graph in Figure 4.



- **A step-by-step worked example for every topic** helps students visualize concepts and learn from accessible explanations.

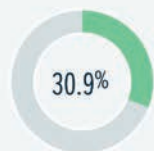


Standards Report

Standards: AP Calculus AB Course and Exam Description (Organized by Units) (2020) Data from assignments: Included

Initial Progress Current Progress

Current Standards Progress



25 of 81 standards
+0.4% from initial

Current Progress by Strand

Unit 1: Limits and Continuity

32.8% (5.3 of 16) +0%

Unit 4: Contextual Applications ...

44.6% (3.1 of 7) +0%

Unit 7: Differential Equations

0% (0 of 7) +0%

Unit 2: Differentiation: Definitio...

38.1% (3.8 of 10) +0%

Unit 5: Analytical Applications o...

38.1% (4.6 of 12) +0%

Unit 8: Applications of Integration

16.7% (2 of 12) +0%

Unit 3: Differentiation:...

31.7% (1.9 of 6) +0%

Unit 6: Integration and...

39.9% (4.4 of 11) +2.9%

Mathematical Practices

30.9% (7.1 of 23) +0.7%

Teachers can easily monitor progress aligned to AP Calculus Course and Exam Units

ALEKS Calculus Aligns with Academic Standards for:

- High School Calculus
- AP Calculus AB
- AP Calculus BC (available 2026)

Comprehensive Course Content Includes:

- Algebra and Precalculus content (prerequisites for Calculus)
- Limits and the definition of the derivative
- Differentiation
- Applications of differentiation
- Integration
- Applications of integration
- Integration techniques
- Differential equations
- Parametric equations and polar coordinates (Coming Fall 2026 for Calculus BC)
- Sequences and series (Coming Fall 2026 for Calculus BC)



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Types of Topics Covered:

- Conceptual understanding of limits, derivatives and integrals
- The Big Theorems and their multiple aspects and implications; learning to ask the right questions
- Calculations and derivations based on definitions
- Traditional skills
- Multi-concept synthesis
- Word problems and real-world applications

Teaching with a textbook? Optionally integrate your textbook with **ALEKS Calculus and get:**

- A textbook TOC view when selecting course or assignment content
- The ability to align learning paths with textbook chapters
- Chapter references placed within *ALEKS* topics (for students)

References to any part of any textbook are for identification purposes only. No implication is intended that ALEKS Corporation is endorsing any textbook, or that any textbook author or publisher is endorsing ALEKS. ALEKS Corporation is solely responsible for the development, selection, and sequencing of all ALEKS content. List of textbooks available for integration is subject to change.

