Abject mismatch tester gets us

Masterclass – session I

The GRE math subject test

- The go-to URL: `https://www.ets.org/gre/subject/`

  *In general, the questions are intended not only to test recall of information but also to assess the **understanding** of fundamental concepts and the **ability to apply** those concepts in various situations.*

  Read the FAQ!
- About $2\frac{1}{2}$ min per question.
- #2/HB pencil + eraser.
- Correct answer: $+1$ point, wrong answer: nevermind.
-
- Typical undergrad material covered.
- Good resource: `http://rambotutoring.com/`
- Registration (non-US): **Sep 13** (regular) – **Sep 20** (late).

The GRE math subject test

- The go-to URL: `https://www.ets.org/gre/subject/`
- About $2\frac{1}{2}$ min per question (about 66 questions, under 3h).
- #2/HB pencil + eraser.
- Correct answer: $+1$ point, wrong answer: nevermind.
-
- Typical undergrad material covered.
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-

The GRE math subject test

- The go-to URL: `https://www.ets.org/gre/subject/`
- About $2\frac{1}{2}$ min per question.
- #2/HB pencil + eraser.
  No notes, calculator, **or extra scratch paper**, etc.
- Correct answer: $+1$ point, wrong answer: nevermind.
-
- Typical undergrad material covered.
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The GRE math subject test

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- #2/HB pencil + eraser.
- Correct answer: $+1$ point, wrong answer: nevermind.

  From `[go-to URL]/prepare/strategy/`:
  Nothing is subtracted [..] if you answer a question incorrectly.

  Also, It matters not if you're the only one to solve problem X.
-
- Typical undergrad material covered.
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-

The GRE math subject test

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- #2/HB pencil + eraser.
- Correct answer: $+1$ point, wrong answer: nevermind.
- *Raw score* (#points) normalized to *scaled score* (200–990).
- Typical undergrad material covered.
- Good resource: `http://rambotutoring.com/`
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Calculus Diff Eq	Algebra, trigo Linear alg Abstract alg Number theory	Set theory Proba & stats Combinatorics Real analysis Topology Complex variables

- Good resource: `http://rambotutoring.com/`
- Registration (non-US): **Sep 13** (regular) — **Sep 30** (late)

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- Correct answer: $+1$ point, wrong answer: nevermind.
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- Typical undergrad material covered.
- Good resource: `http://rambotutoring.com/`
  I'll be using problems from there & "The Princeton review".
- Registration (non-US): **Sep 13** (regular) – **Sep 20** (late).
-

The GRE math subject test

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- Registration (non-US): **Sep 13** (regular) – **Sep 20** (late).

  ...for the next slot Sat, **Oct 26, 2019**.

The GRE math subject test

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- Registration (non-US): **Sep 13** (regular) – **Sep 20** (late).
- Test run?

What is a masterclass?

O. Ghiglia with A. Segovia (1965)

http://bit.do/segovia

Warm-up

$$\int_0^1 \sqrt{e^{2x} + e^{-2x} + 2}\, dx$$

Warm-up

$$1 - \frac{1}{3} + \frac{1}{5} - \frac{1}{7} + \dots$$

Warm-up

For how many values of $k \in \mathbb{R}$ the system of equations

$$\begin{aligned} kx + y + z &= 1 \\ x + ky + z &= k \\ x + y + kz &= k^2 \end{aligned}$$

has no solutions?

Warm-up

For how many values of $k \in \mathbb{R}$ the system of equations

$$\begin{aligned} kx + y + z &= k \\ x + ky + z &= k \\ x + y + kz &= k^2 \end{aligned}$$

has no solutions?

Warm-up

Let $p \neq q$ be primes. How many abelian groups of order p^2q^4?

Warm-up

Let $p \neq q$ be primes. Which of $\{p, p+q, pq, p^q, q^p\}$ can coexist in a proper subgroup of $(\mathbb{Z}, +)$?

Warm-up

Let $B \subset \mathbb{R}^2$. Assume that every continuous $f : B \to \mathbb{R}$ is bounded.

Warm-up

Let $B \subset \mathbb{R}^2$. Assume that every continuous $f : B \to \mathbb{R}$ is bounded. Is B compact?

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