

Hello Future **Algebra 2 Honors** Students,

Algebra 2 honors is a challenging and quickly paced course that will **require** you to have mastered specific Algebra 1 skills. Expectations will be high. The attached worksheet contains problems displaying the skills necessary to be successful in Algebra 2 Honors. Please hold yourself accountable for the mastery of these skills.

Your task this summer is to neatly complete all the assigned questions on a separate sheet of paper with **all of your work shown**. No credit will be given to assignments that are turned in containing only answers. Your work will be collected and reviewed within the first week of class, so please have the entire assignment completed before the first day of school. The answer key has been provided so that you can check your comprehension of each skill. You also will find a sheet containing links to videos you can use as a resource if you do not understand any of the questions/concepts.

You will be assessed on this Algebra 1 material within the first two weeks of your Algebra 2 Honors class. Students will be expected to execute similar type problems without answers provided.

The flow of next year will be dependent on your ability to use algebra 1 skills, critically think, and walk into class with confidence knowing you have put in quality time over the summer. If you find yourself struggling with the summer work, please consider placement into Algebra 2 CP where more time will be given for review and less depth of material will be covered.

Looking forward to seeing you next school year.

Sincerely,

SOA Algebra 2 Honors Teachers

Name _____

Summer Work – Algebra 2 Honors

Directions- Please complete the following questions on a separate sheet of paper. Be sure to show all of your work. Reference the video tutorials, as needed.

Solve the equation for x.

1. $\frac{\sqrt{x+4}}{2} = \frac{3}{\sqrt{x+4}}$

2. $\frac{1}{4}x + \frac{1}{2} = \frac{3}{4}x + \frac{1}{3}$

3. $7x - 2yx = z$

4. $|2x+7| \leq 14$ and graph the solution.

5. $|3x+2| > 5$

6. $x^2 + 5x + 4 = 0$

7. $7xy + 4 = z$

8. $3(x+5) - (5x-2) = 5(2x-7)$

9. $8 - 3x \leq 13$

Solve the system.

10. $4x + 3y = 11$
 $2x - 2y = 2$

11. $y = -5x + 3$
 $2x - y = 11$

12. $3x + 2y = 9$
 $4x - 6y = -14$

Evaluate for $f(x) = -2x^2 - 4x$.

13. $f(-2)$

14. $f(x-1)$

Simplify.

15. $\sqrt{\frac{48}{5}}$

16. $\frac{16a^{-2}bc^{-3}}{(4ab^3)^{-2}}$

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

18. $(x^2 - 5x + 4)(2x - 9)$

19. $\sqrt{54}$

20. $\frac{4 - 4^2 \div 8 \cdot 3 + 6}{3 - (1+1)^2}$

Factor.

21. $2x^2 - 11x - 21$

22. $x^3 + 6x^2 + 5x$

23. $6x^2 - x - 15$

Solve for the distances.

24. Find the distance between (5,3) and (6,9).

25. Find the leg of a right triangle with hypotenuse of 17 cm and a leg of 8 cm.

Find the equation of the line using the given information.

26. Find equation in point-slope form of line with slope=-4 and through (2,-6).

27. Perpendicular to $6x - 2y = 8$ through the point (-9,-2)

28. Parallel to $y = -\frac{2}{3}x + 7$ through the point (-3, 4)

29. Through points (3, 1) and (2,4)

Graph the following.

30. $6x + 3y = 9$

31. $3x - y = 2$

Find the x and y intercepts.

32. $3x - 5y = 15$

33. $y = x^2 + 7x + 6$

Solve the following problems.

34. A parking attendant charges a different rate for cars than trucks. It costs \$10.75 to park 3 cars and 2 trucks. It costs \$12.25 to park 7 cars and 1 truck. How much does it cost to park a single car? A single truck?
35. Hair grows on your head faster than any other place on your body. Sue was interested in figuring out how fast her hair grows so she measured the growth. After 15 days her hair grew 3 millimeters. After 50 days, it grew 10 millimeters. If hair growth can be represented by a linear relationship, then
- Write a function for the growth $G(x)$ as a function of x =number of days.
 - How long did it take Sue's hair to grow 17 millimeters?

Summer Work Answer Key – Algebra 2 Honors

Directions – Use this document to check your answers. If you have an incorrect answer, go back and attempt to find your mistake. If you cannot find your error, watch a tutorial to assist with understanding the concept.

1) $x = 2$

2) $x = \frac{1}{3}$

3) $x = \frac{z}{7-2y}$

4) $x \leq \frac{7}{2}, x \geq \frac{-21}{2}$

5) $x > 1$ or $x < \frac{-7}{3}$

6) $x = -4, x = -1$

7) $x = \frac{z-4}{7y}$

8) $x = \frac{-13}{3}$

9) $x \geq \frac{-5}{3}$

10) 2,1

11) 2,-7

12) 1,3

13) $f - 2 = 0$

14) $f x - 1 = -2x^2 + 2$

15) $\frac{4\sqrt{15}}{5}$

16) $\frac{256b^7}{c^3}$

17) $4x^2 - 12x + 9$

18) $2x^3 - 19x^2 + 53x - 36$

19) $3\sqrt{6}$

20) -4

21) $2x+3$ $x-7$

22) x $x+5$ $x+1$

23) $3x-5$ $2x+3$

24) $\sqrt{37}$

25) $b = 15$

26) $y+6 = -4$ $x-2$

27) $y = \frac{-1}{3}x - 5$

28) $y = \frac{-2}{3}x + 2$

29) $y = -3x + 10$

#30 and 31 will be given in class

32) $x_{\text{int}} = 5$
 $y_{\text{int}} = -3$

33) $x = -6, x = -1$

34) $\text{car} = \$1.25$
 $\text{truck} = \$3.50$

35) a) $G x = \frac{1}{5}x + 0$
b) 85 days