**STUDY GUIDE FOR TEST III**  
**MATH 1111**

There will be 9 questions on the test. There will also be a 10-point bonus questions.

<table>
<thead>
<tr>
<th>Question</th>
<th>Objective(s)</th>
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| 1        | Evaluate a function of a number.  
Evaluate a function of an algebraic expression.  
[Section 3.1, p. 211, #43-50;  
Chapter Review, p. 268, #3-5] |
| 2        | Determine the domain of a function.  
[Section 3.1, p. 211, #51-66;  
Chapter Review, p. 268, #9-11] |
| 3        | Determine which way a parabola opens.  
Identify the vertex of the parabola.  
Graph a quadratic function.  
[Section 4.3, pp. 299-300, #33-48;  
Chapter Review, p. 317, #9-13] |
| 4        | Write a quadratic equation in standard form.  
Find the $x$- and $y$-intercepts of a quadratic function.  
[Section 4.3, pp. 299-300, #33-48;  
Chapter Review, p. 317, #11-13] |
| 5        | Solve a polynomial inequality.  
[Section 5.4, p. 373, #19-32;  
Chapter Review, p. 398, #21, 22] |
| 6        | Solve a rational inequality.  
[Section 5.4, p. 373, #33-48;  
Chapter Review, p. 398, #23-25] |
| 7        | Find the zeros of a polynomial written in factored form.  
Determine the multiplicity of zeros.  
Determine how the graph intersects with the $x$-axis at zeros.  
Determine the maximum number of turning points on the graph of a polynomial.  
Determine the end behavior of a polynomial.  
[Section 5.1, pp. 339-340, #57-68, 81-98;  
Chapter Review, p. 397, #8-11] |
| 8        | Write an equation in factored form for a polynomial function whose graph is given.  
[Section 5.1, pp. 339-340, 73-80] |
| 9        | Use the Factor Theorem to determine if a binomial is a factor of a given polynomial.  
[Section 5.5; p. 387, #11-20] |