

## Clearview Regional High School District 2021 Summer Assignment Coversheet

<b>Course:</b>	Honors Algebra II
<b>Teacher(s):</b>	Tentative: Laurie Doughten and Colleen Senor
<b>Due Date:</b>	<ul style="list-style-type: none"> <li>Strongly recommend, but not mandatory</li> </ul>
<b>Purpose of Assignment:</b>	<ul style="list-style-type: none"> <li>To help students review Algebra I pre-requisites skill that must be mastered when entering H. Algebra II.</li> <li>Many students have had a year off from Algebra I while taking Geometry, and therefore will need to review some of this material over the summer</li> </ul>
<b>Description:</b>	<ul style="list-style-type: none"> <li>Algebra I Packet in preparation for Honors Algebra II</li> </ul>
<b>New Jersey Student Learning Standards (Content) covered:</b>	<p>A-CED.A.2, 3 Rewrite expressions and produce equivalent forms.  A-REI.C.6 Solve systems of linear equations.  A-REI.D.11, 12 Represent and solve equations and inequalities graphically.  F-IF.A.1, 2 Understand the concept of a function  F-IF.B.4, 6 Interpret functions  F-IF.C.7, 8, 9 Analyze functions  F-BF.A.1 Build a function that models a relationship between two quantities  F-BF.B.3 Build new functions from existing functions  F-LE-B.5 Interpret expressions for functions in terms of the model.</p>
<b>Grading/Use of Assignment:</b>	<ul style="list-style-type: none"> <li>This packet will not be graded, but is highly recommended to complete prior to the start of school. There will be a brief review of all these concepts within the first week of school.</li> </ul>
<b>Specific Expectations:</b>	<ul style="list-style-type: none"> <li>While the work is optional, students who participate should have it completed before the start of school.</li> <li>Answers can be checked once they are posted in August.</li> <li>Students should practice with skills that they find they are deficient in prior to the start of school and mark any questions that they have for the teacher.</li> <li>Time will be allotted in class for questions about problems in the packet, but the skills in the packet will not be completely retaught in class.</li> </ul>
<b>Where to Locate Assignment:</b>	<ul style="list-style-type: none"> <li>Clearview District Website</li> </ul>
<b>Additional Help/ Resource(s):</b>	<ul style="list-style-type: none"> <li>ONLINE RESOURCES: Khan Academy &amp; Kuta Software</li> </ul>
<b>Summer contact info:</b>	<ul style="list-style-type: none"> <li>If you have any questions or concerns, please contact the Math Supervisor Cheryl Catts. ccatts@clearviewregional.edu</li> </ul>

# Algebra Review – prep for Honors Algebra II

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## SOLVING EQUATIONS

SOLVE each of the following equations. Show all work.

1.  $-\frac{3d}{4} + 5 = 7$

1. \_\_\_\_\_

2.  $\frac{1}{2}(4x + 12) = 6(x - 1)$

2. \_\_\_\_\_

3.  $\frac{5n+1}{8} = \frac{3n-5}{4}$

3. \_\_\_\_\_

Solve for x.

4.  $\frac{x-3}{6} + 3 = a$

4. \_\_\_\_\_

## FUNCTIONS, EQUATIONS & GRAPHS

State the DOMAIN and RANGE of each relation. Then determine if it is a function.

5.  $\{(-30, 40), (0, 40), (30, 20), (20, 0)\}$

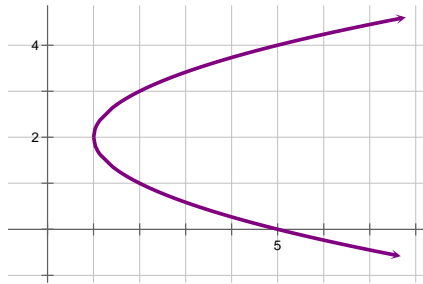
Domain: \_\_\_\_\_

Range: \_\_\_\_\_

Function? \_\_\_\_\_

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6. Does the graph below represent a FUNCTION? Explain.



Domain: \_\_\_\_\_

Range: \_\_\_\_\_

Function? \_\_\_\_\_

Given the FUNCTIONS  $f(x) = 2x - 3$  and  $g(x) = 2 - x + 2x^2$ , evaluate the following:

7.  $f(-5)$

7. \_\_\_\_\_

8.  $g(\frac{1}{2})$

8. \_\_\_\_\_

9. If  $f(x) = -3x + 7$  and  $g(x) = -7x + 3$ , what is the value of  $f(-3) - g(3)$ ?

9. \_\_\_\_\_

10. Find the EQUATION OF THE LINE containing the points  $(7, -1)$  and  $(-2, 4)$ .

10: \_\_\_\_\_

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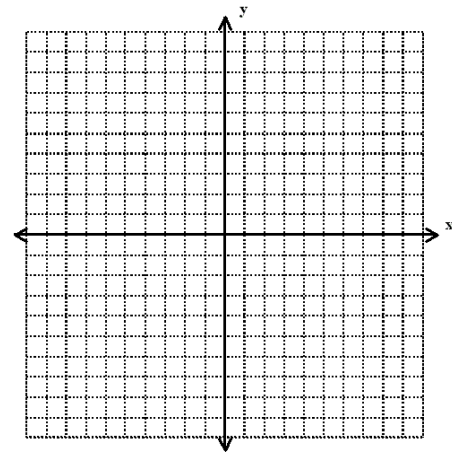
11. Find the X and Y INTERCEPTS of  $6x + 2y = 12$ .

11. \_\_\_\_\_

12. Write the equation of the line in STANDARD FORM:  $y = -\frac{3}{5}x + 3$

12. \_\_\_\_\_

13. Graph the INEQUALITY:  $2x + 3y \geq -6$



### LINEAR SYSTEMS:

Solve each System of Equations using SUBSTITUTION or ELIMINATION.

14. 
$$\begin{cases} 4p + 2q = 8 \\ q = 2p + 1 \end{cases}$$

14. \_\_\_\_\_

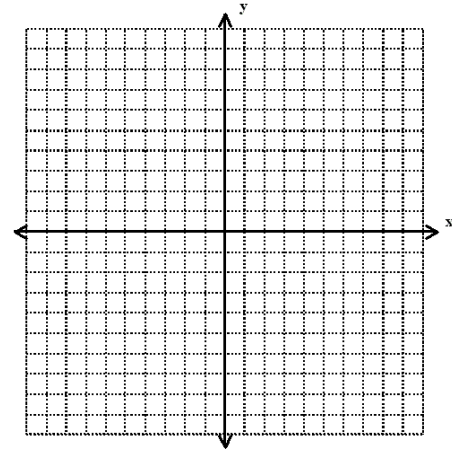
15. 
$$\begin{cases} 2a + 3b = 12 \\ 5a - b = 13 \end{cases}$$

15. \_\_\_\_\_

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Graph the solution of the SYSTEM OF INEQUALITIES.

$$16. \begin{cases} x + 2y \leq 10 \\ x + y \leq 3 \end{cases}$$



## EXPONENTS & EXPONENTIAL FUNCTIONS:

Simplify each expression. Use only POSITIVE EXPONENTS.

17.  $(2x^3y^7)^{-2}$

18.  $\frac{12x^5y^3}{4x^{-1}}$

17. \_\_\_\_\_

18. \_\_\_\_\_

19.  $\left(\frac{r^{-7}b^{-8}}{t^{-4}w}\right)^0$

19. \_\_\_\_\_

Simplify each RADICAL EXPRESSION. Answers should be in simplest radical form.

20.  $\sqrt{18}$

21.  $\sqrt[3]{216}$

22.  $\sqrt{\frac{3}{15}}$

20. \_\_\_\_\_

21. \_\_\_\_\_

22. \_\_\_\_\_

23.  $4\sqrt{b^5}$

24. Express in Radical Form:  $m^{\frac{1}{3}}$

23. \_\_\_\_\_

24. \_\_\_\_\_

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## POLYNOMIALS & FACTORING:

Simplify.

25.  $(5x^2 - 3x + 7x) + (9x^2 + 2x^2 + 7x)$

25. \_\_\_\_\_

26.  $(3x - 5)(2x + 7)$

27.  $(8r - 5s)^2$

26. \_\_\_\_\_

27. \_\_\_\_\_

**FACTOR** each polynomial completely.

28.  $x^2 - 10x + 24$

29.  $14y^2 + 7y - 21$

28. \_\_\_\_\_

29. \_\_\_\_\_

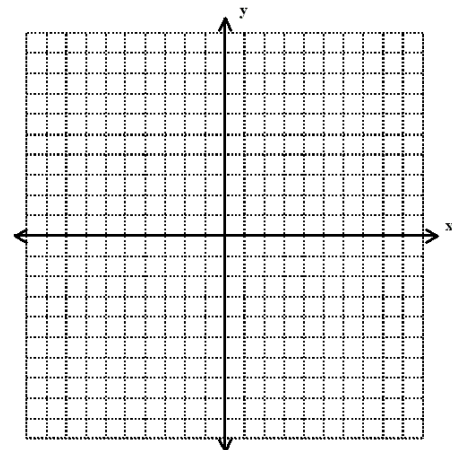
30.  $4x^3 + 12x - 28$

30. \_\_\_\_\_

## QUADRATIC FUNCTIONS:

Graph the quadratic function:

31.  $y = -2x^2 + 4$



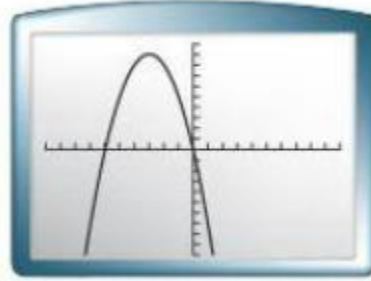
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Find the equation for the **AXIS OF SYMMETRY** and the coordinates of the **VERTEX** for each graph.

32.  $y = 2x^2 + 4x - 1$

33.



AOS: \_\_\_\_\_

Vertex: \_\_\_\_\_

AOS: \_\_\_\_\_ Vertex: \_\_\_\_\_

Solve the quadratic equation using **SQUARE ROOTS**:

34.  $5x^2 - 20 = 0$

34. \_\_\_\_\_

**SOLVE** each Quadratic Equation by **FACTORING**.

35. \_\_\_\_\_

35.  $x^2 - 16 = 0$

36.  $2k^2 + 22k + 60 = 0$

36. \_\_\_\_\_

Solve the quadratic equation using the **QUADRATIC FORMULA**:

37.  $2x^2 - 3x - 5 = 0$

37. \_\_\_\_\_

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### RADICAL EXPRESSIONS & EQUATIONS:

Simplify each expression.

38.  $5\sqrt{8} + 2\sqrt{72}$

39.  $-\sqrt{12}(4 - 2\sqrt{3})$

38. \_\_\_\_\_

39. \_\_\_\_\_

Solve the RADICAL EQUATION:

40.  $\sqrt{2b} + 4 = 8$

40. \_\_\_\_\_