Alg 1 - Semester 1 Review Name: _____

MODULE 1: A.SSE.1.a –Part 1, A.SSE.1.b
Order of Ops, Combine Like terms, Distribute, Evaluate, Fractions. Vocab such as terms, coefficients, factors.

#1-3, Simplify each with the order of operations. ***(Round answers to the nearest second decimal place)***

1. $3-2\cdot 3^2+4$ **2.** $[\,8+(2-6)^2]\div 4$ **3.** $\dfrac{6-9}{3+1}$

#4-6, Evaluate each expression for the given value (s).

4. *3(x+4) - 1,* for x = -2 **5.** *2x + y - z,* when x= -2, y = 5 and z = -6. **6.** $|x+3|+7$, for x = -20

#7-10, Simplify each *expression.*

7. 16x - 20x **8.** -2(3w – 4y) **9.** -2y + 3 – 8 - 3y + y **10.** 4a - 3(3 - 5a)

MODULE 2: A.REI.1, A.REI.3, A.CED.4
Solve Equations & Inequalities (one, two, multi -step & literal)

Solve each *equation. (Round answers to the nearest second decimal place.)*

11. x - 32 = -14 **12.** 5.6 - y = 3.3 **13.** 3m - 11 = 1 **14.** 4x - 3 = 5 + 2x

15. 2(2w - 3) = 6(w +2) **16.** $\dfrac{x-1}{3}=-17$ **17.** $\dfrac{-x}{9}=-0.5$ **18.** $\dfrac{x-1}{3}=\dfrac{x+4}{5}$

19. How can you always tell if your solution is the correct one?

20. When do you switch the inequality symbol?

Solve each literal equation for the indicated variable.

21. 3x + 2y = 10; solve for y

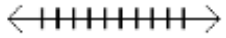
22. $\frac{2x-y}{z} = a$; solve for x

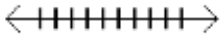
Solve each inequality and graph your solution set.

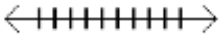
23. 3 - x > 10

24. -3≤ 2x + 5 ≤ 9

25. x+1>5 **or** 2x +3 ≤ 1







MODULE 3: A.CED.1, N.Q.2/3, N.Q.1 – Part 1
Model word problems with equations, inequalities, and percents. Unit Conversions.

Translate each into a math equation or expression.

26. The product of 5 and a number is 13.

27. Fourteen less than half a number is the same as the sum of eight and the number.

28. Five more than the quotient of eleven and a number.

29. The difference between a number, and the same number increased by one.

Write an equation which represents each situation, and solve.

30. Mrs. January bought a Dr. Pepper for $1.59 and paid $3.05 for each gallon of gas she pumped. The total she owed was $45.19. How many gallons of gas did she purchase?

31. Sending a package through the US mail cost $3.50 plus $0.25 per ounce. Sending a package through FedEx costs $4.75 plus $0.10 per ounce. At what weight will the two companies charge the same?

Convert each:

32. 88 cm = _____yards? *(2.6 cm=1 in)*

33. 35 feet per second = _____miles per hour? *(1 mile = 5280 ft)*

34. 35 is 42% of what number?

35. What percent of 250 is 18?

36. You decided to go on a diet last year & ate 75% of the amount of chocolate you normally eat. Your normal amount consumed in a year is 5 pounds of chocolate. About how many pounds did you eat last year?

37. A dinner costs $56 plus tip. If the tip rate is 20%, what is the total bill for the dinner?

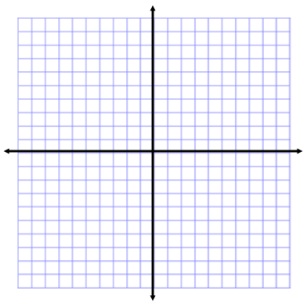
38. You want to buy a new phone. It costs $328. How much is sales tax is the tax rate is 7%?

39. On a scale map of New York city 3 inches represents 20 actual miles. Therefore, 6.4 inches would represent how many miles?

40. Jupiter's gravity is tremendous. For example, a 110 pound person would weigh 260 pounds on Jupiter. How much would someone weigh on Earth if they weighed 305 pounds on Jupiter?

41. Graph y = $|3x| - 1$ using the table of values.

x	y
-2	
-1	
0	
1	
2	



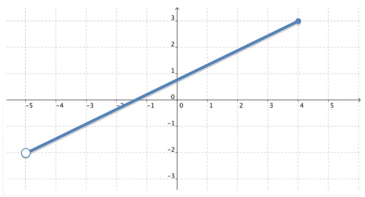
MODULE 4: F.IF.5, F.IF.1, F.IF.2, F.IF.4

Identify domain and range, Define a function, Evaluate a function f(x)

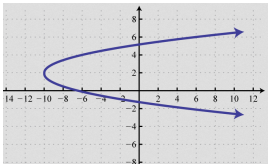
42. If *f(x) = -3x + 20,* then find *f(-2)*

Find the domain and range of each graph.

43.

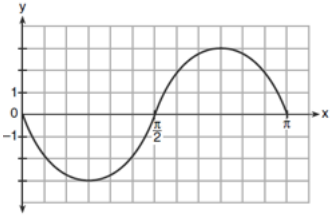


44.



Is the relationship a function? Why or Why not?

45.



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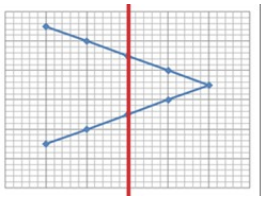


MODULE 5: F.IF.6, F.IF.7a, F.IF.9, A.CED.2, F.LE.2-Pt 1, A.REI.12
Calculate slope, graph a line or linear inequality

Determine the slope of each.

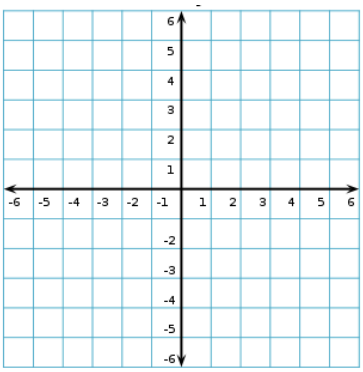
47. (3, -4) and (10, -1)

48. (4,3) and (8,3)

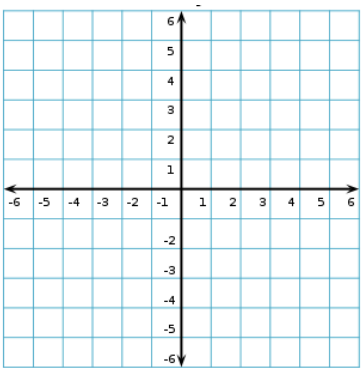
49. -x– 6y = 4

Graph each line or linear inequality.

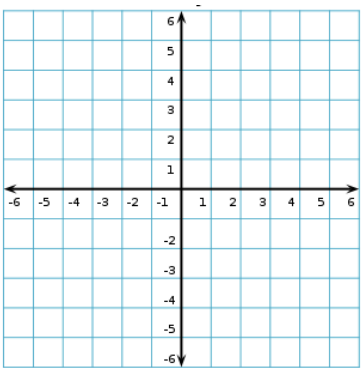
50. y = 3x - 5



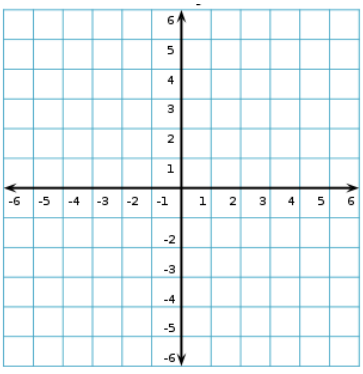
51. $y = \frac{-2}{3}x$



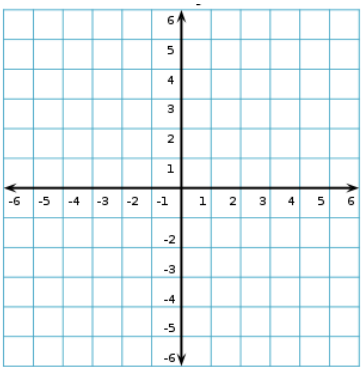
52. 3x– 2y = 12



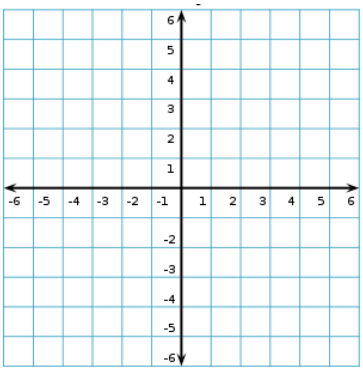
53. x = -4



54. y > -2x + 3

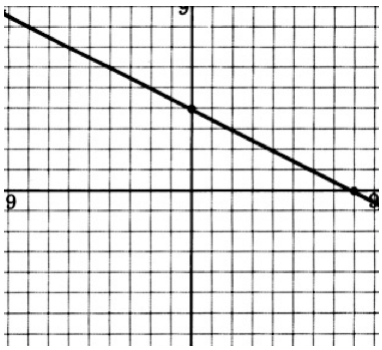


55. y ≤ 2



Write the equation of the line for each set situation.

56.



57. Slope is $\frac{1}{4}$ and goes through (-8, 15)

58. Goes through (3,4) and (4, 6)

MODULE 6: A.SSE.1a-pt2, N.RN.2
Laws of Exponents

Simplify each

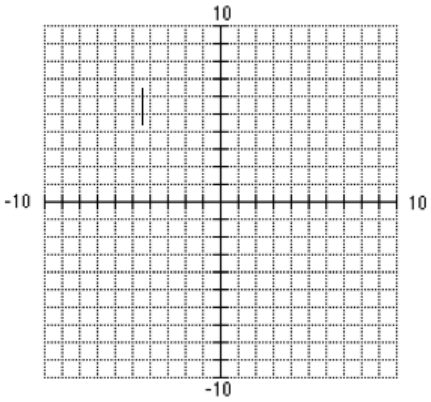
59. $\left(3a^2\right)^4$ **60.** $4bc^3 \bullet 5b^2c^2$ **61.** $\dfrac{3d^2d^0}{9d^5}$ **62.** $\left(10e\right)^0$

63. $5f^{-3}g^4$ **64.** $\dfrac{5h^{-3}j^{-7}}{h^5j^{-4}}$ **65.** $\left(\dfrac{4k^2m}{k^3}\right)^3$ **66.** $\left(10y^6\right)(7y)$

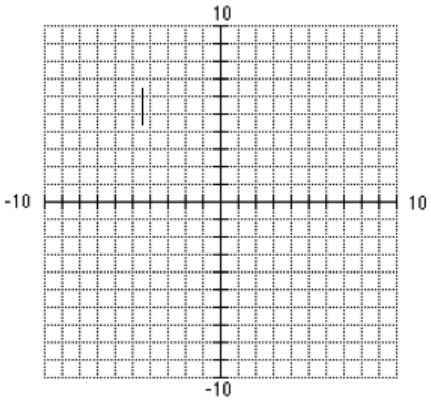
MODULE 7: F.IF.7e, F.IF.8b, F.IF.9-pt 2, F.LE.2-pt 2
Exponential Graphs, Growth/Decay, Writing Equations of exp. curves

Graph each. Clearly mark 5 points on your curve and write the equation of the asymptote:

67. $y = 2\left(\dfrac{1}{3}\right)^x$



68. y = 4(2)x



69. In 2012 the population of white-footed mice in Ontario, Canada was 412 & increasing 35.2% per year.

Write the equation _____. What will the population be in 4 years?

70. The value of a tractor depreciates 14% per year once you buy it.

If it is worth $13,000 now, what is the equation? _____ What will it be worth in 5 years?

71. An exponential equation goes through the points (3,64) and (5, 1024). Determine the equation.

72. Vocab review: Define each of the following:

Order of Operations	Integer	Term	Coefficient
Reciprocal	Solve	Simplify	Equation
Expression	Function	Domain	Range
Slope	Standard form	Slope-Intercept Form	Base
Exponent	Growth	Decay	Exponential Form

#73 a-f. Use the following situation to answer the questions.

You are walking home from school. In 4 minutes you have gone 440 ft and after 9 minutes it ascends 990 feet. Assume a constant rate of change.

a. Express the given information as two ordered pairs (minutes, feet). **_____ and _____**

b. Find an equation that expresses how far you've walked in terms of the minutes since you left school.

c. Identify the ***y-intercept*** and explain what it represents in the context of the problem.

d. Identify the ***slope*** and explain what it represents in the context of the problem.

e. Use your equation to predict how far you've walked after 30 minutes.

f. Use your equation to predict how long it will take for you to reach 10,000 feet.