Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Quarter 2

Pre-Calculus Test 2 - Review

Show all work on a separate sheet of paper. Make sure to study your notes and homework as well.

1. Divide the following and express the answer as a quotient plus remainder:
2. 
3. 
4. $(3x^{3}+5x^{5}+1)÷(x+2)$
5. 
6. 
7. 
8. 
9. Show that (*x* – 2) is a factor of P(*x*) = , and find the other two factors.
10. What is the remainder when $3x^{107}+14x^{35}-16x$ is divided by $(x-1)$?
11. What is the remainder when $14x^{10}-2x^{3}-17$ is divided by $(x+2)$?
12. Determine if $(x+3)$ is a factor of $f\left(x\right)=x^{3}+x^{2}-5x+3$
13. Determine if $(x+1)$ is a factor of $f\left(x\right)=x^{3}-13x^{2}+23x-11$
14. List all of the possible rational roots for each of the following polynomials:
15. $f\left(x\right)=3x^{2}+2x-1$
16. $f\left(x\right)=x^{6}-64$
17. $f\left(x\right)=-2x^{2}+5x+3x^{3}-8$
18. $f\left(x\right)=50x-25+4x^{5}+30x^{3}+4x^{5}$
19. If is a factor of *f*(x) then what is one of the zeros?
20. If is a factor of *f*(x) than what is one of the roots?
21. If than what are the roots?
22. If *f*(8)=0, what is one of the factors of *f*(x)?
23. If , what is one of the factors of *f*(x)?
24. Determine algebraically whether the following functions are even, odd, or neither

 a)  b)

 c)  d)

1. Write an equation for the indicated transformation given the function
	1. ; shift to the left 2, vertical stretch by a factor of 3, shift down 4 units
	2. 
2. Describe each transformation in terms of the original function then graph each function. State the domain, range, and any x- or y-intercepts.
	1. Original 



* 1. Original 





1. Use the given zero(s) to find all of the zeros for each of the following:
	1. 
	2. 
2. Use the given root(s) to find the complete factorization for each of the following:
	1. 
	2. 
3. Find the complete factorization and the complete solution set for each of the following:
	1. 
	2. 
	3. 
	4. 
4. Sketch the graphs for 18 a, b, and d.