Summer Assignment 2022
Incoming Pre Calculus Honors

Dear Student,

This summer assignment will prepare you for success in Pre Calculus. Please complete the following exercises this summer and be prepared to submit your work by Tuesday September 13 to your Pre Calculus 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 2 and Geometry 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.

You will have a test on the material covered in this packet during the second week of school. This will be your first test grade of marking period 1.

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

Sincerely,

The BBHS Math Department

Use the graph to find the indicated information. Write all intervals in interval notation

1. The x-intercept(s):

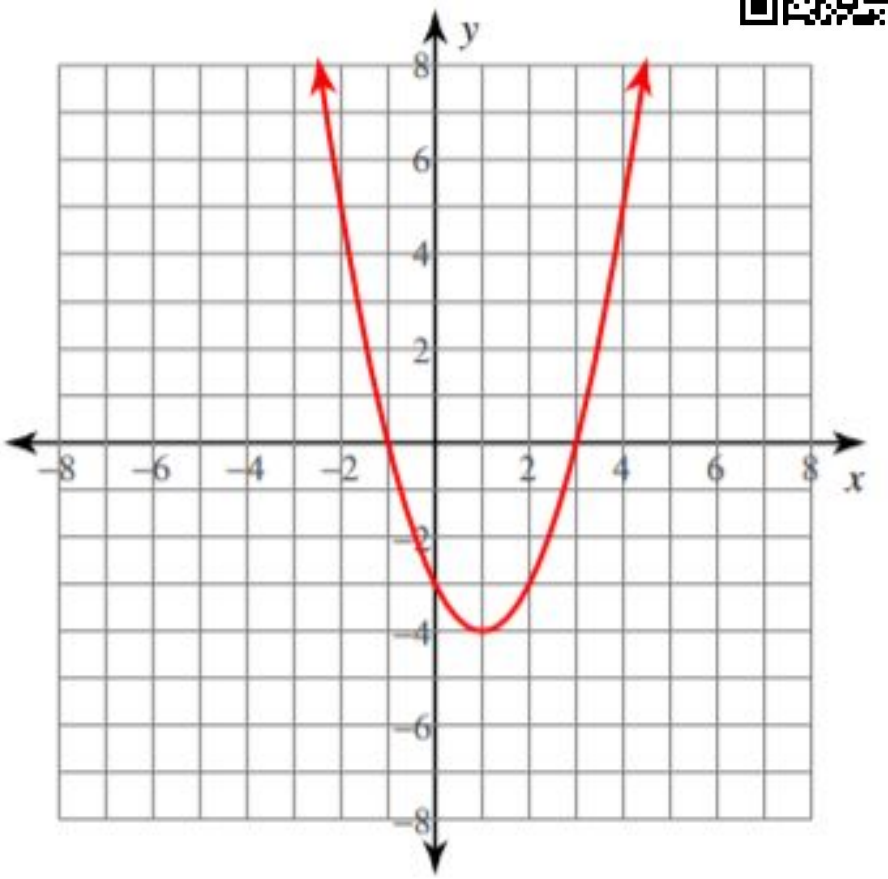
2. The y-intercept(s):

3. The vertex:

4. Domain:

5. Range:

6. Increasing/Decreasing:



Evaluate each function.

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

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

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

Evaluate each function.

10. $h(t) = 2 \cdot 3^{t+3}$; Find $h(4+t)$

11. $g(n) = n^3 - 5n^2$; Find $g(-4n)$

12. $f(n) = n^2 - 2n$; Find $f(n^2)$

Write the equation of each line using the given information.

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

14. Parallel to the line 3x-y=6 passing through the point (-2,5).

15. Perpendicular to y=2x-1 passing through the point (-10,3).

Simplify each expression. Write your answer in standard form.

16. $(5p^2 - 3) + (2p^2 - 3p^3)$

17. $(5a + 4) - (5a + 3)$

18. $(3 - 6n^5 - 8n^4) - (-6n^4 - 3n - 8n^5)$

19. $2x(-2x - 3)$

20. $(2n + 2)(6n + 1)$

21. $(7k - 3)(k^2 - 2k + 7)$

Factor each expression.

22. $x^2 - 7x - 18$

23. $x^2 - 16x + 63$

24. $7k^2 + 9k$

25. $7x^2 - 31x - 20$

26. $2b^2 + 17b + 21$

27. $28n^4 + 16n^3 - 80n^2$

28. $3b^3 - 5b^2 + 2b$

29. $30n^2b - 87nb + 30b$

30. $9p^2r + 73pr + 70r$

31. $9x^2 + 7x - 56$

32. $63n^3 + 54n^2 - 105n - 90$

33. $56xy - 35x + 16ry - 10r$

Solve each quadratic equation.

34. $n^2 + 3n - 12 = 6$

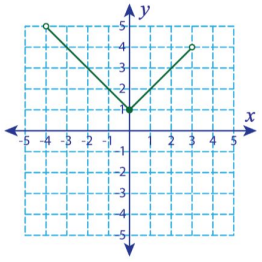
35. $6n^2 - 18n - 18 = 6$

36. $-4k^2 - 8k - 3 = -3 - 5k^2$

37. $k^2 - 31 - 2k = -6 - 3k^2 - 2k$

Write the domain, range, increasing and decreasing intervals for each graph. Write all answers in interval notation.

38.



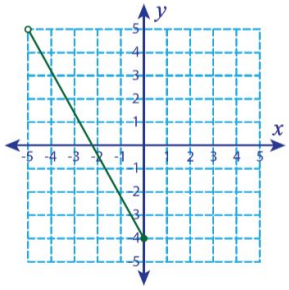
Domain: _____

Range: _____

Increasing: _____

Decreasing: _____

39.



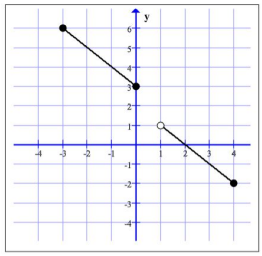
Domain: _____

Range: _____

Increasing: _____

Decreasing: _____

40.



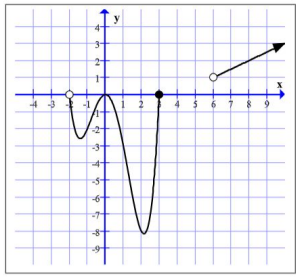
Domain: _____

Range: _____

Increasing: _____

Decreasing: _____

41.



Domain: _____

Range: _____

Increasing: _____

Decreasing: _____

Match each parent function to its graph.

42. y = x

43. $y = x^2$

44. $y = x^3$

45. $y = \sqrt{x}$

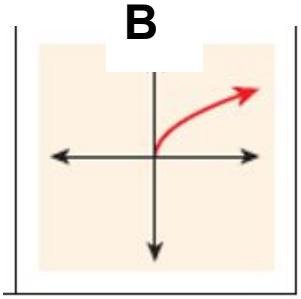
46. $y = |x|$

47. $y = \frac{1}{x}$

48. $y = 2^x$

A

B



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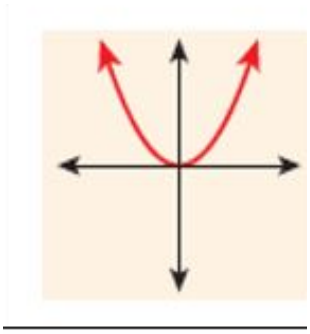

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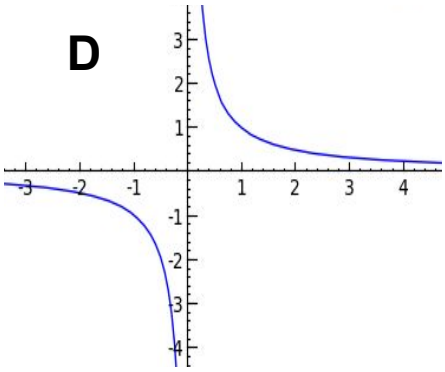

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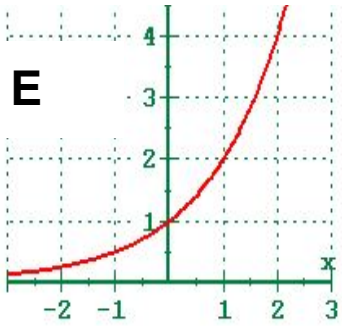

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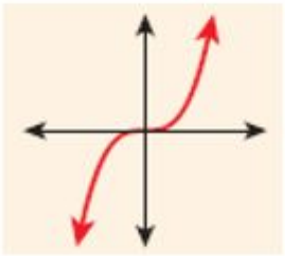

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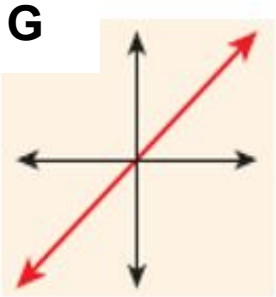
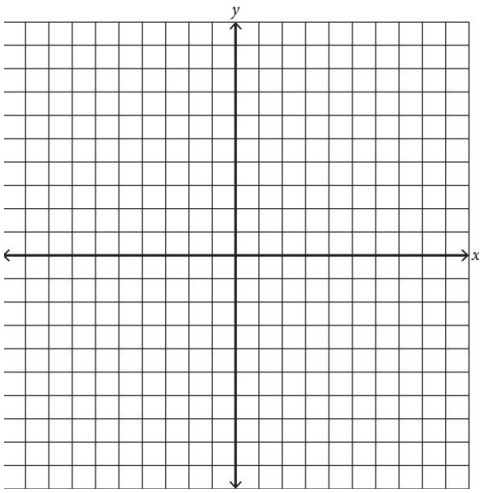


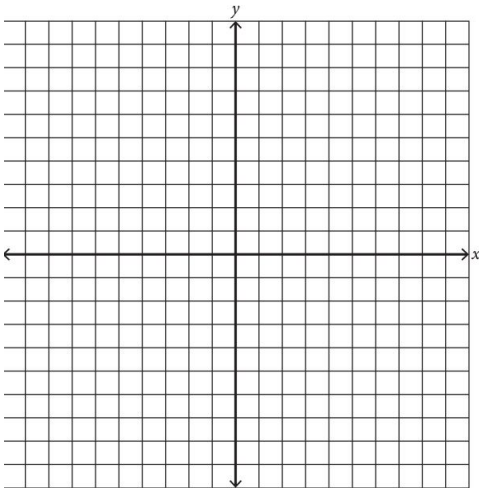
Graph each function using a table.

49 $y = \sqrt{x}$



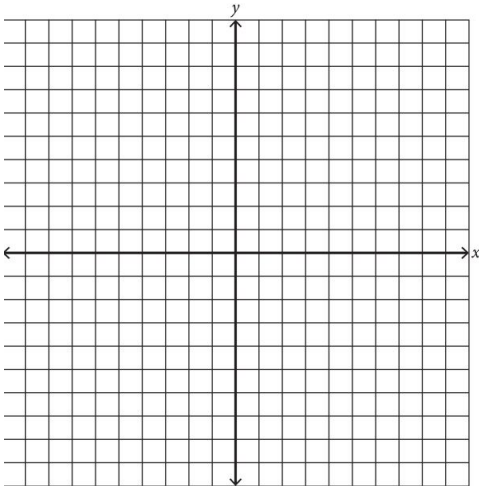
x	y

50. $y = x^2$



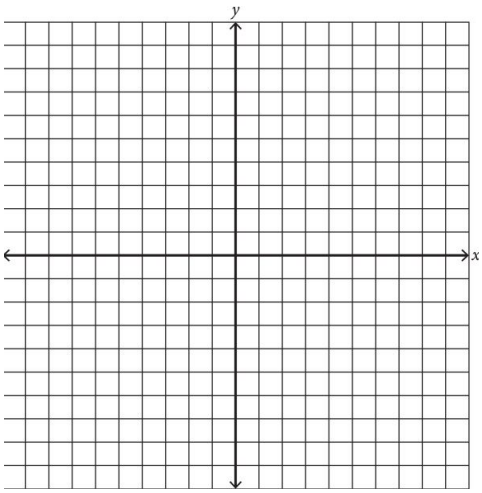
x	y

51. $y = x^3$



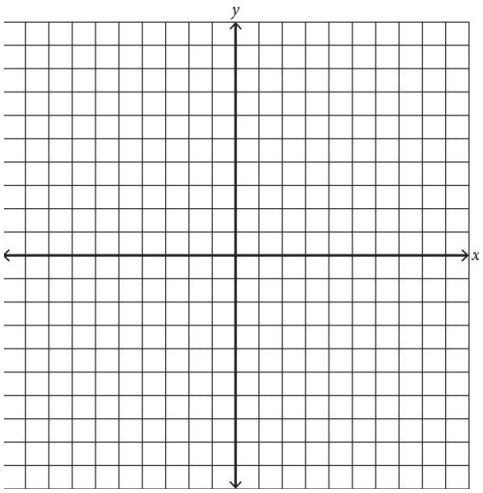
x	y

52. $y = |x|$



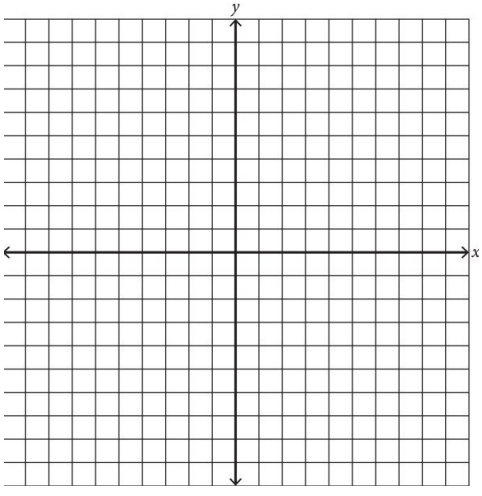
x	y

53. $y = \dfrac{1}{x}$



x	y

54. $y = 2^x$



x	y