



**CEDAR GROVE HIGH SCHOOL  
MATHEMATICS DEPARTMENT**



***SUMMER SKILLS  
PACKET***

**ALGEBRA 1**

This packet is intended for students who are ENTERING any level of Algebra in September and took “Grade 8 Math”

Any questions or concerns may be directed to our Math/Science Supervisor Janine Barboza at [barboza.janine@cgschools.org](mailto:barboza.janine@cgschools.org).

Welcome to Algebra I!

The following websites will be useful to you in completing the assignment and preparing to learn new material come September.

[www.khanacademy.com](http://www.khanacademy.com)

[www.ixl.com](http://www.ixl.com)

[www.tenmarks.com](http://www.tenmarks.com)

[www.purplemath.com/modules/index.htm](http://www.purplemath.com/modules/index.htm)

[www.algebrahelp.com/](http://www.algebrahelp.com/)

[www.math.com/homeworkhelp/Algebra.html](http://www.math.com/homeworkhelp/Algebra.html)

[www.edhelper.com/algebra.htm](http://www.edhelper.com/algebra.htm)

[www.coolmath.com/algebra/](http://www.coolmath.com/algebra/)

**YOU SHOULD NOT USE A CALCULATOR FOR ANY PROBLEM!!!!**

However, you will need a TI-84 (TI-84 Plus CE, TI-84 Plus Silver Edition, TI-84 Plus C Silver Edition, TI-84 Plus, ...) calculator for use during the school year (“new” from STAPLES, “hand-me-down” from sibling, bought “used” on EBAY).

Also, by the first week of school you will absolutely need:

- A three subject notebook OR binder with plenty of lined paper
- Pencils with erasers
- A small pencil sharpener
- A covering for your textbook

Before you begin Algebra, you will be expected to have mastered the following topics

- ✓ Comparing and ordering on a number line
- ✓ Prime Factorization
- ✓ Changing from mixed and improper fractions
- ✓ Fractions as Decimals and Percents
- ✓ Mean/Median/Mode
- ✓ Plotting on a Coordinate Plane
- ✓ Order of Operations
- ✓ Inequalities
- ✓ Evaluating expressions
- ✓ Solving for a variable

You should know how to do all of the attached work with **NO CALCULATOR**.

Please practice the skill of **NOT** using a calculator to solve.

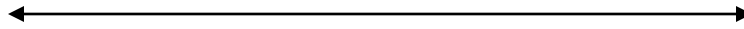
**Read directions carefully.**

Put the following list of numbers on the number line from least to greatest.

1. -20.01, -20.10, -20.35, -23.5



2.  $\frac{5}{8}$ ,  $\frac{8}{5}$ ,  $\frac{2}{7}$ ,  $\frac{-1}{4}$ ,  $\frac{-1}{5}$



Find the prime factors for the following numbers.

3. 24

4. 70

Change the mixed numbers to improper fractions and the improper fractions to mixed numbers. Reduce/simplify the fraction if necessary. No decimals!

5.  $\frac{15}{7}$

6.  $\frac{51}{20}$

7.  $17\frac{4}{9}$

8.  $2\frac{6}{7}$

**Add fractions. Reduce/simplify the fraction if necessary. Show work.**

**No decimals.**

9.  $\frac{2}{8} + \frac{3}{7}$

10.  $\frac{1}{9} + \frac{1}{8}$

**Subtract fractions. Reduce/simplify the fraction if necessary. Show work.**

**No decimals.**

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

12.  $1\frac{1}{2} - \frac{3}{4}$

13.  $\frac{5}{9} - \frac{1}{3}$

**Multiply fractions. Reduce/simplify if necessary. Show work. No decimals.**

14.  $\frac{5}{100} \cdot \frac{3}{4}$

15.  $1\frac{2}{3} \cdot \frac{5}{6}$

16.  $8\frac{1}{2} \cdot 2\frac{1}{2}$

**Divide fractions. Reduce/simplify if necessary. Show work. No decimals.**

17.  $\frac{1}{8} \div \frac{3}{4}$

18.  $\frac{1}{10} \div 3$

19.  $6 \div \frac{1}{2}$

**Change the fraction below to decimal AND percent. No rounding.**

|                   | Decimal | Percent |
|-------------------|---------|---------|
| 20. $\frac{3}{5}$ | _____   | _____   |

|                   |       |       |
|-------------------|-------|-------|
| 21. $\frac{3}{8}$ | _____ | _____ |
|-------------------|-------|-------|

|                   |       |       |
|-------------------|-------|-------|
| 22. $\frac{5}{4}$ | _____ | _____ |
|-------------------|-------|-------|

**Find the mean, median and mode.**

|     |                                    | Mean  | Median | Mode  |
|-----|------------------------------------|-------|--------|-------|
| 23. | 1, 32, 7, 9, 7, 1, 15, 16, 4, 9, 1 | _____ | _____  | _____ |
| 24. | 5, 5, 5, 6, 6, 6, 6, 7, 7, 7       | _____ | _____  | _____ |
| 25. | 100, 4, 2, 20, 32                  | _____ | _____  | _____ |

**Plot (AND LABEL) the following points on a coordinate plane.**

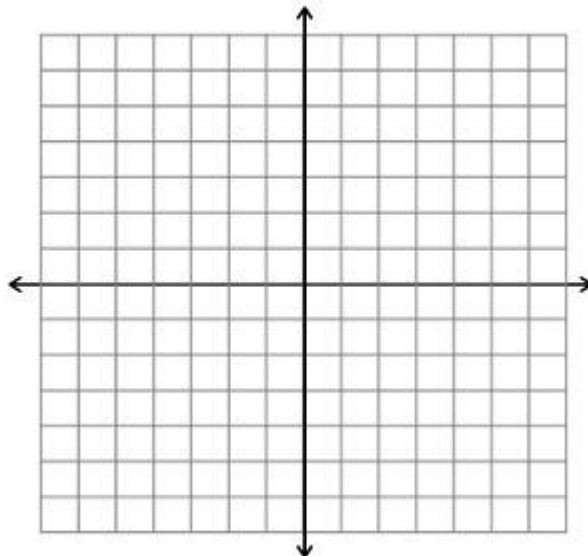
26. (-4, -3)

27. (2, -7)

28. (-5, 1)

29. (0, 2)

30. (5, 0)



Use order of operations to solve.

31.  $1 + 3 \cdot 4 - 3^2$

32.  $8 - 12 \div 3 + 7$

33.  $6 \cdot 2^2 - 4$

34.  $3^3 - 7 \cdot 2^1$

35.  $\frac{(2^3 - 1)}{10 \cdot 2 - 4 \cdot 2}$

Put  $>$ ,  $<$ , or  $=$  in the appropriate box.

36.  $.0250$    $.050$

37.  $\frac{1}{3}$    $\frac{1}{4}$

38.  $.01011$    $.01100$

39.  $16.123$    $16.12$

40.  $\frac{5}{7}$    $\frac{7}{8}$



**Evaluate the expression. NO DECIMALS.**

41.  $y - \frac{1}{2}$  when  $y = \frac{5}{6}$

42.  $(\frac{3}{4})^2 =$

**Solve the equation. (Get x alone.)**

43.  $\frac{x}{2} + 5 = 11$

44.  $4x - 4 = 16$

45.  $7x - 4x = 21$

46.  $3x + 7 = 19$

47.  $\frac{x}{2} - 9 = 11$

48.  $3 + 4(x + 5) = 31$

49.  $7x - (6 - 2x) = 12$

50.  $3(x - 5) = 10$