Suffolk Public Schools
Mathematical Analysis
Summer Assignments 2017

This summer assignment is designed to help you review essential Algebra topics prior to the start of class in September. You may use a calculator; however, to fully develop your Algebra skills in preparation for this course, it is best **NOT** to use a graphing calculator to factor and when working with fractions. Most tests and quizzes given in this course **DO NOT** allow a calculator to be used. As you complete your summer assignment, you may need additional assistance to review math concepts and rules you learned in previous courses. Try these resources:

- Khan Academy http://www.khanacademy.org/
- Cool Math http://www.coolmath.com/

The entire packet will be graded for correctness and completeness and will be counted as a **QUIZ GRADE**. **Your work should be shown neatly on separate sheets of paper to be turned in without the packet. Your answers should be clearly labeled and circled or boxed. The heading, i.e. your name, section title, and problems on that page, must appear on every assignment**. Write all the questions for each problem. The work is to be done by you and you may not work with others to complete this packet. **Cheating or plagiarism may result in a grade of zero (0). This assignment is due on the first day the class meets in September**.

Suggested reading list:

- Familiarize yourself with the Standards of learning for Math Analysis:
  - http://www.doe.virginia.gov/testing/sol/standards_docs/mathematics/2016/stds/stds-mathanalysis.pdf
- At this site you will find the Math Analysis Course Curriculum and Framework. It goes into more detail of what you will be learning in class.
  - http://www.doe.virginia.gov/testing/sol/standards_docs/mathematics/2016/cf/mathanalysis-cf.pdf

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Section I - Simplify and Evaluating Expressions

Evaluate each expression if a = $\frac{3}{4}$, b = -8, c = -2, d = 3, e = $\frac{1}{3}$. (2 points each)

1. $ab^2 - d$

2. $\frac{ae}{c} + d^2$

3. $\frac{d(b-c)}{de}$

4. $a^2c^3 - be^2$

5. $\frac{c^2(a+e)}{b}$

6. $\frac{e}{a} + bc$

7. $ad - ed$

8. $e^2 - ac$

9. $\sqrt{de} + \sqrt{bc}$

10. $e^2 + da$

Section II – Factoring Trinomial Expressions

Find the solutions of each equation. (2 points each)

1. $x^2 + 20 = 9x$

2. $18x^2 = 6x$

3. $4x^2 + 4x = 3$

4. $8x^2 + 26x + 15 = 0$

5. $6x^3 - x^2 + 17x = 2x^2 + 47x$

6. $x^2 - 4x - 14 = 0$

7. $4x^2 + x + 9 = 0$

8. $2x^2 - 5x + 7 = 0$

9. $2x^2 - 8x + 3 = 0$

10. $x^2 - 24x = -63$

Section III - Simplifying Exponential Expressions

Simplify the expression. (2 points each)

1. $(\frac{-9a^2b^2}{3ab})^3 \cdot (\frac{25a^2b^4}{-5})^{-2}$
2. $\frac{x^2(2x^2-3x^{-3})}{6x^{-2}}$
3. $(36x^6y^4)^{\frac{1}{2}}$
4. $(9x^{-6})^{-\frac{3}{2}}$
5. $2m^3 4m^{\frac{3}{2}}m^{-3}$
6. $(m \cdot m^{-2} \cdot n^{\frac{10}{2}})^2$
7. $\frac{x}{(4x^0)^2}$
8. $\frac{-3s^3r^2}{s^{-2}t^8}$
9. $(\frac{m^4}{-5m^{-2}n^3})^2$
10. $4(a^2b^6)^{-3}$

Section IV - Simplifying Radical Expressions

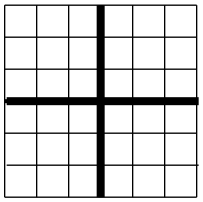
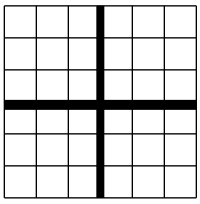
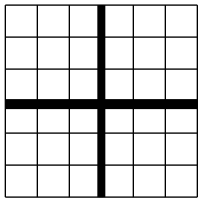
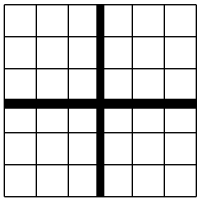
Simplify the expression. (2 points each)

1. $\sqrt{32x^7y^{11}}$
2. $\sqrt[4]{64x^{13}y^9}$
3. $7\sqrt{72} + 3\sqrt{98}$
4. $-\sqrt[3]{128} - 4\sqrt[3]{5} + 2\sqrt[3]{135} + 2\sqrt[3]{16}$
5. $\frac{\sqrt{18}}{4} - \frac{\sqrt{8}}{3}$
6. $-\sqrt{172}$
7. $\sqrt{32} \cdot \sqrt{6}$
8. $\frac{\sqrt{38} \cdot \sqrt{2}}{2}$
9. $-3\sqrt{12} + 3\sqrt{5} + 3\sqrt{20}$
10. $(5\sqrt{3} + 6\sqrt{7})(3\sqrt{3} - 2\sqrt{7})$

Section IV - Simplifying Radical Expressions

Complete the following table. An example has been done for you.

(1 point per box)

Function Family	Parent Function	Domain	Range	End Behavior	Graph
Linear	y = x	$-\infty \leq x \leq \infty$	$-\infty \leq y \leq \infty$	$x \rightarrow -\infty$; $y \rightarrow -\infty$ $x \rightarrow \infty$; $y \rightarrow \infty$	
Square Root (Radical)					
Reciprocal (Rational)					
Logarithmic					
Exponential