

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 $y = 3 - 4x - x^2$. Label the vertex on your graph for full credit.

5. (5 points) Sketch the graph of $f(x) = (\frac{1}{2})^x + 1$. Label one point on your graph and label all asymptotes.

6. (5 points) Evaluate $\log_5(\frac{1}{125})$.

6. _____

7. (5 points) Find x when $\ln(2x + 1) = 2$.

7. _____

8. (5 points) Sketch the graph $f(x) = -\log_3(x + 2)$.

9. (5 points) Solve $\log x = -3$ for x .

9. _____

10. (5 points) Simplify $\log_3 100 - \log_3 18 - \log_3 50$.

10. _____

11. (5 points) Evaluate $\log_5\left(\frac{1}{\sqrt{125}}\right)$ and simplify completely.

11. _____

12. (5 points) Sketch the graph of $g(x) = x^3 + 2x^2 - 8x$.

x	1	2	3	4	5	6
$f(x)$	4	6	2	5	0	1

13. (5 points) Use the table to find $f^{-1}(f^{-1}(1))$.

13. _____

14. (5 points) (True/False): $f(x) = \frac{1}{x} + 1$ is one-to-one.

14. _____

15. (5 points) Find the domain of $g(t) = \log(9 - 3t)$

15. _____

16. (5 points) Sketch the graph of $f(x) = 1 - \sqrt{x - 7}$.

17. (5 points) Use the table to find $f^{-1}(f^{-1}(1))$.

17. _____

18. (5 points) (True/False): $f(x) = \frac{1}{x} + 1$ is one-to-one.

18. _____

19. (5 points) A soft-drink vendor at a popular beach analyzes sales records and finds that if x cans of soda are sold in one day, then the profit (in dollars) from soda sales is given by $P(x) = -.001x^2 + 2x - 1100$. How many cans must be sold each day to maximize profits?

19. _____

20. (5 points) Sketch the graph of $f(x) = -\frac{1}{x^2}$.