

Name _____

Due Date _____

Block _____

Algebra 2/Trig Review #8

Complete on a separate piece of paper.

List 2 sets to which each number belongs:

1. -5.4	2. $\frac{3}{5}\pi$	3. $5i^2$	4. $\sqrt[4]{16}$
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Name the field axiom being described:

5. $(3+5)+8=(5+3)+8$

Explain:

6. Explain why: $\forall a \in \mathbb{R}, s.t. a \neq 0, a^0 = 1$

Simplify:

7. $3 - (x^2 - 2(x+2)^2)$

Find the first 12 terms of the sequence:

8. $a_n = a_{n-1} + a_{n-2}$, for $n \geq 2$, $a_1 = 4$, $a_2 = 5$

Find the 10th term of each sequence:

9. $\frac{1}{16}, \frac{1}{8}, \frac{1}{4}, \dots$

Graph using the slope and y-intercept:

10. $-2x + 5y = 10$

11. Determine the equation of the line that goes through $(-1, -4)$ and is parallel to the

line whose equation is: $y - 999 = \frac{1}{4}(x + 2)$

Write in standard form:

12. $y - 8 = \frac{-3}{2}(x - 4)$

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

$$-7x + y = -1$$

$$5x - y = -3$$

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14. Graph the following system:

$$y - 8 > -2(x - 3)$$

$$-4y \leq 8$$

15. Let $y = 3x^2 - 24x + 45$. 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.

$$16. \frac{5x^2}{4y} \cdot \left(\frac{8x^5}{3y^2}\right)^{-3} \cdot \sqrt[4]{16x^4}$$

Use logarithms to solve:

$$17. 2 \cdot 3^x - 8 = 25$$

Use the laws of logarithms to simplify:

$$18. \log_9 3^{240} - \log_9 9^{40} + \log_3 81$$

Factor completely:

$$19. 2x^3 - 3x^2 - 14x + 15$$

20. Let $f(x) = x - 1$ and $g(x) = 2x^2 + 1$. Find $g\left(f\left(f\left(g\left(f\left(g\left(5\right)\right)\right)\right)\right)\right)\right)$.

Solve:

$$21. \frac{x}{8} + \frac{9}{x} = \frac{-17}{8}$$

Simplify:

22. i^{352}	23. $\sqrt{-48}$	24. $(5 + 3i)(5 - 3i)$
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Solve each equation in the domain of complex numbers.

$$25. x^2 + 2x + 9 = 0$$

$$26. x^2 + 5x + 6 = 0$$

$$27. 2x^3 - 5x^2 - x + 6 = 0$$

$$28. x^3 + x^2 + 11x - 13 = 0$$