Math 231 Test #1

Your Name:

Please circle your discussion group (2 pt)

|  |  |  |
| --- | --- | --- |
| 1 Gan Yinliang B416 | 4 Zhang Jinghao B425 | 7 Loigen Sodian B416 |
| 2 Zhang Junwei B424 | 5 Xu Hang B419 |  |
| 3 Ke Wentao B419 | 6 Huang Nuoer B410 |  |

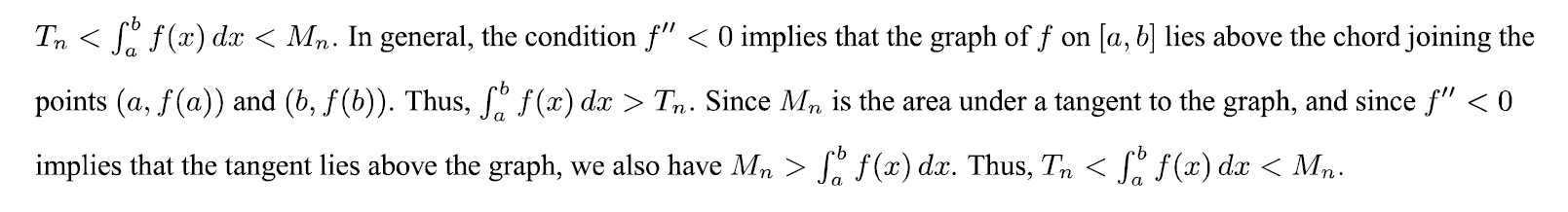
* You will have one hour for the exam.
* No notes, books or electronics during the exam.
* Do not open this test booklet until a proctor says start.
* For all free response questions, show work that justifies your answer.
* Raise your hand if you have a clarification question.
* Scratch paper is provided. You can ask for more if needed.
* Do not leave early: this disturbs others. If you finish your test early, check your work

or just relax.

* Quit working when the test ends and hand your test booklet to proctors.

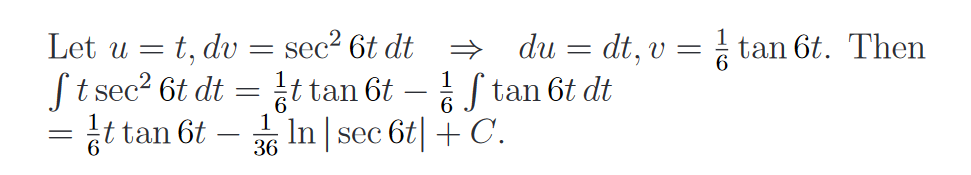
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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Question | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Total |
| Points | 12 | 10 | 10 | 10 | 12 | 8 | 16 | 10 | 10 | 98 |
| Score |  |  |  |  |  |  |  |  |  |  |

1. (12 points, 3 points each) Determine whether the statement is true or false. Circle the right answer.
2. Suppose is continuous on , and , is convergent. (True or False)
3. Midpoint Rule is always more accurate than the trapezoidal rule. (True or False)
4. Since diverges, and for all , must diverge. (True or False)
5. If is a positive function and fpr , show that . (True or False)



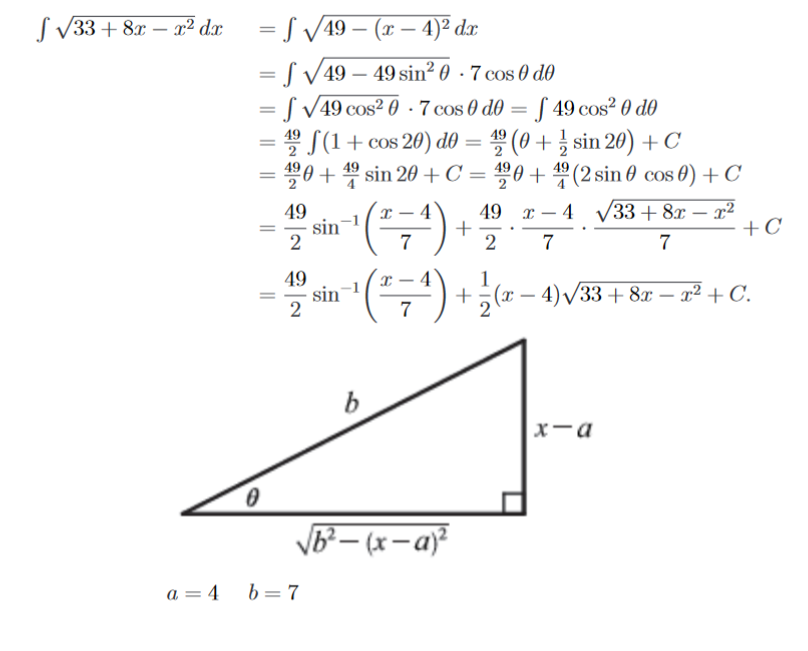
1. (10 points) Evaluate the following integral

Solution



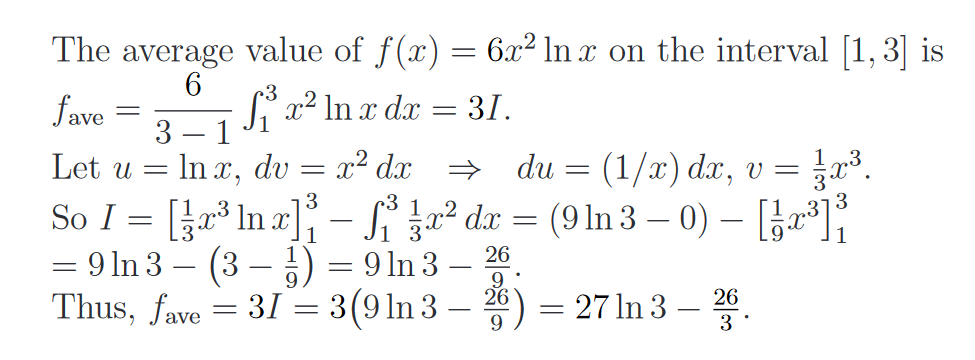
1. (10 points) Evaluate the following integral

Solution

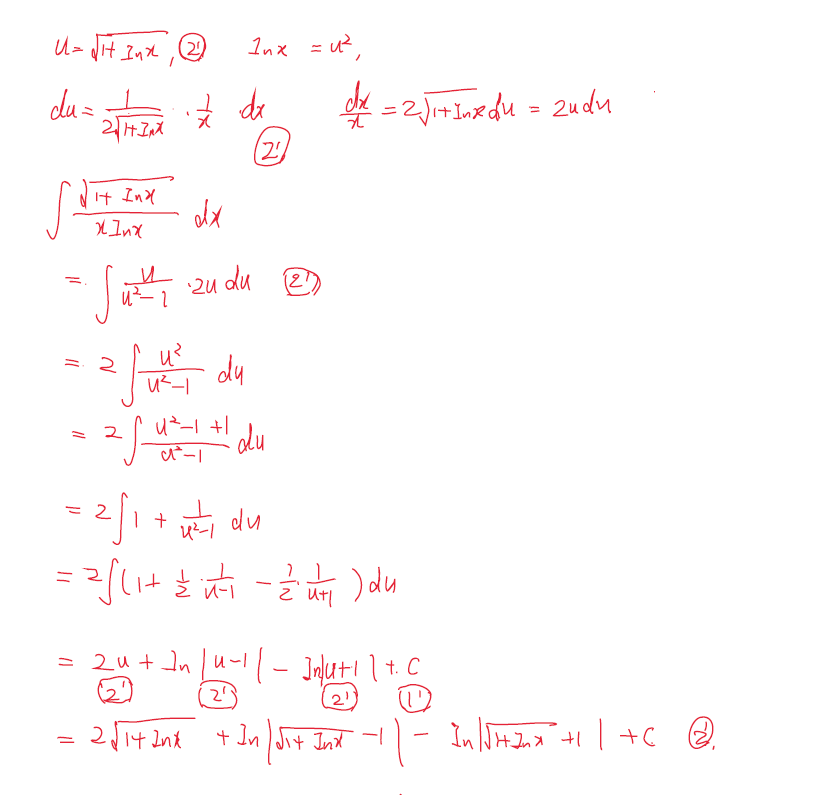


1. (10 points) Find the average value of on the interval [1,3].

Solution

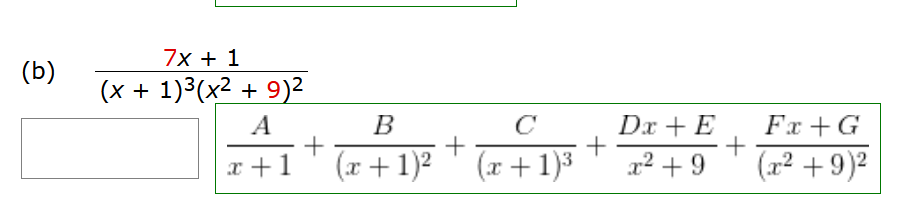


1. (12 points) Evaluate the following integral

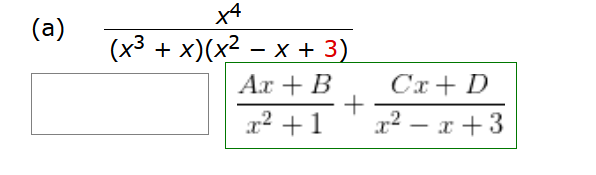


1. (8 points) Write out the form of the partial fraction decomposition of the function. Do not determine the values of the coefficients. (the fractions need to be the most simple forms)

Solution



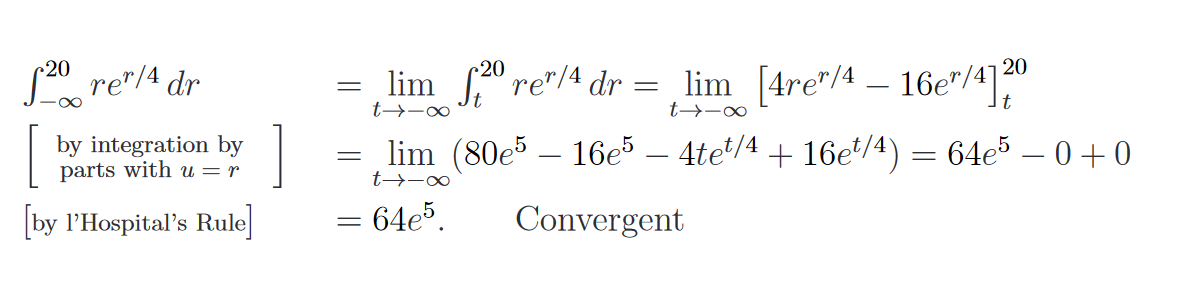
Solution



1. (16 points) Determine whether the integral is convergent or divergent.

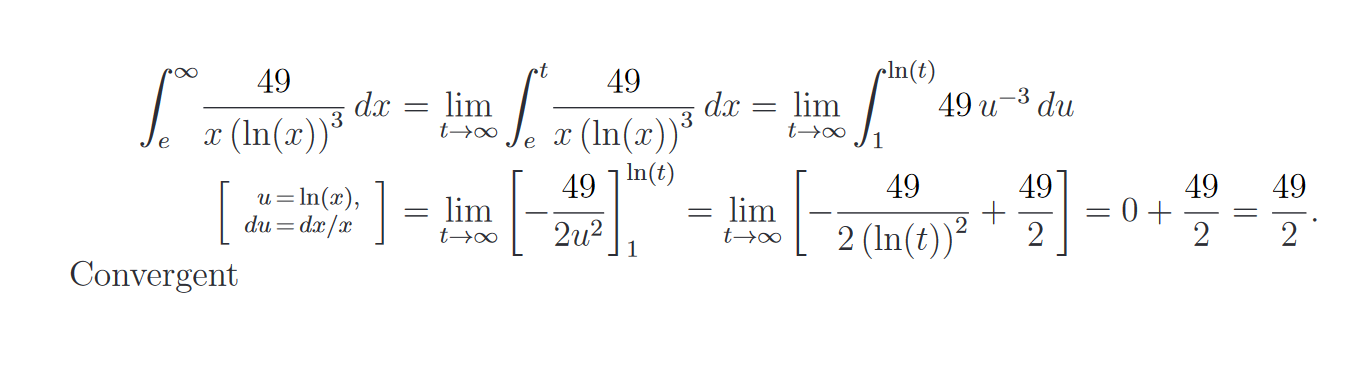
* Convergent
* Divergent

Solution



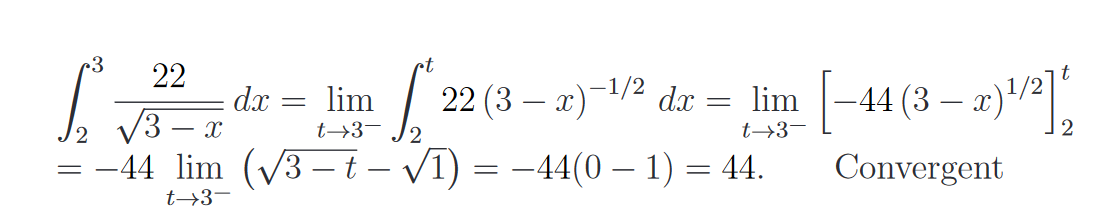
* Convergent
* Divergent

Solution



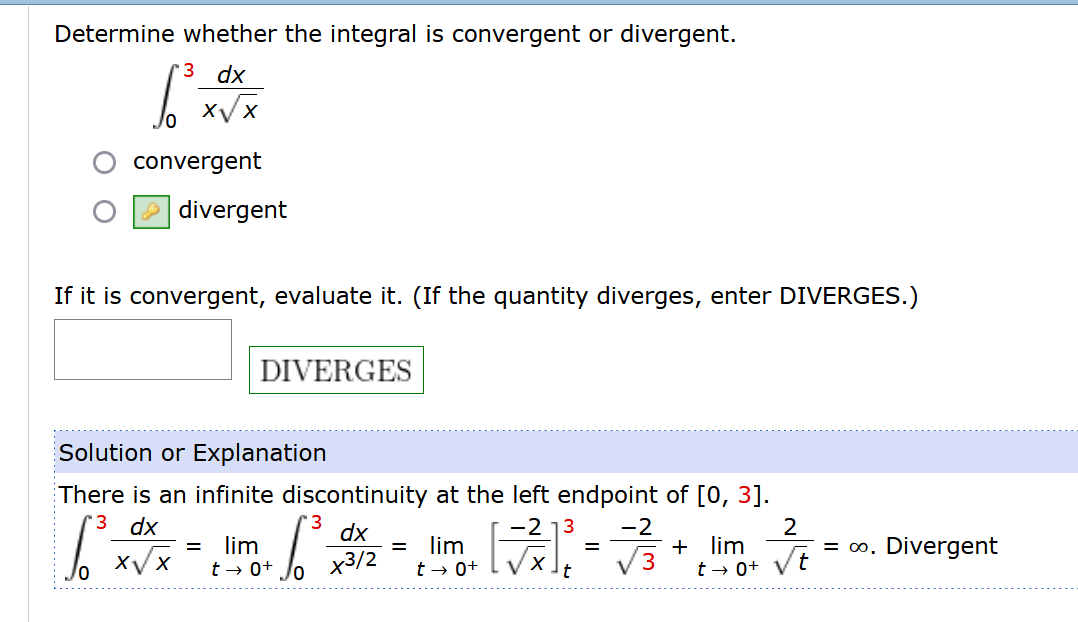
* Convergent
* Divergent

Solution



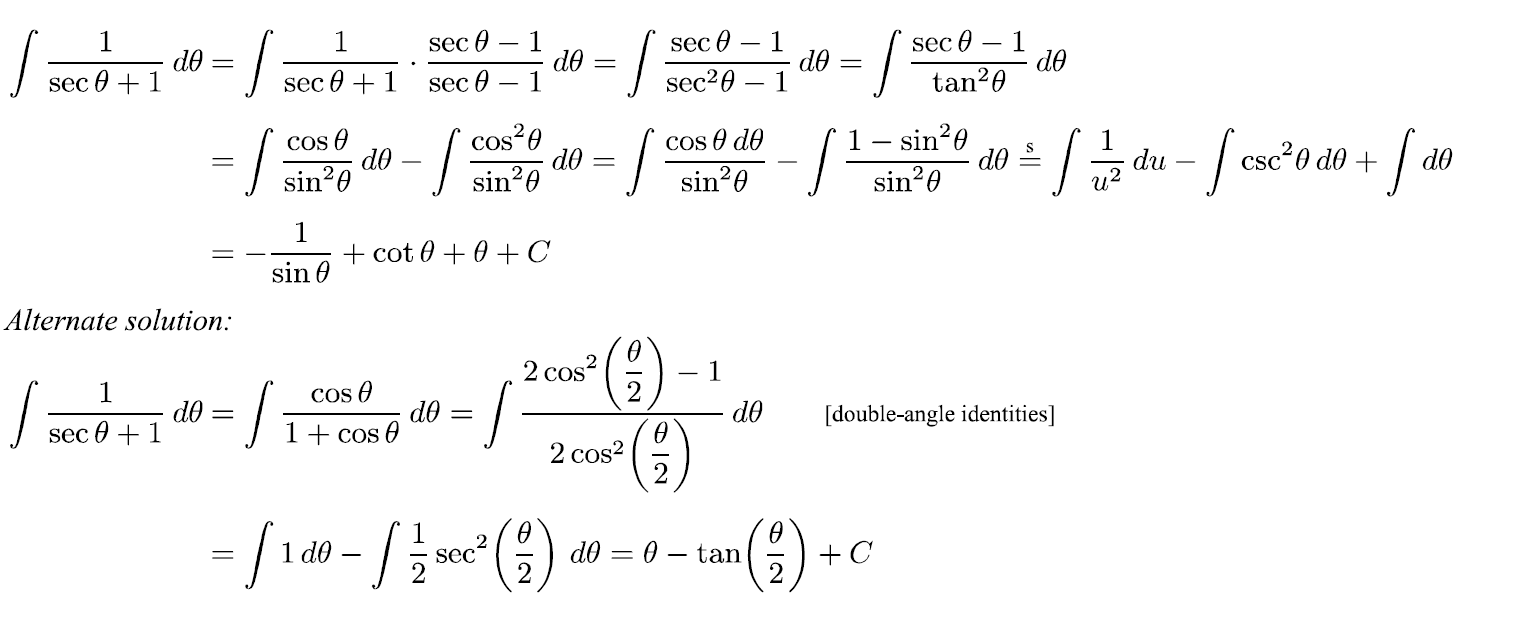
* Convergent
* Divergent

Solution



1. (10 points) Evaluate the integral

Solution



1. (10 points) A particle moves on a straight line with velocity function Find its position function if .

Solution

