Riddle Name: _____

Algebra 2

Exam Review

1. Solve. $5(2x - 6) = 7x - 3$

2. Solve. $|x + 3| + 10 = 2$

3. Solve. $0.38 > \frac{2x - 7}{5}$

4. Solve. $9 \leq 7 - x \leq -1$

5. Solve. $|2x - 3| \leq 7$

6. Find the slope of the line that passes through (2,6) and (-7,8).

7. What is the slope of the line y = -2?

8. What is the slope of a line that is parallel to the graph of 2x + 3y = 5?

9. Write an equation in slope-intercept form for the line that has a slope of -4 and passes through (1,2).

10. Solve: $5x + 2y = 1$
$y = 1 - 3x$

11. Solve: $3x + 4y = 12$
$2x - 3y = -9$

12. Solve by graphing: $x - y = 5$
$x + 2y = 2$

13. Graph the system of inequalities: $2x - y \geq 2$
$x + 3y \leq 6$

14. Simplify: $(5 + 2i)(1 + 3i)$.

15. Simplify: $(4 - 12i) - (-8 + 4i)$.

16. Simplify: $\frac{4 - 2i}{7 + 3i}$

17. Solve: $x^2 - 3x = 18$.

18. Solve: $3x^2 = 20 - 7x$

19. Solve: $3x^2 = 5x - 1$.

20. Use the value of the discriminant to tell the number and type of roots: $2x^2 - 7x + 9 = 0$.

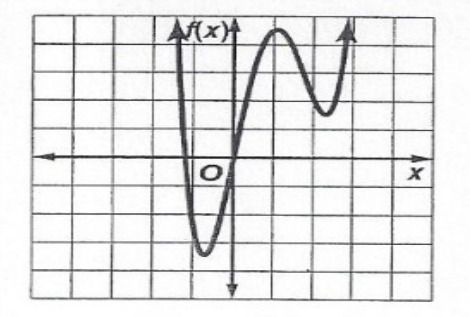
21. Use the value of the discriminant to tell the number and type of roots: $x^2 + 20 = 12x - 16$

22. Simplify: $(3a^3 - 7a^2 + a) - (6a^3 - 4a^2 - 8)$.

23. Simplify: $(7m - 8)^2$.

24. Divide using synthetic division : $(2x^3 - 5x + 40) \div (x + 3)$?

For questions 25 thru 28, use the graph below.



25. What is the degree of the function?

26. How many real roots?

27. How many imaginary roots?

28. Is the function cubic, quartic, or quantic?

29. List all of the ***possible*** rational zeros of $f(x) = 3x^3 - 2x^2 + 7x + 6$. (p/q)

30. Find **ALL** of the rational zeros of $f(x) = 4x^3 - 3x^2 - 22x - 15$.