Alg II Name

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Pd\_\_

Final Exam Review

**Complete to Replace Lowest Test Grade with Your Final Exam Grade**





 15. Graph the following functions A. $y=\frac{x-4}{(x-2)(x+5)}$ B. $y\leq \frac{x}{(x-2)}$ C. $y=\frac{x-4}{x^{2}-6+8}$ D. $y>\frac{2x}{(x-5)}$

 16. Solve the following rational inequalities

 A. $\frac{x-4}{(x-2)(x+5)}=0$ B. $\frac{x-1}{x^{2}+2x-3}\leq 0$ C. $\frac{x-1}{x+6}>0$

 17. Create a the box-and-whisker plot of the following data: 3, 5, 7, 2, 5, 3, 8, 7, 3, 4, 5, 2, 4, 5, 3, 7

 18. Use the data set below to answer A, B, and C.

 Number of hours students spend studying each night: 1, 0, 3, 2, 5, 2, 4, 3, 1, 0, 7, 8, 3, 5, 2, 1

 A. What is the mean and standard deviation?

 B. Plot the mean and standard deviation on a normal curve (bell curve).



 C. 68% of the data falls between \_\_\_ standard deviations and is \_\_\_\_\_\_ to \_\_\_\_\_\_\_

 95% of the data falls between \_\_\_ standard deviations and is \_\_\_\_\_\_ to \_\_\_\_\_\_\_

 99.7% of the data falls between \_\_\_ standard deviations and is \_\_\_\_\_to \_\_\_\_\_\_\_\_

19. Solve: $\sqrt{2x-4}\geq 4$ $\sqrt{2x-5}= \sqrt{x+8}$

20. Graph: $y < \sqrt{x+3}-2$ $y\geq \sqrt{x-5}+7$

21. Solve: $x^{2}+7x+12 \leq 0$ $2x^{2}-5x-12>0$

22. Graph: $y > x^{2}-6x+8$ $y\leq x^{2}+2x+1$

23. Solve the system: $-2y^{2}-3x-13y-3=0$ $-2x^{2}-x+y-5=0$

$ x+3y+1=0 $ $ x-y= -1$

24. What is the, , maximum, minimum, domain, and range of each graph below.

 a. b. c.

**25**. Simplify the following functions.

 a.  b.  c.  d. 

**26**. Describe the transformations of the function from the parent graph of 

 a.  b.  c.  d. 

**27**. Describe the end behavior of the following functions

 a. f(x) = 4(x + 3)(x – 5) b. f(x) = x2 + 7x + 12 c. f(x) = 3(x – 5)2  + 7

**28.** Find the exact roots of the polynomial.

a.  b.  c.  d. 

e.  f.  g. 

**29.** Write the polynomial equation of least degree for the roots given.

 a. 1,0,-5 b. -2,  c. double root at 8, , 0

**30.** Divide.

 a.  b. 

**31.** Find the remainder for each division. Is the divisor a factor of the polynomial?

 a.  b. 

 R Factor? R Factor?

**32.** Find all possible rational zeros of the function. Then determine all the zeros.

 a.  b. 

 Possible zeros: Possible zeros:

 Zeros: Zeros:

**33**. Graph the following functions and find the domain, range, and find the maximum or minimum.

 a.  b.  c. 

**34.** Write an equation to the following graph. (Hint: use the x-intercepts to write the equation)



 What are the x-intercepts? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Write your factors of the polynomial by using the x-intercepts. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 “FOIL” or Distribute your factors above \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**35.** Find the zeros, end behavior, maximum(s), and minimum(s) for each graph below.

 a. b. c.





**36.** Find the zeros

 a.  b.  c. 

**37.** Graph the following functions and find the vertical asymptote(s), horizontal asymptote(s), and holes.

 a.  b. 

**38.** Simplify

$$\frac{3x+12}{3x}∙\frac{x+1}{x^{2}}$$

$$\frac{x^{2}+5x-14}{x-1}÷\frac{x-2}{5}$$

$$\frac{x+5}{3x}÷\frac{x-4}{x}$$

**39.** Solve for the variable. Check your solutions and restrictions.

 a. $\frac{2x}{3}+\frac{4x}{9}=\frac{1}{5}$ b. $\frac{x+3}{x+2}+\frac{4x}{x-5}=\frac{7}{x+2}$ c. $\frac{5}{x-2}+\frac{4}{3x}=\frac{1}{3x}$