Name_____
Due Date_____
Block_____

Algebra 2/Trig Review #6

Complete on a separate piece of paper.

List 3 sets to which each number belongs:

1. $\frac{1}{2}$	2. 2π	3. $3^{\frac{1}{3}}$	4. $\sqrt[4]{16}$
5. 0.4457	6. $\log_4 8$	7. One half of one fourth	8. 8

Name the field axiom being described:

9. In an addition problem, you can move parentheses.
10. Any number times one is itself.
11. $\forall a \in \mathbb{R}, a+(0)=a$
12. $(x+7)(x+3)=(x+3)(x+7)$
13. $(2+3)+5=(3+2)+5$

Explain:

14. Explain why dividing by zero is undefined.

Simplify:

15. $4-3(x+2(x-3))$
16. $4 \bullet 3 \div 6 \bullet 2 \div 2 \bullet 6$

Find the first 12 terms of each sequence:

17. $a_n = a_{n-1} \bullet \frac{2}{3}$, for $n \geq 2$, $a_1 = 4$
18. $a_n = 2a_{n-2} - 2a_{n-1}$, for $n \geq 3$, $a_1 = 1, a_2 = 2$

Find the 200^{th} term of each sequence:

19. $1,5,9,13,...$
20. $3,3,3,3,....$

Write a recursive formula to describe the sequence:

21. $2,1,3,6,10,19,...$

Graph using the slope and y-intercept:

22. $-2x+6y=12$

23. Determine the equation of the line that goes through $(-1,5)$ and is perpendicular to the line whose equation is: $4x+2y=88$

Write in standard form:

24. $y-1=\frac{1}{2}(x-8)$

25. Solve the following system using substitution. Then solve the system using elimination. Finally, verify your solution by graphing:

$3x-3y=6$

$5x-7y=-6$

26. Graph the following system:

$-3\le x<5$

$-1<y\le 5$

27. Let $y=-2x^2-12x-16$. Write in vertex form, find the roots and y-intercept of the function, then graph the function.

Simplify. Write your answer as a rational expression with no negative exponents.

28. $\left(\sqrt[4]{16x^4y^8z}\right)^{-2}$

Use logarithms to solve:

29. $2\cdot 5^{2x}-3=87$

Use the laws of logarithms to simplify:

30. $\log_4 16^{199}-\log_4 16^{40}+6\cdot\log_4 2$