Summer Assignment 2023
Incoming Algebra 1 Honors

Dear Student,

This summer assignment will prepare you for success in Algebra 1. Please complete the following exercises this summer and be prepared to submit your work by Tuesday September 12 to your Algebra 1 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 (where needed) will receive no credit. You are encouraged to work in groups to help each other, however copying is unacceptable. This packet consists of 7th and 8th grade material, 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

Write an algebraic expression for each phrase.

1. 11 more than y.

2. A taxi charges $3 for the first mile and $2 for each additional mile traveled. Let m be the number of miles traveled in the taxi.

3. 8 less the product of x and 3.

Evaluate each expression.

4. $20 \div (4 - (10 - 8))$

5. $-4 - (1 - 5) - (-4)^2$

6. $\dfrac{45}{8(5-4)-3}$

Evaluate each expression with the values given.

7. $x(z+3)+1+3-y$; use $x=6$, $y=-5$, and $z=2$

8. $-3 \div 3(a + c(b+5) - (-6+a))$; use $a=1$, $b=-6$, and $c=-4$

Simplify each expression.

9. $10n - 4n$

10. $-10(-8x + 9) - 8x$

11. $7(1 + 9v) - 8(-5v - 6)$

12. $-2(-6x - 9) - 4(x + 9)$

Write each number in scientific notation.

13. 0.000006

14. 5400000

Write each number in standard notation.

15. 2.66×10^4

16. 1.5×10^{-2}

Solve each equation.

17. $9x - 7 = -7$

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

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

20. $2(n + 5) = -2$

21. $24a - 22 = -4(1 - 6a)$

Solve each equation.

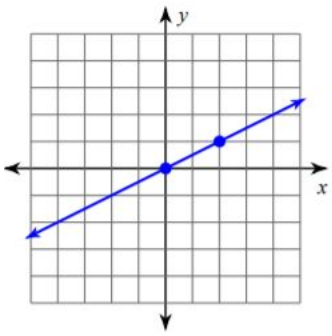
22. $\frac{1}{2}x + \frac{3}{4}x = 5 - 2.5x$

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

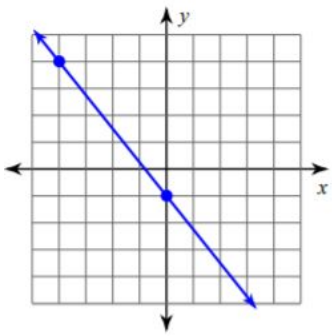
24. $-5(1-5x) + 5(-8x-2) = -4x - 8x$

Find the slope from the graphs below.

25.



26.



Find the slope using the given points.

27. $(-4, 7), (-6, -4)$

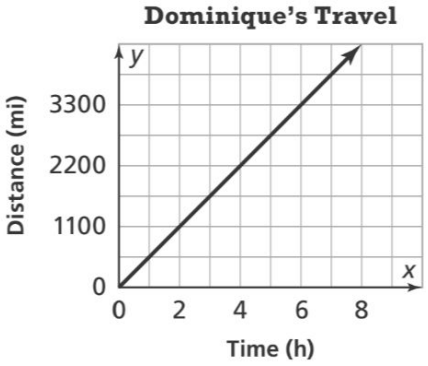
28. $(17, -13), (17, 8)$

Write an equation to model the problem. Then solve the problem.

29. A music shop charges a deposit of $20, plus a monthly rate of $30 to rent an instrument. For how many months did Avi rent an instrument if he spent a total of $80?

30. Dominique and Ella are comparing whose jet traveled faster. The graph shows the relationship between the total distance Dominique traveled and the time in hours. The distance Ella traveled after x hours can be represented by the equation y = 550x.

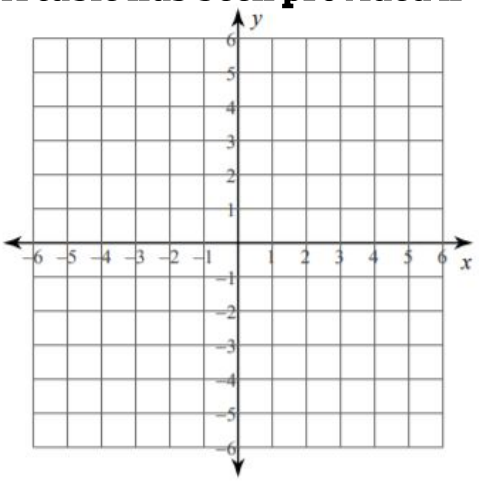
Who, if anyone, traveled at a faster speed? Explain.



Graph the linear equation. Use any method. A table has been provided if you'd like to use it.

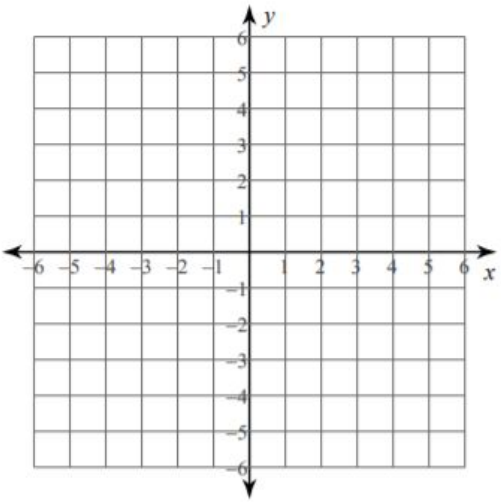
31. $y = \frac{1}{4}x - 1$

x	y



32. $x - 2y = -6$

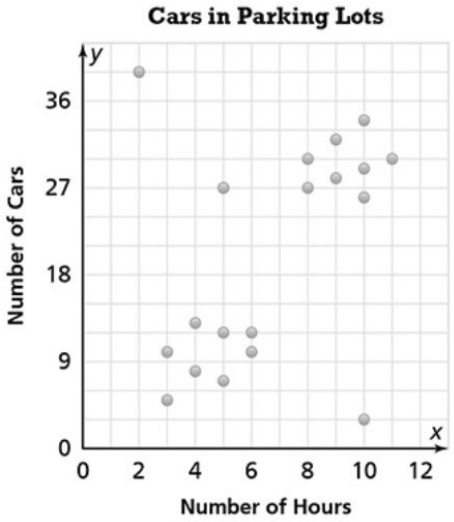
x	y



Answer each question in complete sentences.

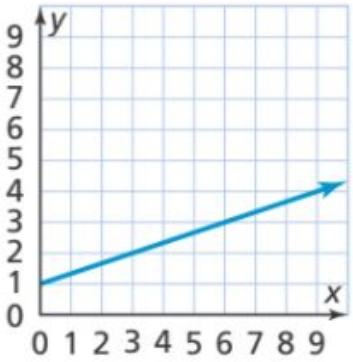
33. What is the difference between a rational and irrational number? Provide an example of each.

34. The scatterplot below shows the number of cars that are parked in lots across a city based on how many hours have passed since opening. Charli looks at the scatterplot and comes to the conclusion that 7 hours after opening isn't a popular hour to park, that's why no other cars are in the lot at that time. What could be some other plausible explanations for the gap between 6 and 8 hours on the graph?



35. Which function has a larger rate of change? Explain your reasoning.

Function A



Function B

$y = \frac{1}{2}x - 1$

36. A meal at a restaurant costs $32.50. You leave a 20% tip for the waiter and there is 7% sales tax. How much do you end up spending on the meal including tax and tip? (Tip and tax are calculated on the cost of the meal only)

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.