

Last Thoughts

From College Board

If you use your calculator to solve an equation, write the equation first.

An answer without an equation might not get full credit, even if it is correct.

If you use your calculator to find a definite integral, write the integral first.

An answer without an integral will not get full credit, even if it is correct.

Do not waste time erasing bad solutions.

If you change your mind, simply cross out the bad solution after you have written the good one. *Crossed-out work will not be graded.* If you have no better solution, leave the old one there. It might be worth a point or two.

From College Board

Do not use your calculator for anything except:

(a) *graph functions*, (b) *compute numerical derivatives*, (c) *compute definite integrals*, and (d) *solve equations*. In particular, do not use it to determine max/min points, concavity, inflection points, increasing/decreasing, domain, and range. (You can explore all these with your calculator, but your solution must stand alone.)

Be sure you have answered the problem.

For example, if it asks for the maximum value of a function, do not stop after finding the x at which the maximum value occurs. Be sure to express your answer in correct units if units are given.

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If you can eliminate some incorrect answers in the multiple-choice section, it is advantageous to guess.

Otherwise it is not. Wrong answers can often be eliminated by estimation, or by thinking graphically.

If they ask you to justify your answer, think about what needs justification.

They are asking you to say more. If you can figure out why, your chances are better of telling them what they want to hear. For example, if they ask you to justify a point of inflection, they are looking to see if you realize that a sign change of the second derivative must occur.

Top 10 Mistakes

1. $f''(x)=0 \iff (x, f(x))$ is point of inflection.
2. $f(x)$ is a maximum(minimum) $\iff f'(x)=0$
3. Average rate of change on $[a,b]$ is $\frac{f'(a)+f'(b)}{2}$
4. Volume by washers is $\pi \int_a^b (R-r)^2 dx$
5. Separable differential equations can be solved without separating the variables

Top 10 Mistakes

6. Omitting the constant of integration (+ c)
7. Graders will assume the correct antecedents for pronouns used in justifications
8. If the correct answer is present then your setup must have been correct
9. Universal logarithmic differentiation

$$\int \frac{1}{f(x)} dx = \ln|f(x)| + c$$

10. $\frac{d}{dx} f(y) = f'(y)$ and other chain rule errors

Other tips

- Hesitate if computations get extremely complicated
- Read each of the Free Response questions and do them in the order that works for you
- Show all your work!!!
- Be sure to answer the question that was asked
- Be complete, but concise, in your explanations
- Work needs to be orderly and progress down and to the right
- Write neatly – they can't grade what they can't read or understand
- Clearly mark your answer
- Write complete integral statements
- Exact answers or 3-decimal accuracy, unless otherwise stated
- Give Calculus explanations based in theorems and definitions, not Precalculus or "common sense" or lines of reasoning
- When referencing a theorem, clearly show that the conditions of the theorem have been met