



# Lawrence High School's Algebra II 2019 **Optional** Summer Assignment





**Directions:** This is an OPTIONAL Summer Assignment that will help you to be best prepared for your scheduled math class in September.

- Complete ALL problems.
- Show all your neat and organized work for every problem on a separate piece of paper. Put your name on each additional work page.
- You may choose to turn this into your teacher in the first full week of school for consideration for extra credit.

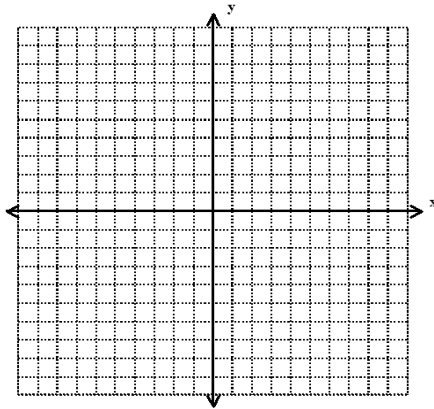
**Resources:** You also have your Algebra I notes and handouts to reference if you have them. For additional examples and support you can reference any of the sites listed below and search the skill/concept.

- KhanAcademy.com
- You Tube.com or Teacher Tube.com
- MathIsPower4u.com
- IXL.com

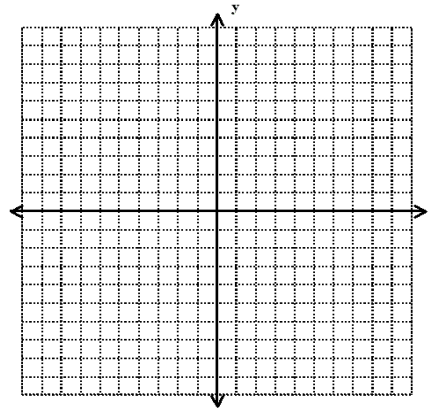


**SHOW ALL WORK!** Graph the following linear equations.

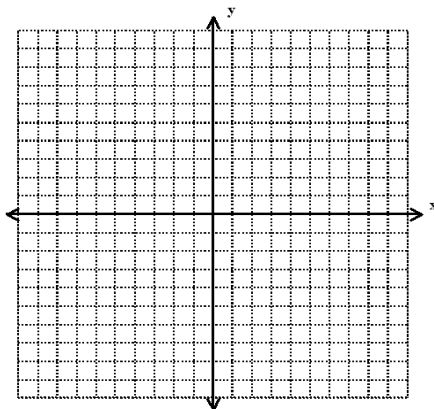
1.  $y = \frac{1}{2}x - 3$



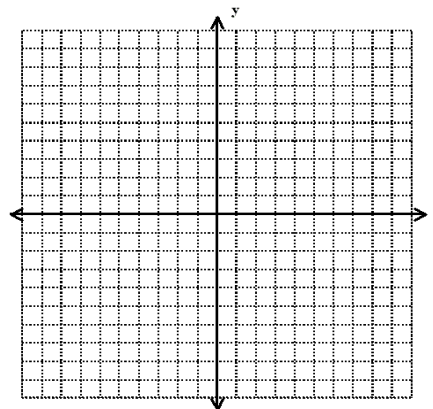
2.  $2x + 3y = 6$



3.  $x = 3$

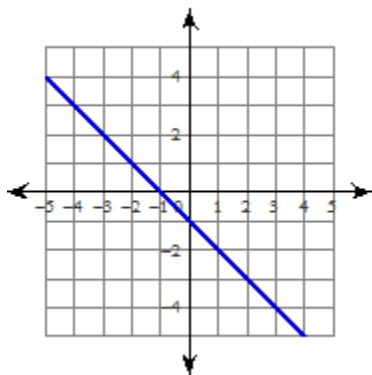


4.  $y = -1$

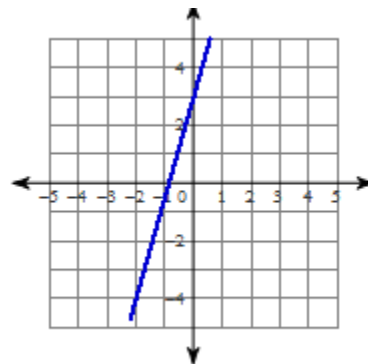


Write the linear equation for each graph in slope-intercept form.

5.



6.





**Determine the linear equation, in slope intercept form, given the information:**

7. Line that goes through the point (2,1) and has a slope of 0
8. Line that goes through the point (1,5) and the slope is undefined
9. line that goes through these points (3, 2) and (-1, 1)
10. Line that goes through the point (4, 5) and is perpendicular to the line  $y = 4x - 2$
11. line that has a slope of 2 and goes through the origin
12. Line that goes through the point (-5, -2) and is parallel to the line  $y = -\frac{3}{4}x + 2$

**Write a linear equation for each word problem, then solve.**

13. Bob is taking a taxi. The initial fee is \$2 and the taxi driver charges an additional \$0.50 a mile. How much will it cost to travel 20 miles?
14. A construction company charges \$15 per hour for debris removal, plus a one-time fee for the use of a trash dumpster. The total fee for 9 hours of service is \$195. How much is their service fee

**Perform the operations.**

15.  $(6x + 5) - (8x + 15)$
16.  $(2x^2 + 1) - (x^2 - 2x + 1)$
17.  $-4(2x + 1)$
18.  $(x + 3)(x - 4)$
19.  $(7x + 1)(4x - 3)$
20.  $(2x - 5y)^2$



Factor the following expressions.

21.  $4x + 16$

22.  $x^3 - x^2$

23.  $x^2 + x - 2$

24.  $x^2 + 5x + 6$

25.  $x^2 - x - 6$

26.  $3x^2 - 5x + 2$

27.  $2x^2 - x - 1$

28.  $5x^2 + 26x + 5$

29.  $2x^2 - x - 21$

- Make sure you know the perfect square for numbers 1 through 12 and 15. Know the perfect cubes 1 through 5.

Simplify or rationalize the following radicals.

30.  $\sqrt{81}$

31.  $\sqrt{8}$

32.  $\sqrt{32}$

33.  $\frac{6}{\sqrt{3}}$

Solve the equations.

34.  $3x - 5 = 2x + 7$

35.  $4y + 2 - 5y = 7 - 6y$

36.  $\frac{5x - 4}{5x + 4} = \frac{2}{3}$

37.  $\frac{3}{4}x + \frac{1}{8} = \frac{3}{4}(x + 8)$

38.  $9(8d - 5) + 13 = 12d - 2$

Solve the inequality and graph on a number line.

39.  $-7x \geq x - 24$

40.  $4(x + 1) < 2x + 3$

