

PreCalculus H

Summer Packet

Name _____

Summer Packet is due on **September 6, 2019.**

1. Students should complete all work in a notebook. This notebook should be the same notebook that they will use for class starting in September. (3 ring binder is recommended)
2. All work must be completed in **pencil**.
3. Show all of your work.
4. These skills are prerequisite skills that should be mastered before entering Precalculus Honors.
5. **This assignment**, along with a **Test** on this packet, will count towards your **first marking period** grade. This packet is worth 100 points on your first 200 point test.

If you have any questions, email
Mrs. Sousa jsousa@rpsd.org

Exponent and Radicals

Simplify.

1. $(-5z)^3$

2. $5x^4(x^2)$

3. $(4x^3)^0$

4. $\frac{3x^5}{x^3}$

5. $(-z)^3(3z^4)$

6. $\frac{25y^8}{10y^4}$

7. $\frac{7x^2}{x^3}$

8. $(-2x^2)^3(4x^3)^{-1}$

9. $\sqrt{9}$

10. $\sqrt[3]{\frac{27}{8}}$

11. $36^{\frac{3}{2}}$

12. $32^{-\frac{3}{5}}$

13. $100^{-\frac{3}{2}}$

14. $\left(\frac{16}{81}\right)^{-\frac{3}{4}}$

Polynomials and Factoring

15. $(6x+5)-(8x+15)$

16. $(2x^2+1)-(x^2-2x+1)$

17. $3x(x^2-2x+1)$

18. $y^2(4y^2+2y-3)$

19. $(x+3)(x+4)$

20. $(x-5)(x+10)$

21. $(3x-5)(2x+1)$

22. $(7x-2)(4x+3)$

23. $(x+10)(x-10)$

24. $(2x+3y)(2x-3y)$

25. $(2x+3)^2$

26. $(4x+5)^2$

Factor.

27. $x^2 - 81$

28. $9x^2 - 100y^2$

29. $x^2 + x - 2$

30. $x^2 + 5x + 6$

31. $x^2 - 30x + 200$

32. $x^2 - 13x + 42$

33. $3x^2 - 5x + 2$

34. $5x^2 + 26x + 5$

35. $25y^2 - 10y + 1$

36. $9x^2 - 12x + 4$

37. $x^3 - x^2 + 2x - 2$

38. $x^2 + 5x^2 - 5x - 25$

Factor Completely. Check for GCF.

39. $6x^2 - 54$

40. $12x^2 - 48$

41. $2y^3 - 7y^2 - 15y$

42. $-2x^3 + 2x^2 + 4x$

Solving Equations

43. $7 - 2x = 25$

44. $8x - 5 = 3x + 20$

45. $2(x + 5) - 7 = 3(x - 2)$

46. $\frac{5x}{4} + \frac{1}{2} = x - \frac{1}{2}$

47. $\frac{100 - 4x}{3} = \frac{5x + 6}{4} + 6$

48. $8(x + 2) - 3(2x + 1) = 2(x + 5)$

Solve by factoring.

49. $6x^2 + 3x = 0$

50. $x^2 - 2x - 8 = 0$

51. $x^2 + 10x + 25 = 0$

52. $x^2 + 4x = 12$

53. $2x^2 = 19x + 33$

54. $4x^2 + 12x + 9 = 0$

Use the Quadratic Formula to solve the equation.

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

55. $2x^2 + x - 1 = 0$

56. $x^2 - 10x + 22 = 0$

57. $x^2 + 14x + 44 = 0$

58. $x^2 + 8x - 4 = 0$

59. $16x^2 + 22 = 40x$

60. $3x + x^2 - 1 = 0$

Solving Inequalities

61. $-2x > -3$

62. $6x - 4 \leq 2 + 8x$

$$63. \quad 4(x+1) < 2x+3$$

$$64. \quad -4 < \frac{2x-3}{3} < 4$$

$$65. \quad -1 \leq 2 - \frac{x}{3} \leq 1$$

$$66. \quad 2x+3 < 5 \text{ or } -3x+8 < -4$$

$$67. \quad |x-5| \leq 3$$

$$68. \quad |x-7| > 5$$

$$69. \quad |3-4x| \geq 9$$

$$70. \quad \left| \frac{x-3}{2} \right| < 4$$