Summer Assignment 2023
Incoming Algebra 2 Honors

Dear Student,

This summer assignment will prepare you for success in Algebra 2. Please complete the following exercises this summer and be prepared to submit your work by Tuesday September 12 to your Algebra 2 teacher.

This packet will be counted as the first homework assignment of the year. In order to receive full credit, all work must be shown neatly in the space provided or attached to this packet on separate sheets of paper. Answers written with no work shown will receive no credit. You are encouraged to work in groups to help each other, however copying is unacceptable. This packet consists of Algebra 1 concepts, so it is expected that you are coming in to this course knowing this material. If there is anything in this packet that you do not remember, scan the QR code for that section and it will take you to a video lesson on that topic.

If you have any questions, please reach out to your math teacher or jtalewsky@bbrook.k12.nj.us.

Sincerely,

The BBHS Math Department

Solve each equation.

1. $2(n+5) = -2$

2. $\frac{v+9}{3} = 8$

3. $-18 - 6k = 6(1+3k)$

4. $-5(1-5x) + 5(-8x-2) = -4x - 8x$

5. $4|n+8| = 56$

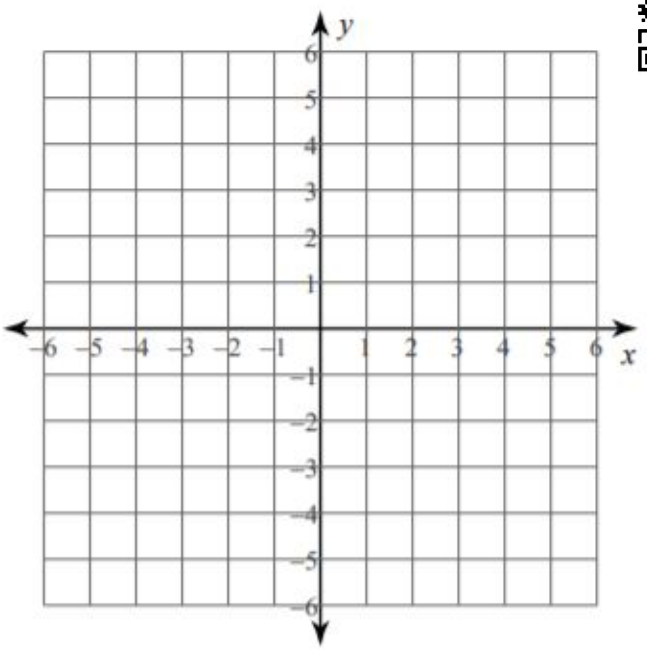
Solve each proportion.

6. $\frac{9}{6} = \frac{x}{10}$

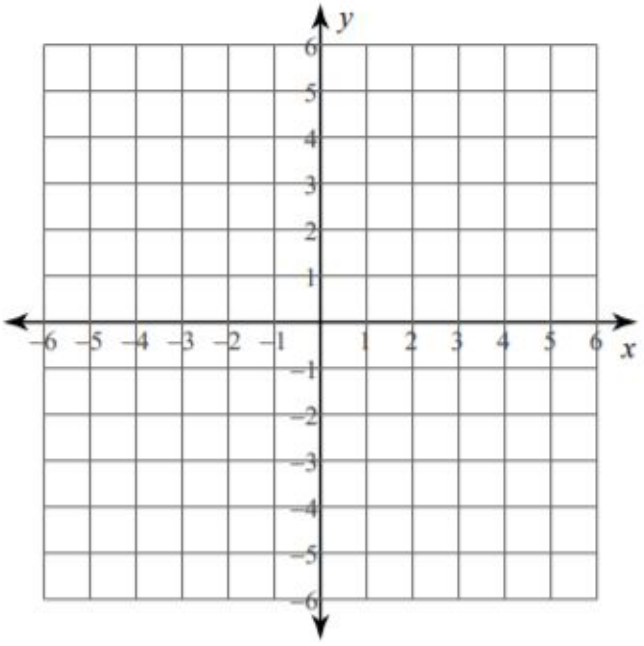
7. $\frac{7}{b+5} = \frac{10}{5}$

Graph the linear equation. Use any method.

8. $y = \frac{1}{4}x - 1$



9. $x - 2y = -6$



Write the equation of each line, in slope intercept form using the given information.

10. Slope of ⅕ passing through the point (-10,3).

11. Passing through the points (7,2) and (3,-2).

Use the graph to find the indicated information.

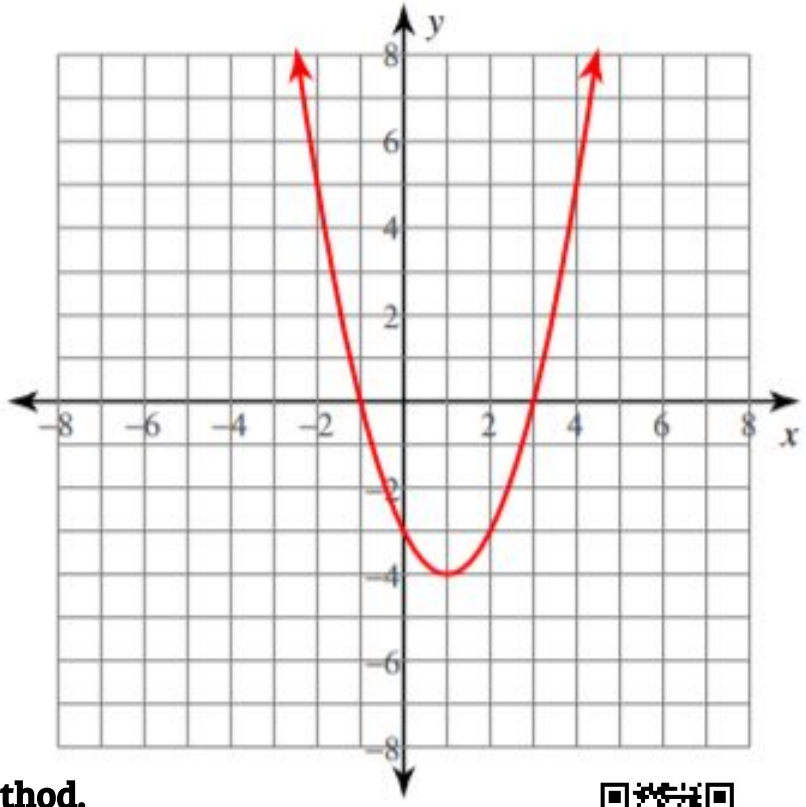
12. The x-intercept(s):

13. The y-intercept(s):

14. The vertex:

15. Domain:

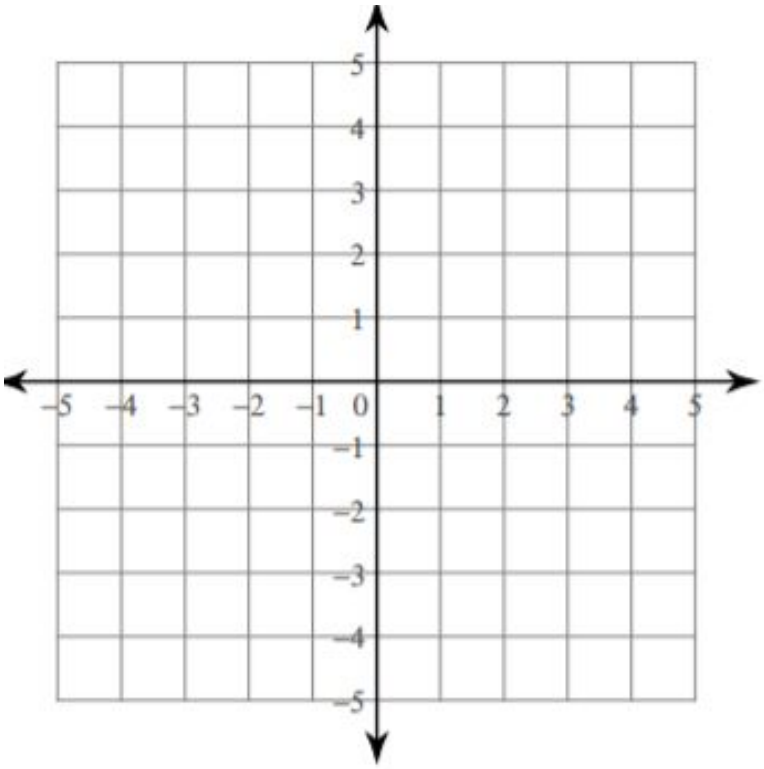
16. Range:



Solve each system using the indicated method.

17. Graphing

$$y = -3x + 4$$
$$y = 3x - 2$$



18. Substitution

$$4x + 2y = 10$$
$$x - y = 13$$

19. Elimination

$$6x - 12y = 24$$
$$-x - 6y = 4$$

Evaluate each function.

20. $h(t) = |t + 2| + 3$; Find $h(6)$

21. $f(x) = x^2 - 3x$; Find $f(-8)$

22. $p(a) = -4^{3a}$; Find $p(-1)$

Simplify each expression.

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

24. $(x^4)^{-3} \cdot 2x^4$

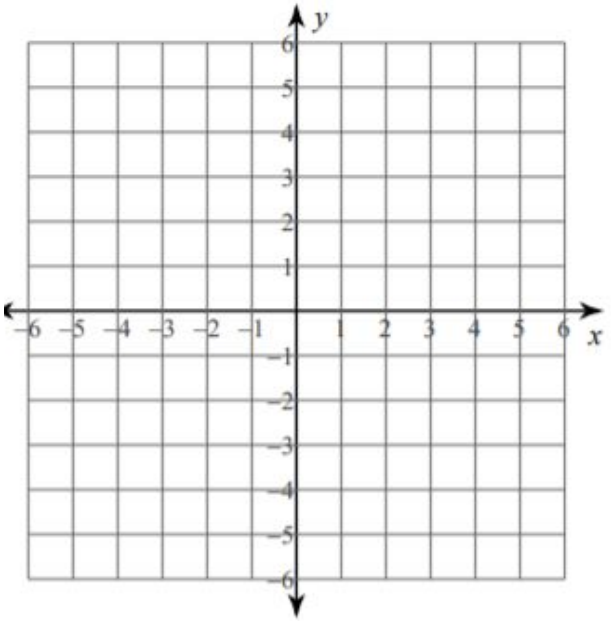
25. $(2v)^2 \cdot 2v^2$

26. $\dfrac{2x^2y^4 \cdot 4x^2y^4 \cdot 3x}{3x^{-3}y^2}$

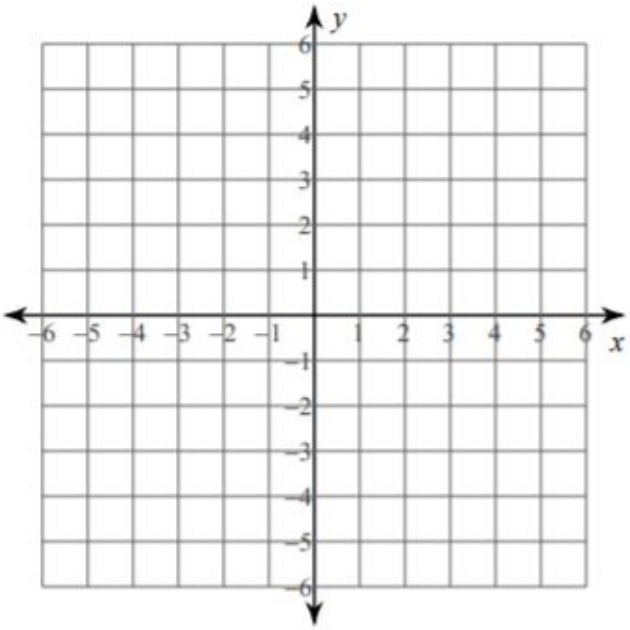
27. $(a^{-3}b^{-3})^0$

Graph each function.

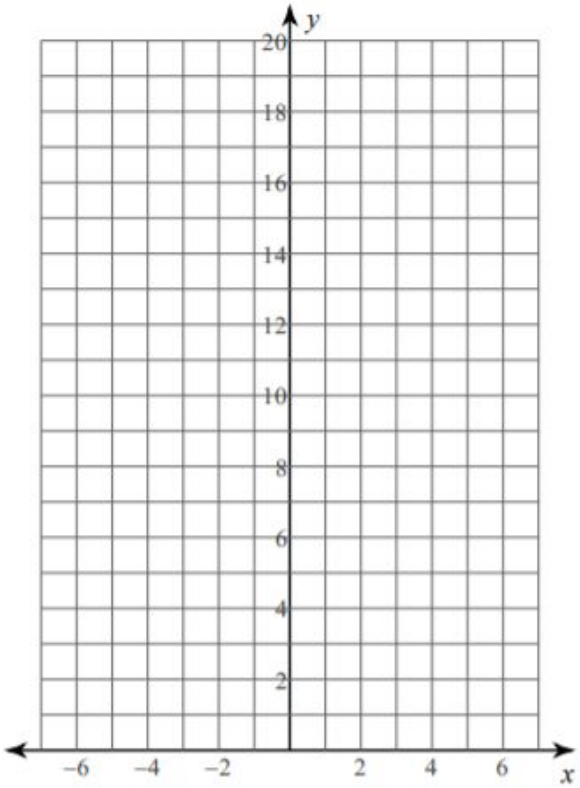
28. $y = |x - 2| - 4$



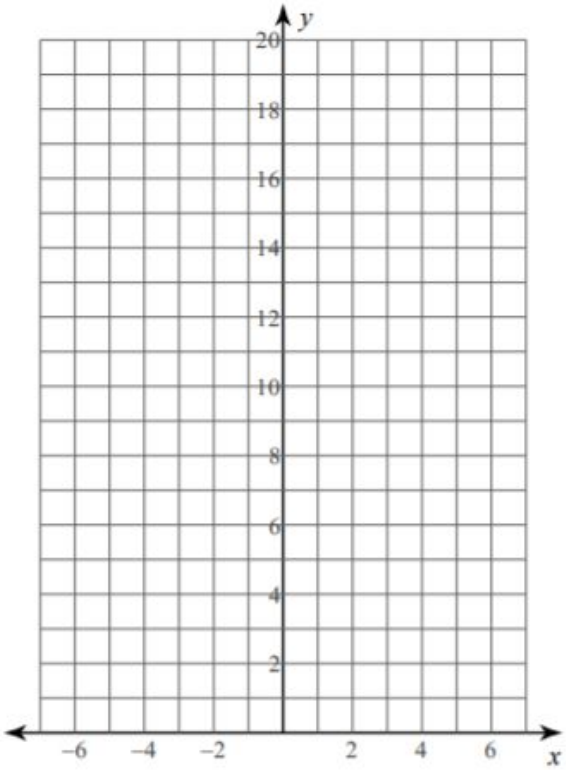
29. $y = -|x - 1| + 1$



30. $f(x) = 4 \cdot 2^x$



31. $f(x) = 4 \cdot \left(\frac{1}{2}\right)^x$



Simplify each expression. Write your answer in standard form.

32. $(5p^2 - 3) + (2p^2 - 3p^3)$

33. $(5a + 4) - (5a + 3)$

34. $(3 - 6n^5 - 8n^4) - (-6n^4 - 3n - 8n^5)$

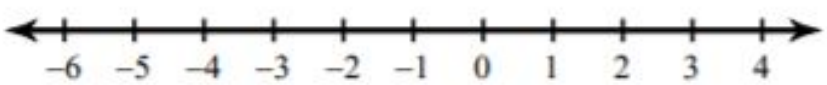
35. $2x(-2x - 3)$

36. $(2n + 2)(6n + 1)$

37. $(7k - 3)(k^2 - 2k + 7)$

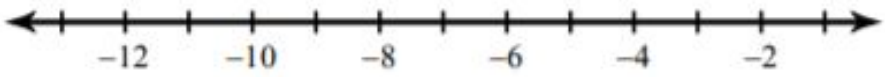
Solve the inequality and graph its solution.

38. $6x + 2 + 6x < 14$

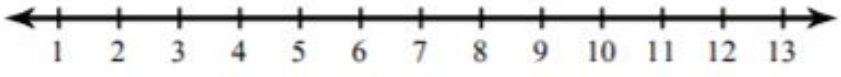


Solve the inequality and graph its solution.

39. $-36 < 3p - 6 < -15$

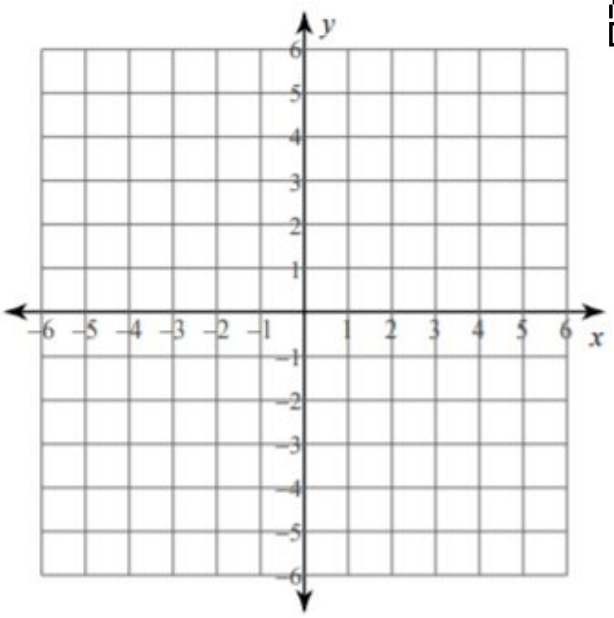


40. $2n + 7 \geq 27$ or $3 + 3n \leq 30$

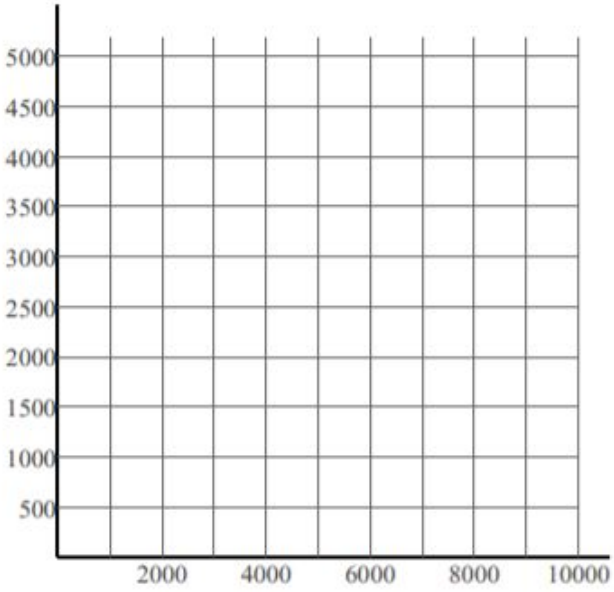


Solve the inequality and graph its solution.

41. $5x - 3y \leq -15$



42. Construct a scatterplot using the table. Identify the type of correlation that the data shows (positive, negative, none).



X	Y
1,000	1,300
2,000	1,500
3,000	2,000
3,000	2,000
4,000	2,400

X	Y
5,000	2,500
7,000	3,600
7,000	3,700
9,000	4,200
10,000	5,200

Find each indicated value. Then create a box and whisker plot of the data.

43.

Age At Inauguration

President	Age
Calvin Coolidge	51
Lyndon B Johnson	55
Gerald Ford	61
Theodore Roosevelt	42
Martin Van Buren	54

President	Age
James Madison	57
Millard Fillmore	50
Zachary Taylor	64
James K Polk	49

President	Age
Barack Obama	47
Chester A Arthur	51
Grover Cleveland	55
Harry S Truman	60

President	Age
William McKinley	54
James A Garfield	49
William Howard Taft	51
Abraham Lincoln	52

Mean:

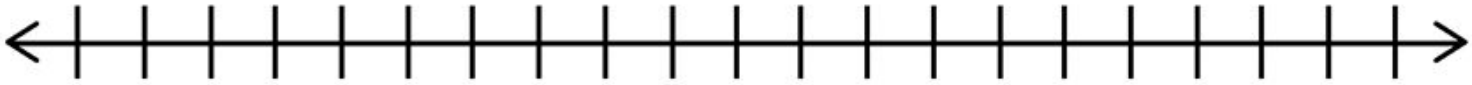
Median:

Minimum::

Maximum:

1st Quartile:

3rd Quartile:



Math Department Course Requirements

~ Bound Brook High School ~

Course Prerequisites: A combination of 2 or more of the following…

Course Expectations

College Prep	Honors	Dual Enrollment	AP
8th Grade Algebra 1 Readiness Test (Algebra 1 CP)	**Alg. 1 and Geometry** Honors Prerequisite 75%+ CP Prerequisite 90%+ Teacher Recommendation Student Work Ethic LinkIT Form C Meeting/Exceeding ***Appeal Process Available***	**Quant. Reasoning** Honors Prerequisite 70%+ CP Prerequisite 80%+ Teacher Recommendation ***Accuplacer Testing** Student Work Ethic ***Appeal Process Available*** *** Required**	**Statistics** Honors Prerequisite 80%+ CP Prerequisite 90%+ Teacher Recommendation Student Work Ethic ***Appeal Process Available***
	Honors **Algebra 2** Alg. 1 H Prerequisite 75%+ Alg. 1 CP Prerequisite 90%+ Teacher Recommendation Student Work Ethic LinkIT Form C Meeting/Exceeding ***Appeal Process Available***	**Dual Enrollment** **Pre-Calculus Honors** Honors Prerequisite 80%+ CP Prerequisite 90%+ Teacher Recommendation ***Accuplacer Testing** Student Work Ethic ***Appeal Process Available*** *** Required**	**AP/Dual Enrollment** **Calculus** Pre-Calc Honors Prerequisite 70%+ CP Prerequisite 90%+ and ***Accuplacer Testing** Teacher Recommendation Student Work Ethic ***Appeal Process Available*** *** Required**

CP Alg. 1, Geometry, Alg. 2, Pre-Calc

- Summer Assignment Optional
- 8-10 Major Assessments
- 2 Projects Per Year
- Additional Minor Assessments
- Up to 30 minutes of HW each night

Honors Alg. 1, Geometry, Alg. 2

- Required Summer Assignment
- 10-12 Major Assessments Per Year
- 2 Projects Per Year
- Additional Minor Assessments
- Assessments will be timed and must be completed in that time frame.
- Up to 45 minutes of HW each night

Quantitative Reasoning

- Required Summer Assignment
- 4 Labs Per Year
- 4-6 projects Per Year
- Additional Tests/Quizzes
- Final Exam
- Daily Preparation: 1 additional hour for each hour of class time (Studying/Homework)

Pre-Calculus Honors

- Required Summer Assignment
- 6-7 Labs per semester (12-14 year)
- 7 Tests
- 1 Project
- Semester Final Exams (2)
- Daily Preparation: 1 additional hour for each hour of class time (Studying/Homework)

AP Calculus

- Required Summer Assignment
- 8 Labs per year
- Additional Tests/Quizzes
- Final Exam
- Daily Preparation: 1 additional hour for each hour of class time plus weekend assignments

AP Statistics

- Required Summer Assignment
- 2 Major Projects
- 10 Tests
- Additional Quizzes and AP Graded Practice
- Daily Preparation: 1 additional hour for each hour of class time (Studying/Homework)

***Appeal Process*: Students may appeal their placement by scheduling a meeting with the department supervisor. The student should come to this meeting prepared with other evidence to demonstrate they meet the requirements for honors/AP level classes.