Name _____ Homeroom _____

8th Grade Algebra Summer Assignment

The following summer assignment is to be used as a study tool to prepare you for the skills necessary for success in Algebra 1 Honors (for incoming 8th grade students). **This is due, and will be checked, on the first day of school.** The following skills have been taught in the 6th and 7th grade pinnacle program and will be assessed as your first test grade. The first test will be given within the first few weeks of school. **Do not use a calculator,** as you will not be permitted to use one on the test. If you are struggling on certain skills, you can use resources such as **www.IXL.com/math**, **www.khanacademy.org/math/pre-algebra**, **www.khanacademy.org/math/cc-eighth-grade-math**, **www.coolmath.com/prealgebra**, **www.coolmath.com/algebra** and more can be found through an online search. Show all work on this page including your final answer. In addition, place your final answers on the answer page attached.

Basic Math Facts

Solve the following basic math operations. If your answer is a fraction, leave your answer in simplified **improper fraction** form. Do not convert to decimal or mixed number.

1. $-\frac{1}{6}+\frac{7}{12}$

2. $2\frac{3}{5}\bullet\left(-\frac{4}{3}\right)$

3. $\frac{4}{15}+\frac{5}{9}$

4. $-\frac{7}{8}\div\frac{3}{4}$

5. $\frac{13}{18}\bullet\frac{9}{25}$

6. $-\frac{7}{12}-\frac{1}{8}$

7. $8.37(-5.3)$

8. $0.95-3.49$

9. $-24\div 0$

10. $5\sqrt{4}-\sqrt{49}$

11. $-4\sqrt{100}+10\sqrt{16}$

12. $(4-2)^3-2(3+1)$

13. $0\div[15+3(6\div 2)-4^2]$

- **You will be expected to know 1-25 squared and the square roots of perfect squares 1-625**
- **There will be no review of integer operations. You will be expected to fluently add/subtract/multiply/divide positive and negative integers, fractions, and decimals**

Solve the equation for the variable. (solving algebraic equations in one variable, multistep)

14. $-h + 4 = -h + 9$

15. $\frac{4}{3}w - 12 = \frac{2}{3}w$

16. $4(3q - 2) = 16q$

17. $\frac{4}{3} = \frac{8}{x}$

18. $t + 3t - 7 = 4t - 7$

19. $x + 2\frac{4}{5} = 3\frac{1}{6}$

20. $\frac{1}{4}(n - 6) = \frac{1}{4}n - \frac{3}{2}$

21. $2d + \frac{1}{6} = 6\left(\frac{1}{3}d + 1\right)$

22. $\frac{5}{6} = \frac{7n + 9}{9}$

23. $\frac{5}{r-9} = \frac{8}{r+5}$

24. $-(-4x - 5) + 7 = 4(-x + 7)$

25) $2x - 8(x + 1) = 2(3x - 2) + 3x$

Solve the inequality. (Solving algebraic inequalities in one variable)

26. $4z - 3 \geq -1$

27. $6 > 3(t + 2)$

Solve the inequality. Graph the solution.

28. $2 < -\frac{y}{5}$

29. $3(x + 4) \geq 12$

Solve the equation for *y*. (Solving literal equations **or** putting equations in slope intercept form)

30. $\frac{2}{5}x + y = 3$

31. $8 = 3x + 6y$

32. $1.5x - 3y = 6$

33. $\frac{1}{4}y - 2x = 5$

34. $\frac{y+4}{g} = 6$

35. The formula for profit is $P = R - C$.

a. Solve the formula for R.

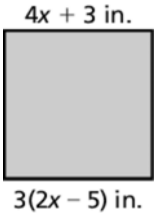
b. Use the new formula to find the value of R given that $P = \$350$ and $C = \$520$.

36. Gretchen lives in Florida, where the current temperature is 69°F and rising at a rate of 2°F per hour. She is talking on the phone to her friend in Indiana where the temperature is now 84°F and falling at a rate of 3°F per hour.

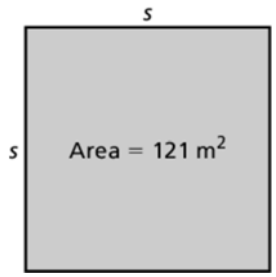
a) If the temperatures continue changing at the same rates, how many hours would Gretchen and her friend have to talk before the temperatures become equal?

b) What would that temperature be?

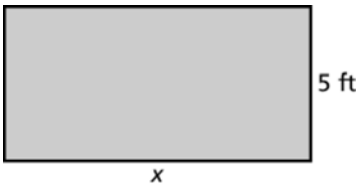
37. Find the perimeter of the square.



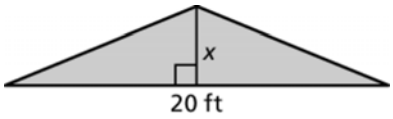
38. Find the side length of the square.



39. The perimeter is more than 15 feet. Solve for x

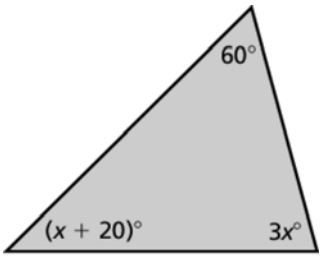


40. The area is no more than 40 square feet. Solve for x



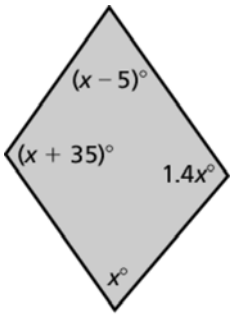
Find the value of *x*. Then find the angle measures of the polygon.

41.



Sum of angle measures: 180°

42.

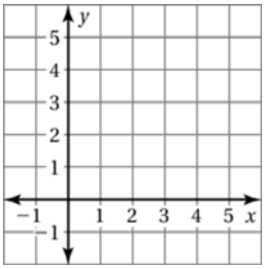


Sum of angle measures: 360°

Complete the table for each linear equation. Plot the solution points and draw a line *exactly* through the two points. Identify a different solution point on the line.

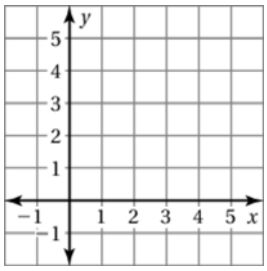
43. $y = \frac{1}{2}x$

x	y



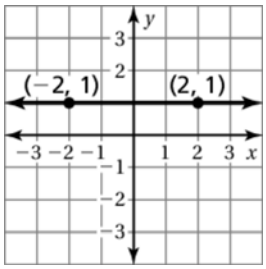
44. $y = x + 3$

x	y



Find the slope of the line.

45.



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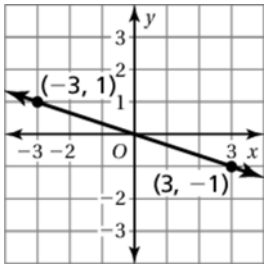

Find the slope of the line that goes through the two points.

47. $(-3, -2), (0, 0)$

48. $(0, 3), (2, 3)$

49. $(-4, -3), (-2, 2)$

50. Which is steeper, a slide that rises 3 feet for every 2 feet of run, or a sliding pole that rises 5 feet for every 3 feet of run? Explain.

Find the slope and the *y*-intercept of the graph of the linear equation.

51. $y = 3x - 6$

52. $y + 5 = -\frac{3}{4}x$

53. $y = \frac{7}{9}x - 3\frac{1}{3}$

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8th Grade Algebra Summer Assignment – Answer Sheet

1. _____
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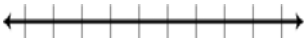
29. _____ 
30. _____
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32. _____
33. _____
34. _____
35. a) _____
    b) _____
36. a) _____
    b) _____
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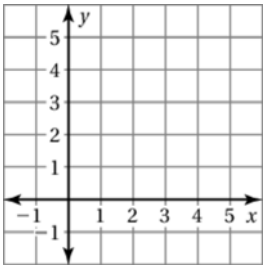
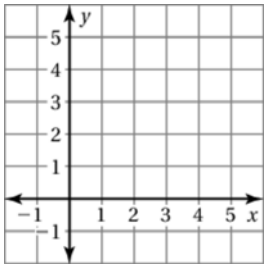
42. _____
43. _____



44. _____



45. _____
46. _____
47. _____
48. _____
49. _____
50. _____
51. Slope ____ y-int _____
52. Slope ____ y-int _____
53. Slope ____ y-int ____