

THE BASICS

- **Homework** is due by 11:59PM on the due date.
- Turn in your homework via Gradescope.
Gradescope is accessed via Canvas. (See menu on left.)
Technology help page: <https://uaf-math251.github.io/techHelp.html>
- All problems come from our online textbook:
<https://openstax.org/details/books/calculus-volume-1>
- Answers to odd problems are linked from the online text and can be found in the back of the paper textbook.
- Complete solutions to odd problems can be found in the student solutions manual (found at the textbook link).
- Complete solutions to all problems will be posted in our Canvas site after the homework is due.
- Homework will be graded on completion and effort.

HOW TO GET FULL CREDIT

- Since you have answers and complete solutions to most of the problems and you are graded based on completion and you have all the problems in advance, **you should get 100% on your homework.**
- Number all problems and all parts of a problem.
- Write the problems in order.
- Write legibly and space things so they are easy to find.
- Follow directions. **When you are asked for an explanation, make sure to give one!**
- Turn your homework in on time or in advance.

MAKE THE HOMEWORK INTO QUIZ/TEST PREP

- Attempt all problems in a particular section *before* looking at the answers.
- After working the problems, check your answers and re-attempt any that are incorrect.
- Do not look at the complete worked solutions until you have attempted the problem twice on your own.
- Attempt all problems at least two days before they are due so that you can ask questions if you don't understand.
- Star problems you did correctly on the first try. Circle problems where you got help (using solutions, videos, a tutor, etc). When preparing for a quiz or test, start by going over the circled problems and working a similar (but different) problem of that type in order to know you are ready!
- Get help when you have questions.

Section	Problems	Notes
§2.1 (8 problems)	7,8,9,13,14,15,22,23	
§2.2 (14 problems)	32,33,34*, 40, (46,47,48,49)**, (71,72,73,74,75)***, 77****	* Hint: It's a well known constant! ** These are all T/F. You are supposed to explain why something is false. ***These are SUPER short problems! Don't despair. ****There are MANY correct answers here. Your answer may look different from the back of the book and still be correct. Ask if you have questions.
§2.3 (12 problems)	91,97,98,99,102,103,105,109,111,113,119,125	
§2.4 (7 problems)	133,135,137,149,153* 154,157**	*You can use a calculator to help with computations but your explanation must appeal to the IVT. **There are many correct solutions.
§3.1 (9 problems)	9,15,21,23,25,39,45,47,51	
§3.2 (12 problems)	56,59,62,65,67,69,75,79,91,95,97,99	
§3.3 (1) (13 problems)	109,110,113,114,115,117,120,123,125,127,129,131,136	
§3.3(2) (5 problems)	141,142,144,146,147	
§3.4 (8 problems)	151,153,155,159,160,165,167*,168*	*For part (a), you can find a regression tool on the web (say Desmos), but it's OK if you just use the solutions for part (a).
§3.5 (13 problems)	175,177,180,181,182,187,189,191,195,197,199,201,211	
§3.6 (15 Problems)	217,219,223,225,227,229,233,235 237,239,243,247,249,251,253	
§3.7 (11 problems)	261,265,273,275,279,283,285,291 (A) $y = x^{2/3} - 6x^{-2/3} + \pi^{4/3}$ (B) $y = (x + \sin(5x))^{8/3}$ (C) $y = x \cos^{-1}(\frac{\pi x}{2})$	For problems A,B,C, find $\frac{dy}{dx}$.
§3.8 (7 problems)	303,305,307,313,317,321,323	
§3.9 (13 problems)	331,332,333,337,339,340,341,343,347 348,355,359,361	

Section	Problems	Notes
4.1 (8 problems)	5,7,9,11,12,19,31,35	
4.2 (10 problems)	51,55,57,59,65,67,73,77,81,84	
4.3 (10 problems)	91,93,95,103,105,109,111,119,121,126	
4.5 (10 problems)	203,207,215,217,227,231,235,237, 241,243	
4.6 (16 problems)	253,259,261,263,265,267,273,274,275, 277,285, (295,298,299,301,304)*	*You are encouraged to use the derivatives from the solutions instead of finding those derivatives yourself by hand.
4.7 (8 problems)	315,317,319,326,330,331,353,355	
4.8 (7 problems)	369,371,377,381,383,387,393	
4.10 (19 problems)	467,471,473,476,477,478,481,485,487, 489,490,493,495,497,498,499,505,511, 512	
5.1 (4 problems)	22,39,41,43	
5.2 (7 problems)	75,77,80,89,91,93,111*	*Hint: Use the graph.
5.3 (13 problems)	149,155,159,161,171,177,179,183,185, 187,189,191,199*	*Set up integrals that answer each part, then use a computational tool to actually evaluate the integral.
5.4 (11 problems)	207,209,211,213,219,223,227,247,249, 250,251	
5.5 (13 problems)	259,273,275,277,279,281,283,284,285, 292,293,297,305	
5.6 (14 problems)	321,323,324,325,327,329,331,333,335, 337,339,347,361 (A) Suppose the rate of growth of bacteria in a Petri dish is given by $p(t) = \frac{e^{0.2}}{5}$ where t is given in hours and $p(t)$ is given in hundreds of bacteria per hour. If a culture starts with 1000 bacteria, find a function $P(t)$ that gives the number of bacteria in the Petri dish at any time t . How many bacterial are in the dish after 10 hours.	
5.7 (10 problems)	391,393,395,397,399,401,411,413,423, 425	