Pre-algebra skills needed for Algebra I

- Use the order of operations to simplify expression.
- Fluently work with all four operations and fractions (math 7 skill)
- Convert units
- Solve multiple step equations using inverse operations
- Evaluate expressions (substitution with positive and negative numbers)
- Solving Linear equations/inequalities which require the use of distributive property, combining like terms, simplification and completing calculations involving fractions and decimals.
- Graph and name points on the coordinate plane.
- Given a two variable function,
  - Create a table of values and graph the equation
  - Get the equation in y=mx+b form so you can quickly graph.
  - Be able to write the equation of a line from a graph
- Given two points,
  - Be able to find the slope of a line that connects them,
  - Be able to write the equation of a line goes through both points.
- Given an equation of a line,
  - Write the equation of a line parallel to the given line
  - Write the equation of a line perpendicular to the given line
- Multiplying monomials

PRACTICE PROBLEMS

Using the order of operations to simplify expressions

1. $54 \div 3 - 3 \times 2$

2. $8 \div 2(4) - 4^2$

3. $2(4-7)^2 - 4 \div 2$

4. $-3^2 - 7 \div 2 + 5$

5. $(-7) - (-8) \div 2^2 + 5$

6. $(-3)^3 - 4 \div 2(2) - 10$

7. $7 - 4(3-8) - (-2+9)$

8. $8 \div 4(2) - (6-9)^2$

Working with all four operations and fractions (math 7 skill)

9. $\frac{3}{5}+\frac{2}{3}\times\frac{3}{5}$

10. $\frac{3}{5}+\frac{2}{3}\div\frac{3}{5}$

11. $\frac{1}{3}+\frac{1}{4}-\frac{1}{6}$

12. $\frac{1}{3}\times 4-\frac{1}{6}$

13. $2\frac{1}{3}+1\frac{1}{4}-3\frac{1}{6}$

14. $(-\frac{1}{3})^{2}\div\frac{1}{3}$

Converting units.

15. 16 ft = _____ yd _____ ft

16. 108 in = _____ ft _____ in

17. 16 in =_____ ft _____ in

18. 86 in = _____ ft _____ in

19. 1.5 hr = _____ min

20. 72 min = _____ hr _____ min

21. 90 min = _____ hr

22. 2.5 hr = _____ hr _____ min

Solve multiple step equations using inverse operations

23. $3x + 8x = -11$

24. $-4x - 9 = 13$

25. $-7t - 6t = 0$

26. $-y + 3 + 8y = 17$

27. $b - (5 - 3b) = 19$

28. $2(t + 3) = 3(7 - t)$

29. $4 - \frac{2}{3}t = 5$

30. $h - \frac{2}{3}h = 6$

Evaluate the expressions for x = 2 , y = – 3

31. $3x + 8y$

32. $x^2 - y$

33. $-x^2 + y$

34. $5 + x - y^2$

Solving linear inequalities

35. $6x + 2 > 8$

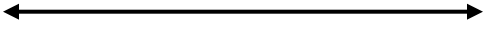
36. $-4x + 3 \leq -9$

37. $5(x + 2) < 0$

38. $2(x + 1) < \frac{1}{3}$

39. $\frac{2}{3}(3 - x) < 1$

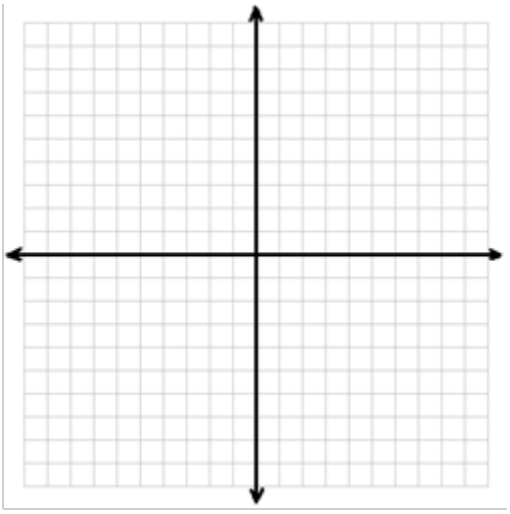
40. $0.2x + 2 < -0.6$



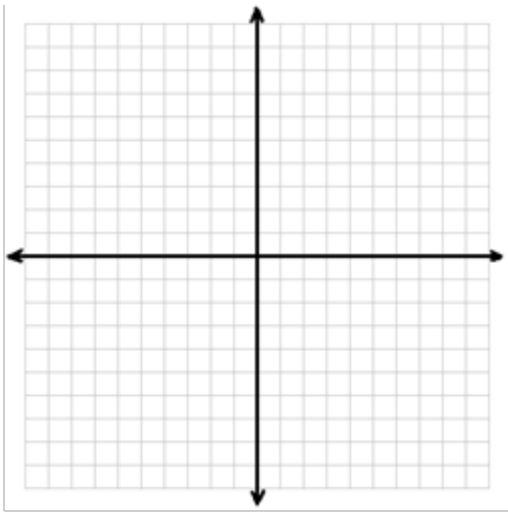
Graphing from tables of values

41) *Create a table for each and graph the function*

a) $y = 2x - 1$



b) $y + 3x = 2$



Writing the equation of a line.

42.) a. Find the slope of a line that crosses through G(-4, 5) and H(-2, -1).

b. Write the equation of a line in part (a).

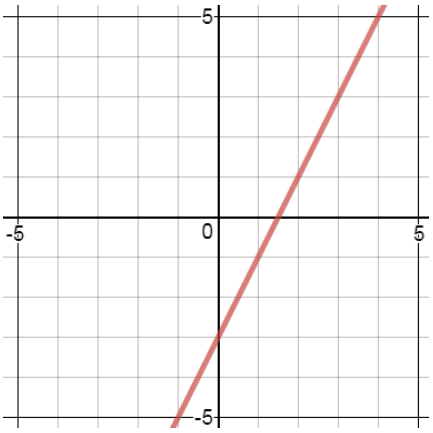
c. Write an equation of a line parallel to the line in part (a).

d. Write an equation of a line perpendicular to the line in part (a).

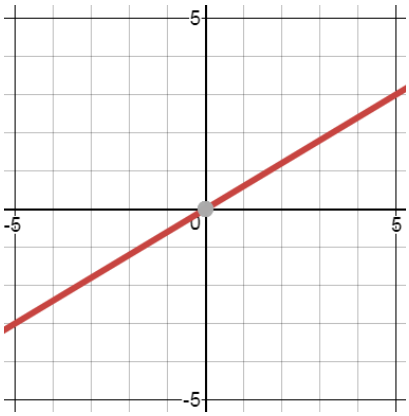
43. Write an equation of a line that crosses through F(5, 7) and M(-3, -1).

44. Write an equation to the given lines,

a)



b)



45) Simplify the expressions.

a) $(3x^2)(-4x^3)$

b) $(3x^5)^2$

c) $4x(5x + 4)$