**Pre-Calculus Semester Final Review**

1. Find the distance between the points A (2,-9) and B (-8,2)

2. Find the coordinates of the midpoint of AB given A (-2,9) and B (-5,15)

3. Given , find the domain of *f(x)*.

4. Find the slope of the line through A (3,-1) and B (-4,10)

5. Determine the slope (*m*) and y-intercept (*b*) of the line 

6. Find the coordinates of the vertex of the parabola 

7. Given  and  find 

8. Solve the following equation by factoring: 

9. Solve the equation 

10. Solve the equation  by using the quadratic formula

11. Solve the inequality 

12. Solve the inequality 

13. If  and , find .

14. Find the inverse of 

15. Determine the *x*-coordinate of any local maximum or minimum points and label as such for 

16. Find the *x* value of the solution to the system: 

17. Is  a factor of ?

18. Find a polynomial with real coefficients satisfying the following conditions:

Degree 3 with -1, 5, and 2 as zeros

19. List all possible rational zeros of 

20. Add 

21. Multiply 

22. Solve the inequality 

23. Solve the system of equations: 

24. Find the vertical asymptote(s) of 

25. Find the horizontal asymptote(s) of 

26. Solve algebraically: 

27. Solve the equation algebraically: 

28. List the transformations that were used to obtain  from the graph of 

29. How much money would you have at the end of 9 years if you invested $10,000 at 8% compounded continuously?

30. Find the range of 

31. Use the properties of logs to write the expression as a sum: 

32. Solve  for *x*.

33. Approximate 