Welcome to Algebra II Honors!

This packet is designed to refresh your Algebra I skills. It includes anything that was taught in Algebra I Honors and will be used throughout Algebra II Honors.

Assignment Requirements: You MUST show **all** work in order to receive credit! All work must be done on a **separate sheet of paper** in a neat and organized manner. No work, no credit! Please fill in the correct multiple-choice answers on the provided bubble sheet. The majority of the questions should be completed without the use of a calculator.

Due Date: This packet must be **completed and turned in** by the first day of school, **Wed, August 29, 2018**.

Grading: It will count as a **quiz grade** for term 1. In addition, there will be a **test during the first or second week** of school that assesses the same information that is found in this packet.

Pacing: Due to the fact that there is an assessment the first week of school, you should pace yourself to work on this at least a few hours a week leading up to the start of school in August. If you complete the whole packet at the beginning of July, it will not be very helpful with the test at the start of school. That being said, do not try to complete the entire packet on the night before school starts!

Help With this Packet: If you need help, please refer to the Google Classroom that has been created for Algebra II Honors Summer Work Help. The class code is **b3grnz**. There you will find videos that help to highlight the key topics that are in this packet. Please feel free to also Google the topics for other videos that we have not included. Also, teachers Mr. Meneses and Ms. Neubauer will be available in the B. M. C. Durfee High School Library from 12 pm—2 pm on Tuesdays each week starting on July 10th.

About Honors Algebra II: Algebra II Honors is fast-paced rigorous course. We expect that you meet the expectations that you will come to class prepared, with homework done, and ready to learn each day. Homework is an integral part of an honors course, and it is required.

It is **required** that you purchase a **binder and loose-leaf paper** for this course. It is **highly recommended** that you also purchase a graphing calculator.

Name		Date	
Class		Quiz	

Student ZipGrade ID

Key Version
A
B
C
D
E

						A	B	C	D	E		A	B	C	D	E		A	B	C	D	E
1	○	○	○	○	○	11	○	○	○	○	○	31	○	○	○	○	○					
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9	○	○	○	○	○	29	○	○	○	○	○	49	○	○	○	○	○		
10	○	○	○	○	○	30	○	○	○	○	○	50	○	○	○	○	○		

Students: Fill circles completely with black ink or pencil.
Erase all stray marks completely.

Teachers: Hold paper on flat surface when grading.
Be aware of bright lights and shadows.

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Name: _____ Date: _____

Honors Algebra II Summer Work 2018

Multiple Choice: (1 point each)

Directions: Choose the best answer for each question; be sure to bubble in the correct choice on the provided bubble sheet. Show all work, or it is almost like you didn't do anything at all!

1. Simplify: $(6-2)^3 \div 2$
   a. 104
   b. 128
   c. 32
   d. 26

2. What is the value of the expression if x = 5 and y = 2? $x^2 + x - 12 \div y^2$
   a. 4.5
   b. 27
   c. 9
   d. 30

3. To which subset of numbers does -15 not belong?
   a. Real
   b. Integer
   c. Rational
   d. Irrational

4. Which is the simplified form of $-(2y - 3x)$?
   a. $2y + 3x$
   b. $-2y - 3x$
   c. $-2y + 3x$
   d. $2y - 3x$

5. Which of the following statements is *not* always true?
   a. $a + (-b) = -b + a$
   b. $a - (-b) = (-b) - a$
   c. $(a + b) + (-c) = a + [b + (-c)]$
   d. $-(-a) = a$

6. What is the solution of $x + 13 = 27$?
   a. 40
   b. 14
   c. -40
   d. -14

7. What is the solution of $5 = 5m - 23 + 2m$?
   a. 4
   b. 28
   c. -4
   d. -28

8. What is the solution of $-8x - 5 + 3x = 7 + 4x - 9$?
   a. -3
   b. $-\frac{1}{3}$
   c. $\frac{1}{3}$
   d. 3

9. What is the solution to the proportion $\frac{x-1}{x} = \frac{2}{3}$?

a. -2
b. 0
c. 2
d. 3

10. What is the solution of $x + 5 \leq 29$?

a. $x < 24$
b. $x \leq 24$
c. $x > 24$
d. $x \geq 24$

11. What is the solution of $25 > -3(4n - 3)$?

a. $n < -\frac{4}{3}$
b. $n < \frac{4}{3}$
c. $n > -\frac{4}{3}$
d. $n > \frac{4}{3}$

12. What are the solutions of $8 \leq x + 2 < 12$?

a. $x \geq 6$
b. $6 \leq x < 10$
c. $10 \leq x < 14$
d. $x < 10$

13. What is the slope of the line that passes through the points (-2, 5) and (1, 4)?

a. -3
b. -1
c. $-\frac{1}{3}$
d. $\frac{1}{3}$

14. A line has a slope of $-\frac{5}{3}$. Through which two points could this line pass?

a. (12, 13) and (17, 10)
b. (16, 15) and (13, 10)
c. (0, 7) and (3, 10)
d. (11, 13) and (8, 18)

15. What is the slope of a vertical line?

a. -1
b. 0
c. 1
d. Undefined

16. What is an equation of the line that has a slope of -4 and passes through the point (-2, -5)?

a. $y = -4x - 8$
b. $y = -4x - 13$
c. $y = -4x - 5$
d. $y = -4x + 3$

17. Which equation is equivalent to $y - 6 = -12(x + 4)$?

a. $y = -6x - 48$
b. $y = 6x - 48$
c. $y = -12x - 42$
d. $y = -12x - 54$

18. Which equation represents the line that passes through the points (6, -3) and (-4, -9)?

a. $y + 4 = -\frac{3}{5}(x + 9)$
b. $y + 4 = \frac{5}{3}(x + 9)$
c. $y - 3 = \frac{3}{5}(x + 6)$
d. $y + 3 = \frac{3}{5}(x - 6)$

19. What is $y = -\frac{5}{3}x - 6$ written in standard form using integers?

a. $\frac{5}{3}x + y = -6$
b. $5x + 3y = -6$
c. $5x + 3y = -18$
d. $-5x + 3y = 6$

20. What are the x- and y-intercepts of the graph of $-7x + 4y = -14$?

a. (-7, 0) and (0, 4)
b. (7, 0) and (0, -4)
c. (-2, 0) and (0, 3.5)
d. (2, 0) and (0, -3.5)

21. Which equation has a graph parallel to the graph of $9x + 3y = 27$

a. $y = 3x - 22$
b. $y = -3x + 8$
c. $y = \frac{1}{3}x + 12$
d. $y = -\frac{1}{3}x - 2$

22. Which equation has a graph perpendicular to the graph of $7x = 14y - 8$?

a. $y = -2x - 7$
b. $y = -\frac{1}{2}x + 4$
c. $y = \frac{1}{2}x - 1$
d. $y = 2x + 9$

23. Which best describes a system of equations that has no solution?

a. Consistent, independent
b. Inconsistent, dependent
c. Consistent, dependent
d. Inconsistent

24. Which cannot describe a system of linear equations?

a. No solution
b. Exactly two solutions
c. Infinite solutions
d. Exactly one solution

25. What is the solution of the following system of equations? $\begin{cases} 5x + 7y = 3 \\ 2x + 3y = 1 \end{cases}$

a. (-2, 1)
b. (1, -2)
c. (2, -1)
d. (-1, 2)

26. What is the solution of the following system of equations? $\begin{cases} 5x + 7y = 3 \\ 2x = -3y + 1 \end{cases}$

a. (11, 17)
b. (2, -1)
c. (11.5, 8)
d. (-2, 1)

27. What is the simplified form of $3a^4b^{-2}c^3$?

a. $\frac{81a^4c^3}{b^2}$
b. $\frac{81a^4}{b^2c^3}$
c. $\frac{3a^4}{b^2c^3}$
d. $\frac{3a^4c^3}{b^2}$

28. What is the simplified form of $-(14x)^0y^{-7}z$?

a. $-\frac{14z}{y^7}$
b. $\frac{14z}{y^7}$
c. $\frac{z}{y^7}$
d. $-\frac{z}{y^7}$

29. How is $6d - 8 + 4d^2$ written in standard form?

a. $4d^2 + 6d - 8$
b. $4d^2 + 6d + 8$
c. $4d^2 - 6d - 8$
d. $4d^2 - 6d + 8$

30. What is the difference of the following polynomials? $(6x^3 - 2x^2 + 4) - (2x^3 + 4x^2 - 5)$?

a. $4x^3 - 2x^2 - 1$
b. $8x^3 + 6x^2 - 1$
c. $4x^3 - 2x^2 + 1$
d. $4x^3 - 6x^2 + 9$

31. What is the simplified form of $(4j^2 + 6) + (2j^2 - 3)$?

a. $6j^2 - 3$
b. $6j^2 + 3$
c. $6j^2 + 9$
d. $4j^2 + 3$

32. What is the simplified form of $-3z^2(z + 2) - 4(z^2 + 1)$?

a. $-7z^2 + 1$
b. $-3z^3 - 4z^2 - 6z - 4$
c. $-3z^3 - 2z^2 - 4$
d. $-3z^3 - 10z^2 - 4$

33. What is the simplified form of $(x - 2)(2x + 3)$?

a. $2x^2 - x - 6$
b. $2x^2 - 6$
c. $2x^2 - 7x - 6$
d. $2x^2 + x - 6$

34. What is the simplified form of $(2x^2 + 4x - 3)(3x + 1)$?

a. $6x^3 + 10x^2 - 5x + 3$
b. $6x^3 + 14x^2 + 5x - 3$
c. $6x^3 + 14x^2 - 5x - 3$
d. $6x^3 - 10x^2 - 5x - 3$

35. What is the factored form of $x^2 + 3x - 10$?

a. $(x + 5)(x - 2)$
b. $(x - 5)(x + 2)$
c. $(x - 2)(x - 5)$
d. $(x + 5)(x + 2)$

36. What is the factored form of $16x^2 - 16x - 12$?

a. $4(2x - 2)(2x + 2)$
b. $4(4x - 6)(x + 2)$
c. $4(2x - 2)(2x + 3)$
d. $4(2x - 3)(2x + 1)$

37. What is the factored form of $q^2 - 12q + 36$?

a. $(q + 6)(q - 6)$
b. $(q - 6)(q - 6)$
c. $(q - 9)(q + 4)$
d. $(q + 4)(q + 9)$

38. What is the factored form of $9x^2 - 64$?

a. $(3x - 8)^2$
b. $(3x + 8)^2$
c. $(3x - 8)(3x + 8)$
d. $(9x - 8)(x + 8)$

39. What is the factored form of $49x^2 - 56x + 16$?

a. $(7x - 4)^2$
b. $(7x + 4)(7x - 4)$
c. $(7x + 4)^2$
d. $(7x - 8)^2$

40. What is the factored form of $4x^3 + 3x^2 + 8x + 6$?

a. $(2x^2 + 3)(2x + 3)$
b. $(2x^2 + 2)(3x + 2)$
c. $(x^2 + 2)(2x + 3)$
d. $(x^2 + 2)(4x + 3)$

41. Which equation represents the axis of symmetry of the function $y = -2x^2 + 4x - 6$?

a. $y = 1$
b. $x = 1$
c. $x = 3$
d. $x = -3$

42. What are the coordinates of the vertex of the graph of the function $y = -x^2 + 6x - 11$?

a. (3, -2)
b. (3, 16)
c. (-3, -29)
d. (-3, -20)

43. What is the solution of $n^2 - 49 = 0$?

a. -7
b. 7
c. 7,-7
d. No solution

44. What are the solutions of $3x^2 - 10x - 8 = 0$?

a. 4
b. $-\frac{2}{3}$
c. $4, -\frac{2}{3}$
d. No solution

45. What is a solution of $x^2 + 6x = -5$?

a. $x = -6$
b. $x = -1$
c. $x = 1$
d. $x = 6$

46. What is the simplified form of $\sqrt{140}$?

a. $4\sqrt{35}$
b. $10\sqrt{14}$
c. $2\sqrt{70}$
d. $2\sqrt{35}$

47. What is the simplified form of $8\sqrt{5} + 5\sqrt{5}$?

a. $3\sqrt{5}$
b. $13\sqrt{5}$
c. $40\sqrt{5}$
d. $13\sqrt{10}$

48. What is the simplified form of $4\sqrt{3} - \sqrt{27}$?

a. $-5\sqrt{3}$
b. $-7\sqrt{3}$
c. $\sqrt{3}$
d. $-\sqrt{9}$

49. What is the simplified form of $\sqrt{8}(\sqrt{5} + 4)$?

a. $16\sqrt{10}$
b. $2\sqrt{10} + 4\sqrt{2}$
c. $4\sqrt{10} + 4\sqrt{2}$
d. $2\sqrt{10} + 8\sqrt{2}$

50. What is the simplified form of $3\sqrt{5c} \cdot \sqrt{15c^3}$?

a. $15c^2\sqrt{3}$
b. $6c^2\sqrt{5}$
c. $5c^2\sqrt{3}$
d. $12c^4\sqrt{5}$