

Precalculus – Prerequisite Skills Practice

Name _____

Date _____ Period _____

You will spend some time in class and at home reviewing the following skills and topics from Algebra 1 and Algebra 2. These are the foundational skills that can set you up for success in Precalculus. If you are struggling with a topic, take a look at the examples and problems in that section. These topics can all be found in the Appendix sections in your textbook.

YOU ARE RESPONSIBLE FOR KNOWING THESE TOPICS!

Ask questions, seek extra help if needed.

Section	Topic	Textbook Page	Textbook Problems
A.3	Operations with Polynomials Special Products Polynomials with Common Factors Factoring Polynomials (Special Polynomials, Trinomials, by Grouping)	A24 (Ex. 2 & 3) A25 (Ex. 4) A26 (Ex. 5) A27 (Ex. 6-14)	35 49, 65, 67, 87 93, 95 109, 111, 119, 125, 141, 143, 149, 159, 175, 179, 181, 187
A5	Checking for Extraneous Solutions Solving Linear Equations Solving Quadratic Equations Solving Higher Degree Polynomials Solving Absolute Value Equations	A48 (Ex. 3) & A54 (Ex. 12) A48 (Ex. 2) A50 (Ex. 4, 5, 8, 9) A53 (Ex. 10, 11) A55 (Ex. 14)	177, 155, 159 21 61, 77, 101 145, 149 179, 183
A6	Double Inequalities Absolute Value Inequalities “Quadratic Inequalities”	A63 (Ex. 3) A64 (Ex. 4) -handout-	29, 39 57, 59 (on handout)
A.4	Domain of an Algebraic Expression Operations with Rational Expressions Complex Fractions	A36 (Ex.1) A38 (Ex. 4-7) A40 (Ex. 8)	1, 5, 7 41, 47, 51, 53 55, 73*
A.2	Properties of Exponents Properties of Radicals Rationalizing Denominators & Numerators	A11 (chart, Ex.1 & 2) A15 (chart, Ex. 6, 7, 8) A17 (Ex. 9, 10, 11, 12)	25, 27, 31, 33 65, 69, 73 79, 81, 85
2.3	Long Division	155 (Ex. 2 & 3)	

Worked out answers to all ODD problems can be found at:

<http://www.calcchat.com/book/Precalculus-with-Limits/>

Complete the examples that are on the back of this sheet on a separate sheet of paper.

They will be collected on Monday 9/16.

Use your knowledge of Algebra skills to complete each of the following problems.

1) Simplify $(x^2 + 3) - [3x - (8 - x^2)]$

2) Expand $(3x - 2)^2$

3) Simplify $\left(\frac{2}{x} - \frac{2}{x+1}\right) \div \left(\frac{4}{x^2 - 1}\right)$

4) Solve each of the following equations:

a. $x^4 + x^2 = 6$

b. $2x^2 + 7x - 15 = 0$

c. $3x^2 + 2 = -6x$

5) Solve the following inequality $-3 \leq -2(x + 4) < 4$

6) Graph the following function. Identify transformations, domain, range, and all intercepts.

$$f(x) = -2(x+1)^2 + 3$$

7) Factor each of the following completely:

a. $4x(2x - 1) + (2x - 1)^2$

b. $16x^2 - 81$

c. $4x^2y^2z + 10xy^2z - 6y^2z$

d. $3x^2 + 5x - 2$

8) Simplify each of the following by rationalizing the denominator:

a. $\frac{2 + \sqrt{3}}{\sqrt{5} - 4}$

b. $\sqrt{\frac{49}{50}}$

9) Use long division to simplify $\frac{9x + x^2 + 17}{x + 3}$

10) Solve the following equation: $-2|3x - 1| + 13 = 9$