

Categories for Round I:

Famous numbers

Famous Mathematicians I

Differentiate this: You are to differentiate the expression.

Correct questions will be of the form "What is the antiderivative of $f'(x)$?"

Mathematics on the big screen

Hilbert's Problems (A list of 23 problems published by German mathematician David Hilbert that were influential in directing the course of 20th century mathematics)

Famous numbers

1. What is zero?
2. What is 2π ?
3. What is the golden ratio?
4. What is e ?
5. What is Euler's constant?

Famous Mathematicians I

1. Who is Pythagoras?
2. Who is Gottfried Wilhelm Leibniz? (Last names are sufficient)
3. Who is Carl-Frederik Gauss?
4. Who is Leonhard Euler?
5. Who is Rene Descartes?

Differentiate this: You are to differentiate the expression.

Correct questions will be of the form "What is the antiderivative of $f'(x)$?"

1. What is the antiderivative of e^x ?
2. What is the antiderivative of $-\sin(x)$?
3. What is the antiderivative of $\sec^2(x)$?
4. What is the antiderivative of $(1+x)e^x$?
5. What is the antiderivative of the Heaviside step function?

Mathematics on the big screen

1. What is Pi?
2. What is Good Will Hunting?
3. What is A Beautiful Mind?
4. What is Proof?
5. Who is Paul Erdos?

Hilbert's Problems (A list of 23 problems published by German mathematician David Hilbert that were influential in directing the course of 20th century mathematics)

1. What is Hilbert's 1st problem? (Also acceptable Continuum hypothesis)
2. What is Hilbert's 8th problem? (Riemann hypothesis)
3. What is Hilbert's 5th problem? (Hilbert-Smith conjecture)
4. What is Hilbert's 18th problem?
5. What is Hilbert's 2nd problem?

Categories for Round II:

Counting

Famous Mathematicians II

Integrate that: You are to integrate the given expression.

Correct questions will be of the form "What is the derivative of $F(x)$?"

Lord of the Rings (answers here will involve a ring in some way)

Well known sets

Counting

1. What is $6!$? ($3!$, 3 factorial)
2. What is 6^6 ?
3. What is 10^6 ?
4. What is $6C2$? (4 choose 2)
5. What is 6^6 ?

Famous Mathematicians II

1. Who is David Hilbert?
2. Who is Alan Turing?
3. Who is Kurt Godel?
4. Who is Emmy Noether?
5. Who is Alexander Grothendieck?

Integrate that: You are to integrate the given expression.

Correct questions will be of the form "What is the derivative of $F(x)$?"

1. What is the derivative of e^x ?
2. What is the derivative of $\sin(x)$?
3. What is the derivative of $-\cot(x)$?
4. What is the derivative of $\frac{1}{2} e^{x^2}$?
5. What is the derivative of $\tan^{-1}(x)$? (inverse tangent or arctangent)

Lord of the Rings (answers here will involve a ring in some way)

1. What is a ring?
2. What are the integers?
3. What are complex polynomials in one variable? (complex polynomials)
4. What are the integers modulo 3?
5. What are matrices?

Well known sets

1. What are the rational numbers?
2. What are the irrational numbers?
3. What is the n -sphere?
4. What are the Gaussian integers?
5. What is the Cantor set?

Final Jeopardy : Breakthrough Prizes

Who is (from left to right) Simon Donaldson, Maxim Kontsevich, Terrance Tao, Richard Taylor, Jacob Lurie? No credit for Benedict Cumberbatch or Mark Zuckerberg.