Name: _____

Summer Assignment for Students Entering
Algebra 1 Part 2

Directions:

- **Complete this assignment WITHOUT the use of a calculator.**
- **All work must be shown to receive credit.**
- **Write answers in the space provided.**
- **Complete this assignment before the first day of class and be ready to hand it in, fully complete, on the first day of class.**

Note to the Student:

The purpose of this assignment is to review topics that are essential to your success. It will be assumed that all of the topics covered in this assignment, and in your previous math courses, have been mastered and will not need explanation as we use them in the Algebra 1 Part 2 course.

Please make sure that you complete this assignment no earlier than a month before school starts. You want to make sure to give yourself time to identify and relearn concepts you have difficulty with but you don't want to do it too early in the summer that you forget the material.

This assignment will have some weight in your first quarter grade, to be determined by the teacher of your class.

We hope you have a great summer and look forward to seeing you in the fall!

The Birch Math Department

Honor Code Upheld

Signature: _____

I. Evaluating Expressions

Evaluate the following expressions when x = 5 , y = -4 , and z = 6

1. $3x$

2. $y + 4$

3. $2x^2 + 3$

4. $\left|5z - 6\right|$

5. $2x + 3y - z$

6. $5z + (y - x)$

II.   Solve the following equations:

7. $3x + 2 = -2x + 7$

8. $\frac{1}{2}(2x + 4) = 16$

9. $5(x - 3) + 5 = -50$

10. $|x + 3| = 10$

11. $\frac{x}{3} - 2 = -1$

III. Express the following verbal sentences as algebraic equations and solve
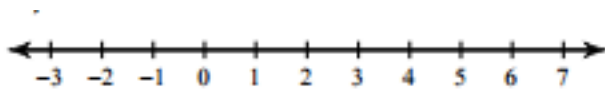
12. Twice a number decreased by 15 is equal to -27

13. Seven less than a number is equal to 5
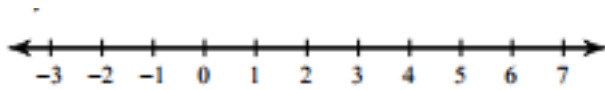
14. The sum of a number and 8 is 2

15. 3 less than 5 times a number is 22

III.   Solve the following inequalities and graph on a number line
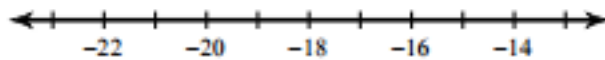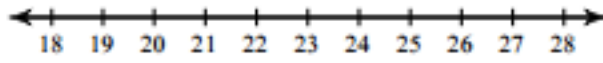
16.   7x – 1 > 20

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◄──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──►
   -3  -2  -1   0   1   2   3   4   5   6   7
```
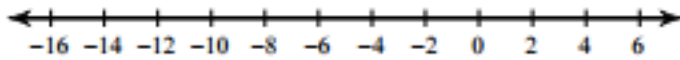
17.   -11x – 4 < -15

```
◄──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──►
   -3  -2  -1   0   1   2   3   4   5   6   7
```

18.   12(x + 9) ≤ -132

```
◄──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──►
     -22      -20      -18      -16      -14
```

19. $4 > 1 + \dfrac{x}{7}$

```
←--+--+--+--+--+--+--+--+--+--+--+→
   18  19  20  21  22  23  24  25  26  27  28
```

20. $|x + 5| < 9$

```
←--+--+--+--+--+--+--+--+--+--+--+→
  -16 -14 -12 -10  -8  -6  -4  -2   0   2   4   6
```

21. $|7x + 4| \geq 74$

```
←--+--+--+--+--+--+--+--+--+--+--+--+--+--+→
   -16    -12    -8    -4    0    4    8    12
```

22. $x - 2 < -8$ or $\dfrac{x}{2} > 3$

```
←+—+—+—+—+—+—+—+—+—+—+—→
 -12 -10 -8  -6  -4  -2  0   2   4   6   8
```

23. $-1 < 9 + x < 17$

```
←+—+—+—+—+—+—+—+—+—+—+—→
 -12 -10 -8  -6  -4  -2  0   2   4   6   8
```
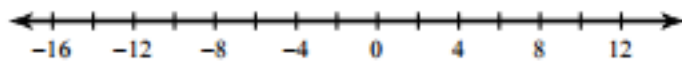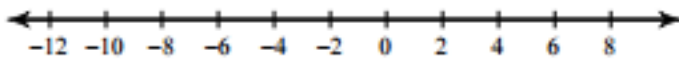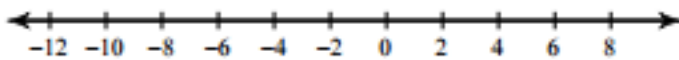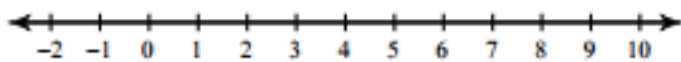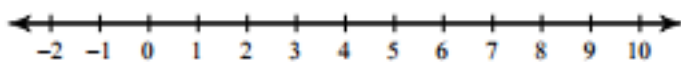
IV.   Write the following verbal expressions as inequalities. Then, graph.

24. You can invite at most 8 people to your birthday party

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←+—+—+—+—+—+—+—+—+—+—+—+—+→
 -2  -1  0   1   2   3   4   5   6   7   8   9   10
```

25. The Yankees need to win at least 6 more games to make it to the playoffs

```
←+—+—+—+—+—+—+—+—+—+—+—+—+→
 -2  -1  0   1   2   3   4   5   6   7   8   9   10
```
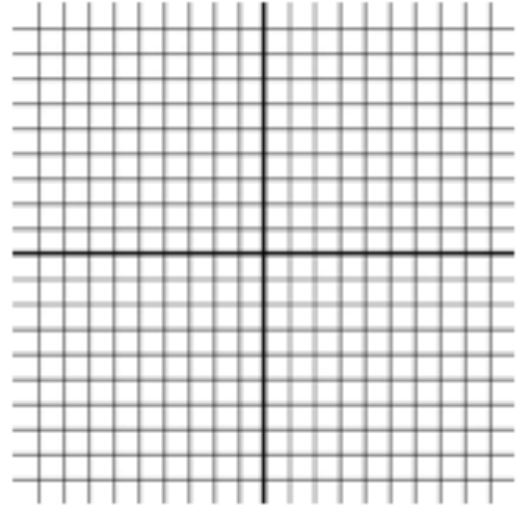
V. Graphing

In # 26 and 27, graph the linear equations by making a table of values

26. $y = 2x - 3$

x	y = 2x – 3	y	(x,y)

27. $y = -3x + 1$

x	y = -3x + 1	y	(x,y)
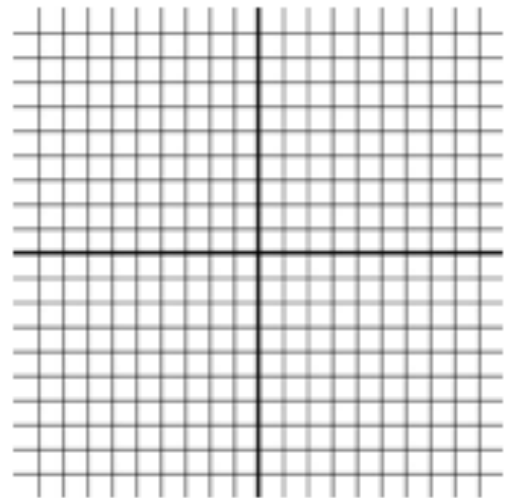
28. The equation of a line in slope-intercept form is: _____

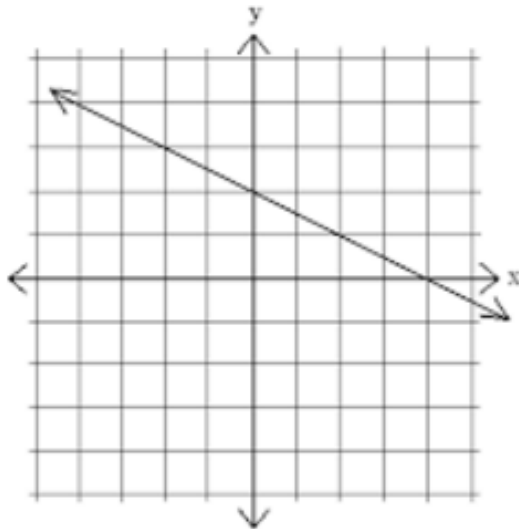29. Put the following equation into slope-intercept form. Then find the slope and the y-intercept.
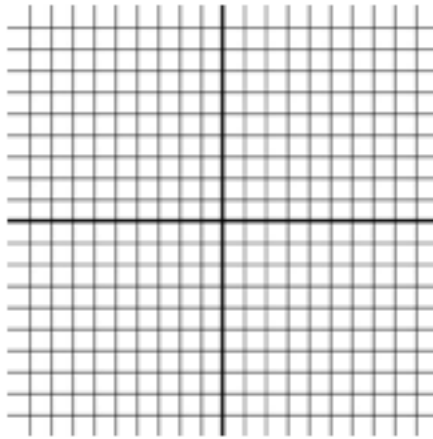
2x – 3y = 12

m =

b =

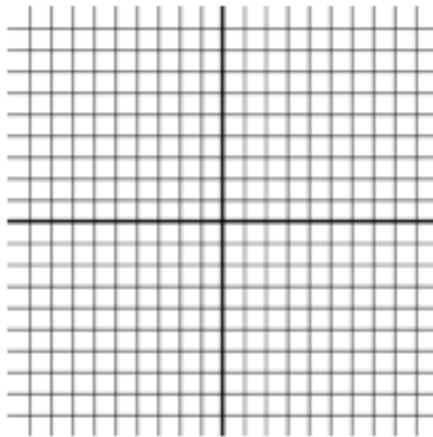30. Write the equation of a line in slope-intercept form that has a slope of $\frac{1}{3}$ and a y-intercept of 4

31. Write the equation of the line shown below:

32. Graph the equation: y = -1
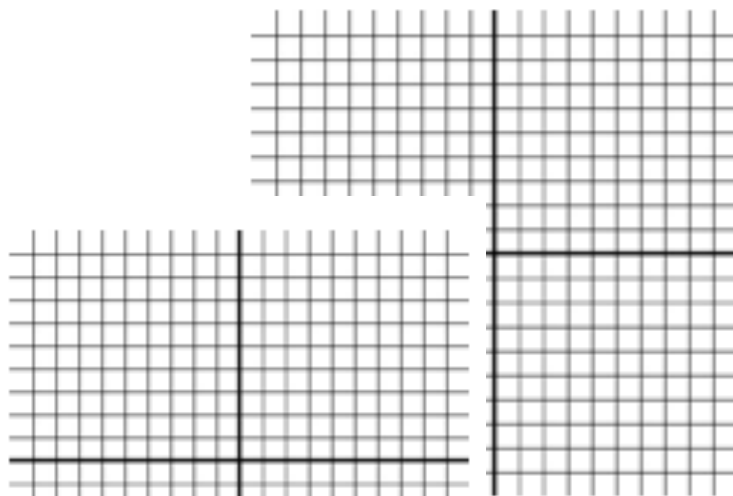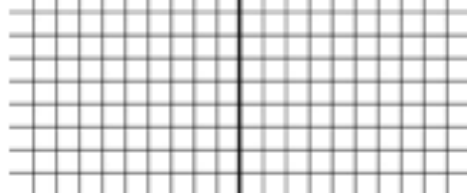
33. Graph the equation: x = 5

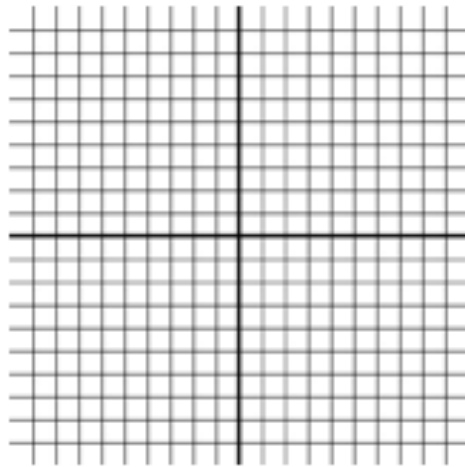**In # 34 – 36, graph the equation by finding the slope and the y-intercept**

34. y = $\frac{1}{2}x - 5$

35. y = -x - 2

36. 3x + 3y = 6

37. Find the slope of the line that passes between the points (3, -2) and (1, 4)

38. Find the slope of the line that passes between the points (0,0) and (4,8)

39. Find the slope of the line that passes between the points (1,7) and (1, -9)

40. The equation of a line in point slope form is: _____

41. Write the equation of the line that has a slope of 2 and passes through the point (1,7)

42. Write the equation of the line that passes through the points (-1,1) and (3,3)

43. Write the equation of the line that is **parallel** to y = 3x + 1 and passes through the point (2,2)

44. Write the equation of the line that is **perpendicular** to y = 2x and passes through the point (4, -2)

45. The equation of a line in standard form is: _____

46. Write the equation of a line that passes through the points (1,1) and (2,4) in:

a.   Point- Slope Form:

b.   Slope-Intercept Form:

c.   Standard Form:

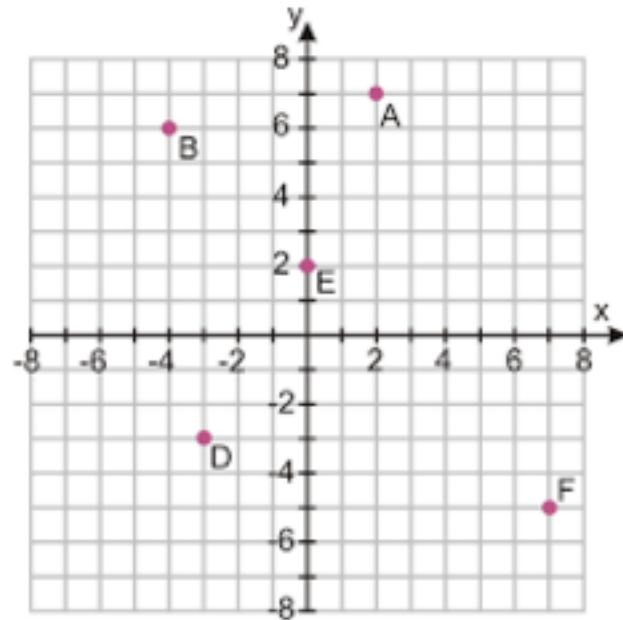47. Write the coordinates of the points shown in the coordinate plane below:

A:

B:

D:

E:

F:

VI. Percents
48. What is 30% of 150?

49. If you take a test with 50 questions and get 45 questions correct, what is your score as a percent?

50. 20 is 50% of what number?