

Name: _____

Score: _____ / 100

Student ID: _____

DO NOT OPEN THE EXAM UNTIL YOU ARE TOLD TO DO SO

	1	2	3	4	5	6	Total
✓							
Score							

INSTRUCTIONS FOR STUDENTS

- Questions are on both sides of the paper. This is an 5 question exam (One extra credit problem can be attempted for a total of 6 questions).
- Students have 50 minutes to complete the exam.
- **PLEASE SHOW ALL WORK.** Any unjustified claims will receive no credit. Clearly box your final answer.
- You **MUST** complete **5** problems for credit. In the above table in the row with the ✓, please mark with a ✓ which problems you want to be graded. If you wish to do a 6th problem for extra credit, please write *EC* in the ✓ row for the problem you wish to be counted for extra credit.
- No notes, textbooks, phones, calculators, etc. are allowed for the exam.
- Each of the 5 questions you choose to do will be graded out of 4 points. The score will then be totaled and multiplied by 5 to get a raw score out of 100 points. If you choose to do a 6th problem for extra credit, the most that will be awarded for that question will be 3 points. So, the highest possible score on this examination is 103 points out of 100.
- The back of the test can be used for scratch work.

GOOD LUCK!

1) Use graph transformations to sketch the graph of $f(x) = -(x + 6)^3 - 4$.

2) Use polynomial or synthetic division to divide the polynomials: $(-x^3 + 2x - 21) \div (x - 3)$

3) Identify the asymptotes of the function: $f(x) = \frac{2x+1}{x^2-2x-15}$

4) Find the difference quotient $\frac{f(x+h)-f(x)}{h}$ for the function $f(x) = x^2 - 5x + 3$, and reduce completely.

5) Write the inverse function, $f^{-1}(x)$, for $f(x) = x^2 + 9$, and check that your result is the inverse.

6) Solve the following equation for x : $\log(x^2 + 6x) = \log(7)$

THIS PAGE IS LEFT BLANK FOR ANY SCRATCH WORK

END OF TEST