NO ELECTRONICS 195 Midterm Exam 2 Sections 2.6-4.4

Answer each question neatly on the line provided.

Name: _____ ID: _____

1. (5 points) Evaluate $(g \circ f)(-2)$ when $f(x) = 2x - 3$ and $g(x) = 4 - 2x^2$.

1. _____

2. (5 points) Find the inverse of $f(x) = \frac{x^5 - 3}{2}$

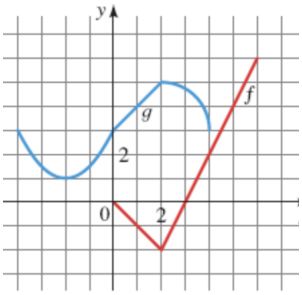
2. _____

3. (5 points) Find the range of $f(x) = 2x^2 - 12x + 13$

3. _____

4. (5 points) Sketch the graph $f(x) = 10 + |x + 10|$. Label all intercepts on your sketch.

5. (5 points) Sketch the graph of $f(x) = -\sqrt{x - 7}$. Label all intercepts on your sketch.

6. (5 points) Use the graph 

to evaluate $f(g(2))$.

7. (5 points) Sketch the graph of $f(x) = 3 - 3^x$. Label one point on your graph and label all asymptotes and intercepts on your sketch.

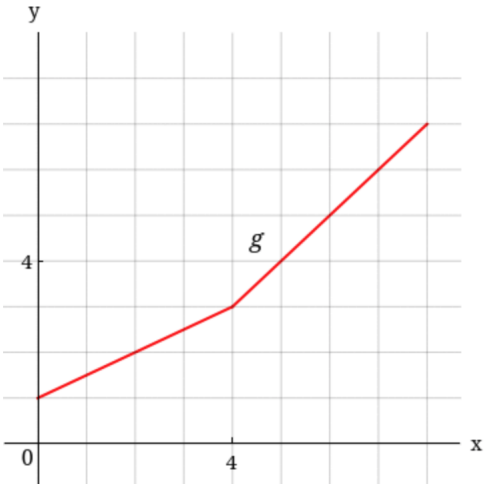
8. (5 points) Make a rough sketch the graph of $P(x) = x^4 - 9x^2$.

8. _____

9. (5 points) Find the function $f \circ g(x)$ when $f(x) = \frac{x}{x+10}$ and $g(x) = 5x^2 + 10$.

9. _____

10. (5 points) Sketch the graph $f(x) = -\log_3(x + 3)$. Label all asymptotes and intercepts on your graph.

11. (5 points) Use the graph 

to evaluate $g^{-1}(5))$.

11. _____

12. (5 points) Simplify $\log_3 100 - \log_3 18 - \log_3 50$.

12. _____

13. (5 points) Evaluate $\log_5(\frac{1}{\sqrt{125}})$ and simplify completely.

13. _____

14. (5 points) Find the inverse of $f(x) = \frac{1}{x-2}$.

14. _____

15. (5 points) Sketch the graph of $g(x) = 1 - x - x^2$. Label the vertex an intercepts on your sketch.

16. (5 points) Find x when $\log_9 x = 0.5$.

16. _____

17. (5 points) Find the domain of $g(t) = \log(9 - 3t)$

17. _____

18. (5 points) Evaluate $\log_2 8^{51}$.

18. _____

19. (5 points) Find the maximum of minimu of the function $f(x) = -x^2 + 10x$.

19. _____

20. (5 points) Make a rough sketch the graph $y = -(x-3)^2(x+1)^2$. Label all intercepts on your graph.