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SOUTHFIELD CHRISTIAN SCHOOL

# SUMMER MATHEMATICS REVIEW PROJECT

# FOR STUDENTS ENTERING

# PRECALCULUS

*Directions: Show ALL the work you do to solve each problem. Return this project with your work to your math teacher on Monday, August 25, 2014*

## Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Simplify each of the following. No variable represents a value that would make the expression meaningless.

1.  2. 

3.  4. 

5. 6. 

7.  8. 

9. Rationalize:  10. Divide: 

For each of the following problems, write the answer in the form a + bi.

11.  12.  13. 

Use the rules of logarithms to evaluate the following:

14.  15.  16. 

Factor each of the following completely.

17.  18.  19. 

Solve each of the following equations.

20.  21. 

22.  23. 

24. 

Solve each type of the following inequalities. Graph the solution on a number line.

25.  26. 

27. Graph this system of inequalities. 

Solve the following systems of equations.

28.  29. 

30. Find the distance and the midpoint between the two points: *A* (-2,5) and *B* (3,-1).

31. Find the slope and the equation of the line through the points *A* (-2, 5) and *B* (3, -1).

32. Find the equation of the line that is perpendicular to  and passes through the point (6,0).

Graph the following. Indicate intercepts where appropriate.

33.  34. 

Graph each of the following equations.

35.  36. 

37.  38. 

Tell whether the sequence is arithmetic or geometric and identify the common difference or the common ratio.

39.  40. 8, 11, 14, . . .

Find the specified terms for the following sequences.

41. 40th term of 2, 5, 8, . . . 42. 12th term of 12, 6, 3, . . .

Evaluate each expression.

43.  44. 

Find Sn for the indicated series.

45. *S*15 for 9 + 20 + 31 + . . . 46. *S*10 for 1 - 3 + 9 - . . .

***Find the length of the missing side(s) on the triangles below.***

47. 48.

49. 50.

