Results for Midterm 2

The quartiles fell as follows:

25% of you scored above 202.
50% of you scored above 192.
75% of you scored above 177.

The median was 192. The mean was 189. The standard deviation was 15. Here is the breakdown per problem:

Problem	**Average Score**	**Technique**
Problem 10	70.5%	Power series convergence by comparison
Problem 6	71.8%	Taylor series for sinh
Problem 11	72.1%	Differentiate power series
Problem 8	74.5%	Lagrange's theorem
Problem 12	76.1%	Extra Credit
Problem 5	79.9%	Taylor series $\cos\sin x$
Problem 2	82.6%	Limit comparison and n-th term test
Problem 4	84.8%	Absolute and conditional convergence
Problem 7	85.6%	Taylor's theorem
Problem 9	93.2%	Power series convergence by ratio test
Problem 1	93.3%	Definition of convergence
Problem 3	95.3%	Definition of ratio test

Relationship between the midterms

The scores from the second exam do correlate with the scores from the first exam; the normalized scores on the second midterm were about 70% those of the first midterm. Here is a formula relating the second midterm scores to the first midterm scores:

$$\text{Second Midterm} = 0.682 \cdot \text{First Midterm} + 47.8$$

For example, if I scored 210 on the first midterm, I might have expected to score 191 on the second midterm.

Translation into letter grades

If the sum of your scores on the midterms exceeds 400, you are on track to get an **A**. Scoring above 350 points puts you on target for a **B**.

If you are not doing as well as you want to be doing, you should talk to me so we can work together towards your success. I have weighted the final exam heavily not because I want the final exam to be terrifying, but because I want to give you every opportunity to pull your grade up.

An inspirational message

There can be some concern about how I will be assigning letter grades. I take the assignment of grades extremely seriously: the numbers I give out frankly don't matter, but the letter grades I give out will be on your college transcript forever. I will do my best to be both merciful and just (as I hope I have demonstrated during the quarter).

It was not so long ago that I received grades, and for all the effort I put into my grades, they have proved to be unimportant. Recommendation letters, on the other hand, are extremely important, as is hard work.

Hard work is most important of all. You may find things are easy now, but there will come a time when mathematics will be hard (we humans are fortunate to be able to do any mathematics at all), and what distinguishes the merely talented from the truly great is not skill, but persistence.

The definition of mathematics is discipline

Looking up $\mu\alpha\theta\ldots$ in a Greek-English lexicon:

μάθημα, ατος, τό, (μᾰθεῖν) *that which is learnt, a lesson.* 2. *learning, knowledge*:—in pl., τὰ μαθήματα *mathematics.* Hence
μᾰθημᾰτικός, ή, όν, *fond of learning.* II. *belonging to the sciences*, esp. *to mathematics*: ἡ μαθηματική (sub. ἐπιστήμη), *mathematics*: ὁ μαθηματικός *a mathematician.*
μάθησις, ή, (μᾰθεῖν) *the act of learning, acquiring information.* 2. *desire* or *power of learning.*
μᾰθήσομαι, fut. of μανθάνω.
μᾰθητέος, α, ον, verb. Adj. of μανθάνω, *to be learnt.* II. neut. μαθητέον, *one must learn.*
μᾰθητεύω, f. σω, *to be a pupil* or *scholar.* II. trans. *to make a disciple of* one, *instruct.* From
μᾰθητής, οῦ, ὁ, (μαθεῖν) *a learner, pupil*, Lat. *discipulus*: *a disciple.*

Indeed, mathematics epitomizes learning.