Math 2312 – Pre-Calculus

Final Exam (*list to know*)

1. For the function *f* given by $f(x) =$, find the difference quotient $\frac{f(x+h)-f(x)}{h}$

2. Find the domain of: $f(x) =$

3. Let $f(x) =$ and $g(x) =$. Find $(f \circ g)(x)$ and the ***domain***.

4. Find the following of the given rational function: $f(x) =$ and ***sketch*** $f(x)$

Vertical Asymptote:

Horizontal Asymptote:
x-intercept:
y-intercept:
Hole:

5. Express the following in terms of sums and differences of logarithms

6. Solve the equation: log

7. Given $y =$, sketch $f(x)$ for ***one*** cycle (***label*** *the graph*)

Amplitude:
Period:
Phase Shift:
Vertical Translation:

8. Trig Application

9. $\sin(A+B)$

10. Find the solution of the equation that are in the interval $[0, 2\pi)$

11. Evaluate: $\arccos(trig)$

12. Find the specified term of the arithmetic sequence that has two given terms

13. Find the sum of the infinite geometric series if it exists:

14. Evaluate: $\sum_{n=1}^{\infty}$

15. Find the ***center***, ***vertices, minors*** and ***foci*** of the ellipse, and then sketch the graph of

16. Find the ***center***, ***vertices***, ***endpoints***, ***foci***, and the equations of the ***asymptotes*** of the hyperbola. Sketch its graph, showing the asymptotes.

17. Prove **2** out of 3