GEOMETRY HONORS SUMMER PACKET
MS. OLIFER

ALL WORK MUST BE SHOWN TO RECEIVE FULL CREDIT.

Write an equation in slope-intercept form of the line with the given characteristics.

1. through: $(-3, -4)$, perpendicular to $y = -\frac{3}{4}x + 5$

_____

Write an equation in point-slope form of the line with the given characteristics.

2. through: $(-1, -3)$ and $(2, 5)$

_____

3. through: $(4, 4)$, parallel to $y = -\frac{1}{6}x + 2$

_____

Identify the intercept(s). If the equation is linear, find the slope of the line.

4. $2x + 5y = 10$

_____

5. $y = 2|x - 1| - 4$

_____

Solve the system of linear equations using any method.

6. $-x = -6y + 19$
$4 = -4x - 12y$

_____

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Evaluate the expression. Round to the nearest hundredth, if necessary.

7. $\sqrt[6]{100}$

8. $(-27)^{4/3}$

_____ _____

Simplify the expression completely. Write your answer using only positive exponents.

9. $\sqrt[3]{-250x^4y^8}$

10. $\dfrac{2w^{-3}z^{-2}}{4w^{-4}z^2}$

_____ _____

11. $-\left(-\dfrac{4a^2}{3ab^{-1}}\right)^{-3}$

12. $\sqrt{\dfrac{50y^6}{100x^4}}$

_____ _____

Simplify the expression completely and rationalize the denominator.

13. $-\dfrac{7}{2\sqrt{3}}$

14. $\dfrac{3}{\sqrt{x}+x}$

15. $2\sqrt{20x^2}-5x\sqrt{45}$

_____ _____ _____

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Solve the equation. Check your solution.

16. $16^{-r-1} = \frac{1}{4}$

17. $64^{-2x+3} = 1$

Find the sum or difference. Write your answer in the standard form.

18. $(3x^2 + 6x) + (4x^2 - 8x)$

19. $(3 + 7x^3 + x^4) - (8 - x + x^4)$

Find the product.

20. $(2x + 1)(2x - 1)$

21. $(2a + 7)(7a - 4)$

Factor the polynomial completely.

22. $b^3 - 3b^2 + b - 3$

23. $-n^2 + n + 20$

24. $2x^2 - 17x + 21$

Solve the equation.

25. $-2x(3x + 1)(x - 8)(x + 2) = 0$

26. $4k^2 + 3 = -13k$

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Solve the equation. Check your solutions.

27. $8\sqrt{n-2} = -16$

28. $\sqrt{2v} = \sqrt{3v-1}$

_____ _____

29. While vacationing, you decided to go bungee jumping off a cliff into the river. Your height as a function of time is modeled by the function $h(t) = -16t^2 + 16t + 370$, where t is the time in seconds and h is the height in feet.

a. How long did it take to reach your maximum height?

_____

b. What is the highest point you reached?

_____

c. When did you hit the water? Round your answer to the nearest hundredth.

_____

30. You have $8.80 in pennies and nickels. You have twice as many nickels as pennies. Write a system of linear equations that models the situation. How many of each type of coin do you have?

_____

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31. A rectangular garden has a length that is five less than twice the width. The garden perimeter is 50 meters. What are the dimensions of the garden?

_____

32. Your soccer team wants to buy T-shirts. You call two different companies about prices. Each company charges a price per T-shirt and a set-up fee to create the team logo.

a. The total cost is the same for each company. How many T-shirts is the team buying?

b. A few players decide not to get T-shirts. Which company has a lower cost?

	Logo set-up fee	**Price per T-Shirt**
Company A	$50	$15
Company B	$95	$12

a. _____

b. _____