

FORMATTING: This is semi-formal writing, here. That means show some professionalism. You don't have to type it out, but you do need to be very clear.

1. Write on only one side of each page. I will not award (or deduct) points for anything written on the backs of pages.
2. Plain white paper without lines (8 ½ x 11-inch A4 copier paper works just fine).
3. Staple top left corner.
4. Leave margins. "MAT 121" in big letters in top left corner of every page solves all problems with margins. If you don't leave a margin, you won't get credit for the problem the staple goes through. 'Nuff said.
5. Write DARK. I have glaucoma, and if your writing is too faint for me to read, you'll just get a '0' and I will move on to the next paper. One trick is to re-copy your work on the highest density setting on a copying machine, until your writing really stands out. I don't mind if you use pen. Just put a line through mistakes.
6. Leave ROOM between problems and between steps on your work. Saving paper to save the planet is a false economy, when it comes to your school work! I set a semi-bad example, because I'm worried about 100 students making copies of it, which *is* a paper-waste, so I tend to spread a problem across 2 columns, even though I never want to see more than one column of work, when I'm grading.
7. You don't need to type the math, but you *do* need to type up the last question, because it's all words. If you don't use paragraphs, I will take off 60% for the last problem.

#s 1 – 3 Find all real (or non-real) solutions of the following quadratic equations using the quadratic formula. Be sure to compute the discriminant, first, and separately. I'm looking for that on tests, as well, *whenever* you face a quadratic expression. It modularizes the work, and it tells you what you're getting into.

1.  $x^2 + 7x - 18 = 0$
2.  $5.89x^2 - 13.09x + 7.26 = 0$  (Round your final answer to 4 decimal places.)
3.  $25x^2 - 20x + 7 = 0$  (Give an exact answer, in simplified radical form.)
4.  $3mx^2 - 2wx + 5r = 0$  (Your answers will have letters in them. That's OK!)

#s 5, 6 Solve the following by factoring. You may use a sledgehammer, if you wish, but write the polynomial in factored form, after you find the solutions, to show you understand the connection between factors and solutions, frontwards and backwards! Give answers as integers or fractions, in lowest terms.

5.  $x^2 + 7x - 18 = 0$
6.  $589x^2 - 1309x + 726 = 0$

#s 7 – 10 Solve the following by completing the square. Do not use decimals; rather, use *fractions*, as needed, to

complete the square. No  $3.5^2$  for #7. Use  $\left(\frac{7}{2}\right)^2$ .

7.  $x^2 + 7x - 18 = 0$
8.  $x^2 - 24x - 9 = 0$
9.  $5x^2 + 2x + 3 = 0$
10.  $4x^2 - 16x + 11 = 0$

11. Type at least 3 paragraphs discussing the pro's and con's of each method. I'm not expecting a PhD thesis, here, but I am expecting some good writing. If your answer is all one big, long paragraph, you're doing it wrong, and I will deduct for a wall of words, that isn't broken into nice, tight paragraphs that express complete thoughts.