Lecture 1: Quiz

Name: 

Electronically, an minimal email to knill@math.harvard.edu can just contain something like:


Other possibilities are to ”attach an annotated PDF”, or ”print, write on paper and send a scan or photo”. The best is to come to class and get it done right away.

Problem 1

Two of the following 9 problem areas do not belong to the class of 7 liberal arts and sciences. Which ones?

| A | Algebra | D | Rhetoric |
| B | Arithmetic | E | Logic |
| C | Astronomy | F | Grammar |
| G | Geometry | H | Physics |
| I | Music |

Problem 2

At the end, we have worked today on drawing Barycentric refinements. This was a drawing game, where we add new points at the faces and edges and connected the new face points with neighboring vertex or edges points. If we start with a single triangle, how many triangles are there present including the triangle itself after doing one refinement? There is one correct answer.

1 3 7 9

Problem 3

We have seen several definitions of what Mathematics is. Who said that ”there is a creative force in Mathematics”? There is one correct answer.

Albert Einstein  Claire Voisin  Mario Livio  Vladimir Arnold

Problem 4

How many ancient roots of Mathematics did we count in the lecture? There is one correct answer.
Problem 5

How many liberal arts and sciences are there? There is one correct answer

4    7    10    12

Problem 6

We looked briefly at the **amusical sequence** which is a Collatz type problem with an amazing property. Which property does this arithmetic problem have?

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<tbody>
<tr>
<td>A</td>
<td>It is true but we can not prove it</td>
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<tr>
<td>B</td>
<td>It is false but we can not find a counter example</td>
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<td>C</td>
<td>It is undecidable</td>
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Problem 7

One of the following statements definitely does not apply. Which one?

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<tbody>
<tr>
<td>A</td>
<td>Maths has ties with arts</td>
<td>D</td>
<td>Math needs to be done, not talked about</td>
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<tr>
<td>B</td>
<td>Math is the science of structure</td>
<td>E</td>
<td>Math can influence history</td>
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<td>C</td>
<td>Historical difficulties matter today</td>
<td>F</td>
<td>Math has reached its final form</td>
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Problem 8

At the very beginning (or in the syllabus) we mentioned a teaching methodology used in this course. Which one. There is one answer.

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<tbody>
<tr>
<td>A</td>
<td>Improvisation</td>
<td>D</td>
<td>Random method</td>
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<td>B</td>
<td>Systematic Method</td>
<td>E</td>
<td>Encyclopedic method</td>
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<tr>
<td>C</td>
<td>Case Method</td>
<td>F</td>
<td>No method</td>
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Problem 9

What is the topic of the final "Math Mojo" project?

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<tbody>
<tr>
<td>A</td>
<td>10 best Math hacks</td>
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<td>B</td>
<td>10 hottest Mathematicians</td>
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<td>C</td>
<td>10 best ideas or concepts in math</td>
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<tr>
<td>D</td>
<td>10 most brutal Math battles</td>
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