

REVIEW FOR TEST 1 OF MATH 121 :

The first and best line of defense is to complete and understand the homework and lecture examples. In particular you should focus on the homework and examples from lecture which concerned the following questions or tasks:

1. What is the “standard form” of a polynomial. Be able to write polynomials in standard form. Be able to multiply polynomials and write the answer in standard form. (see #60 of P.3 for example)
2. Be able to factor quadratics and reasonably simple cubic and quartic polynomials. (see #82 of section P.4 for a “reasonable” cubic, or section 1.6 # 3 for a reasonable quartic)
3. Given a point know how to check if the point is on the graph of an equation. (for example, see section 1.1 #2)
4. Know your laws of exponents and radicals (see section P.2 # 66 and similar problems). Be able to simplify (I might ask you to find values for A, B, C etc...) expressions like $\sqrt{x^7}(y^2)^4xy = x^Ay^B$ or perhaps $\sqrt{x^2 + 3x^2y} = x^A\sqrt{1 + 3y}$ or perhaps:
$$\frac{x}{y^{-3}} \left[\frac{(x+2)^2}{y} \right]^{-2} = (x+2)^Ax^By^C.$$
5. Be able to solve quadratic equations. You need to memorize the quadratic formula, but I would strongly advise only using it as a last resort. Factoring or taking the square root are easier when they work. (see section 1.4#10, 24 or section 1.5 #66)
6. Be able to solve equations involving radicals or absolute values. (see section 1.6 #22 or 40 or 66)
7. Be able to find the point-slope equation for a line if you are given two points on the line. Also be able to sketch a line and/or identify slopes and y-intercepts from a graph. (see section 2.1 #54)
8. Be able to solve polynomial inequalities by applying the sign-chart idea. This means you will need to be able to factor the given expression and identify all critical points. Then you draw the number line and use test points to insert +++++ or - - - in the appropriate sub-regions of the number line. (see my lecture notes and also section 1.8 # 10, 14 or 40 for example)
9. Remember, you may need to make a common denominator to find critical numbers in 9. (as in E95 or section 1.8#40)

Roughly the credit breaks down as follows: Polynomial multiplication(10pts), Factoring(20pts), Solving quadratics(30pts), Solving radical or absolute value type equation(10pts), find equation of line(10pts), solve rational or polynomial inequality will need sign chart(10pts), laws of exponents problem(10pts).