

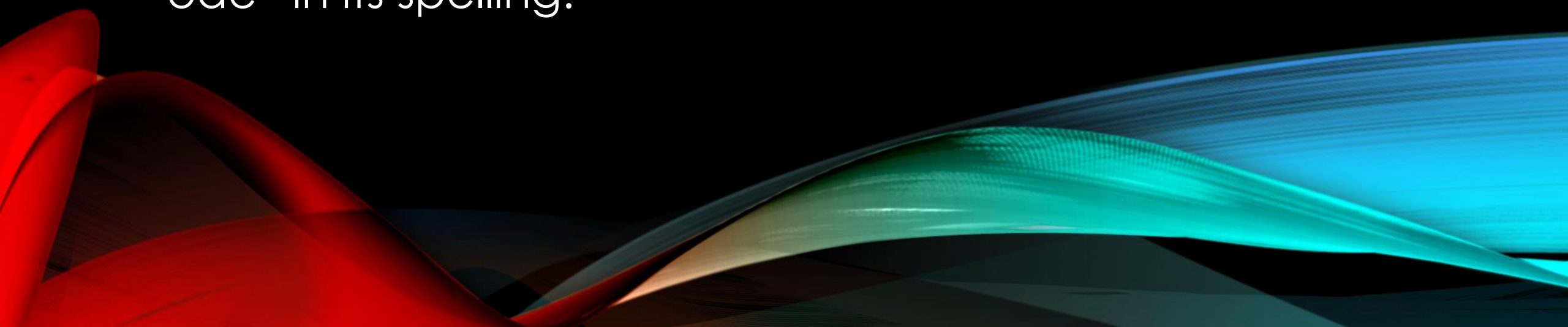
SOLUTIONS
At SCUDEM



ROUND 1:

An Ode to ODE in Math

The answer to each question is a math term which contains "ode" in its spelling.



ROUND 1, QUESTION 1

A fixed point on a phase portrait could be a stable, unstable or saddle this.



ODE

ROUND 1, QUESTION 1

A fixed point on a phase portrait could be a stable, unstable or saddle this.

Node

ODE

ROUND 1, QUESTION 2

One of the three measures of central tendency is this.



OAE

ROUND 1, QUESTION 2

One of the three measures of central tendency is this.

Mode

मोड

ROUND 1, QUESTION 2

One of the three measures of central tendency is this.



ROUND 1, QUESTION 3

The enigma machine could do this to a message.



ROUND 1, QUESTION 3

The enigma machine could do this to a message.

Encode or
Decode



DVE

ROUND 1, QUESTION 4

In geometry, this is the shortest path between two points.



ROUND 1, QUESTION 4

In geometry, this is the shortest path between two points.

Geodesic

জিওডেসিক

ROUND 1, QUESTION 5

A regular polyhedron with twelve faces is called this.



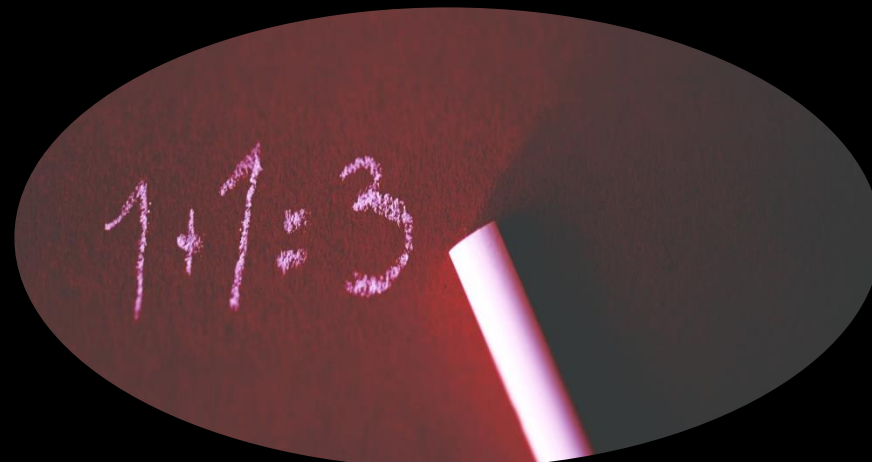
Dodecahedron

ROUND 1, QUESTION 5

A regular polyhedron with twelve faces is called this.

Dodecahedron

𑀩𑀭𑀸𑀓



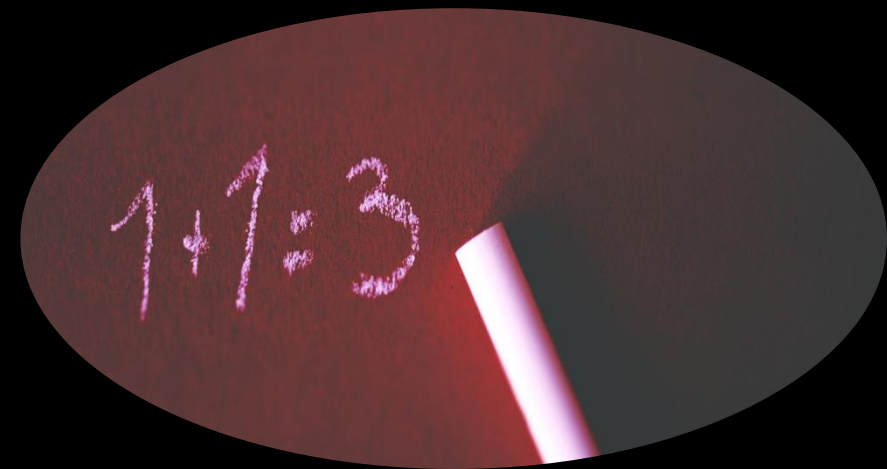
ROUND 2:

Bad Movie Math

Each question will be a quote from a movie that is mathematically inaccurate, either intentionally or by accident. You must identify the movie the quote is from.

ROUND 2, QUESTION 1

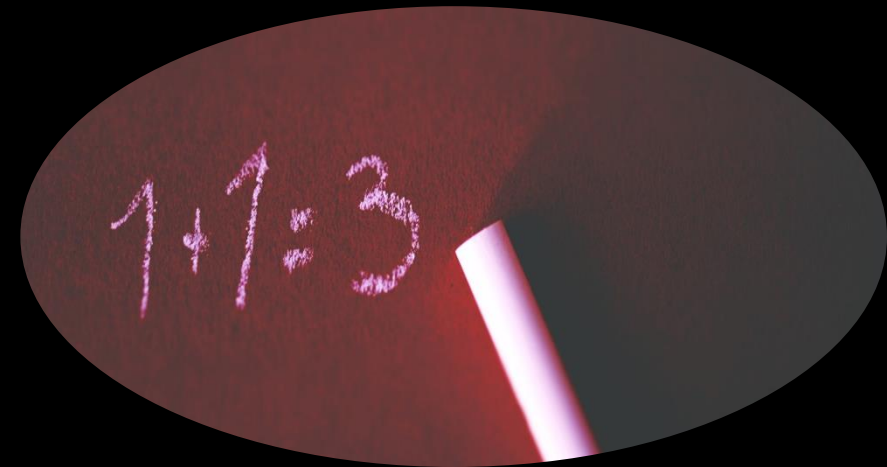
Scarecrow: “The sum of the square roots of any two sides of an isosceles triangle is equal to the square root of the remaining side.”



ROUND 2, QUESTION 1

Scarecrow: “The sum of the square roots of any two sides of an isosceles triangle is equal to the square root of the remaining side.”

The Wizard of Oz



ROUND 2, QUESTION 2

Pongo: “Everybody here? All fifteen?”

Patch: “Twice that many, Dad. Now there’s 99 of us!”

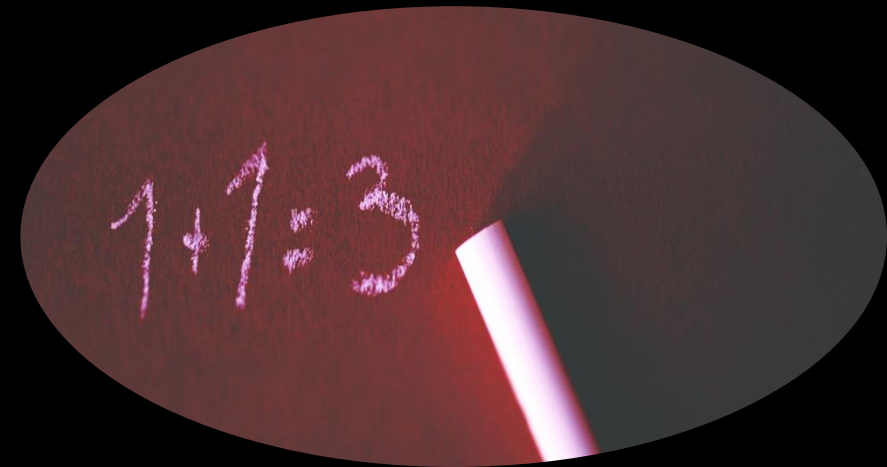


ROUND 2, QUESTION 2

Pongo: “Everybody here? All fifteen?”

Patch: “Twice that many, Dad. Now there’s 99 of us!”

101 Dalmatians



ROUND 2, QUESTION 3

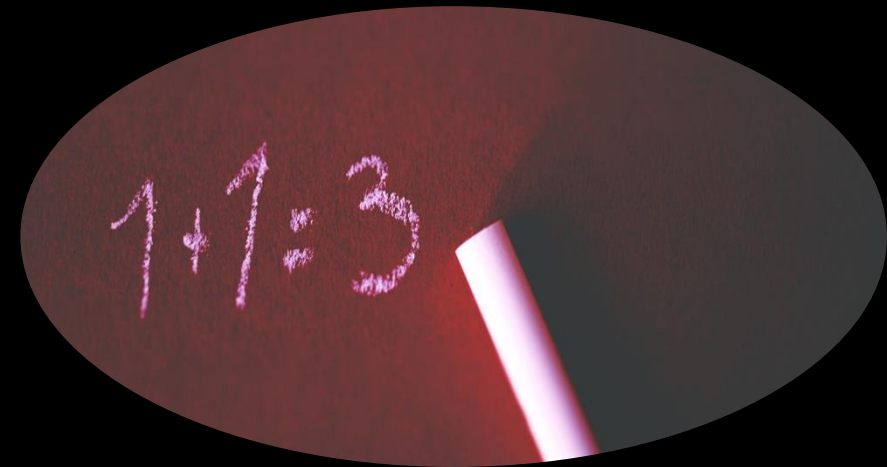
Hazel Grace Lancaster: “There are infinite numbers between 0 and 1. There's .1 and .12 and .112 and an infinite collection of others. Of course, there is a bigger infinite set of numbers between 0 and 2, or between 0 and a million.”



ROUND 2, QUESTION 3

Hazel Grace Lancaster: "There are infinite numbers between 0 and 1. There's .1 and .12 and .112 and an infinite collection of others. Of course, there is a bigger infinite set of numbers between 0 and 2, or between 0 and a million."

The Fault in Our Stars



ROUND 2, QUESTION 4

Einstein Bobblehead: “Don’t you get it, kid? You’re looking for the secret number at the heart of the pyramids!”

Amelia Earhart: “Well, whistle me Dixie, the answer’s pi!”

Larry Daley: “Pi?”

Einstein Bobblehead: “Three point one four one five nine two six five to be exact!”



ROUND 2, QUESTION 4

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Larry Daley: “Pi?”

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Night at the Museum:
Battle of the Smithsonian

ROUND 2, QUESTION 5

Aaron Samuels: "It's a factorial, so you multiply each one by n."

Cady Heron: *(thinking) Wrong.*

"Is that the summation?"

Aaron Samuels: "Yeah, they're the same thing."

Cady Heron: *(thinking) Wrong, he was so wrong.*

"Thanks, I, uh, I get it now."



ROUND 2, QUESTION 5

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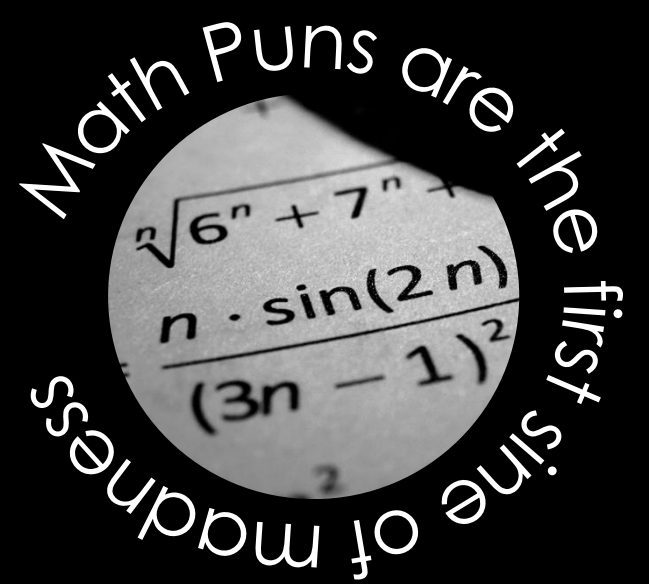
"Thanks, I, uh, I get it now."

Mean Girls

ROUND 3:

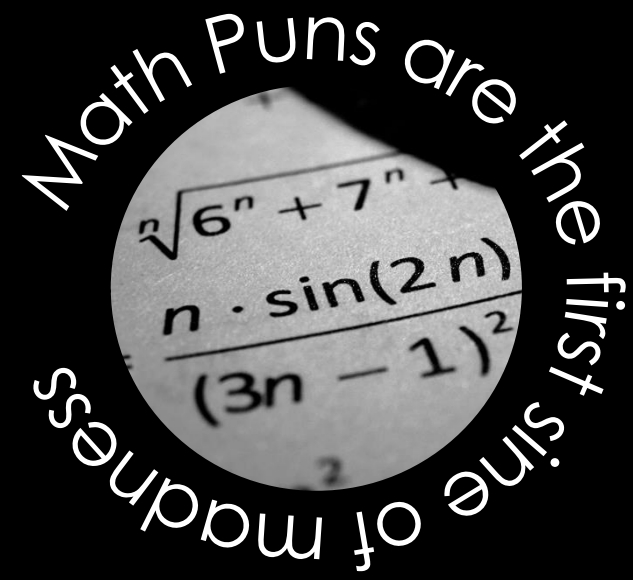
PUNNY MATH

The answer to each question is a math pun!



ROUND 3, QUESTION 1

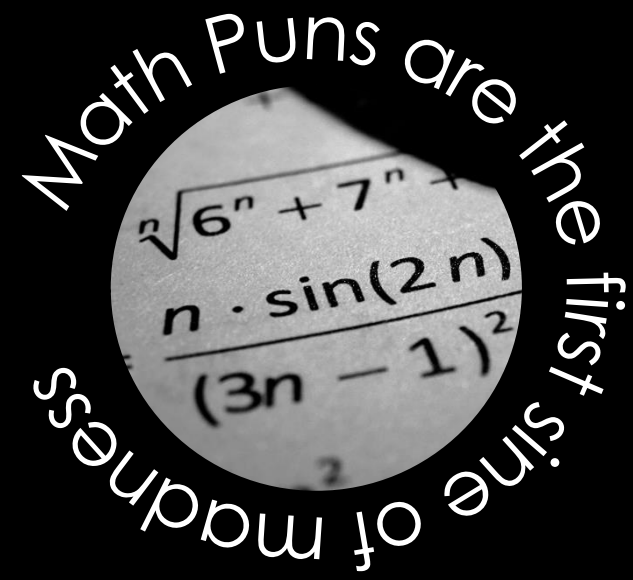
Why is the function $y = e^x$ never grumpy, upset, or pessimistic?



ROUND 3, QUESTION 1

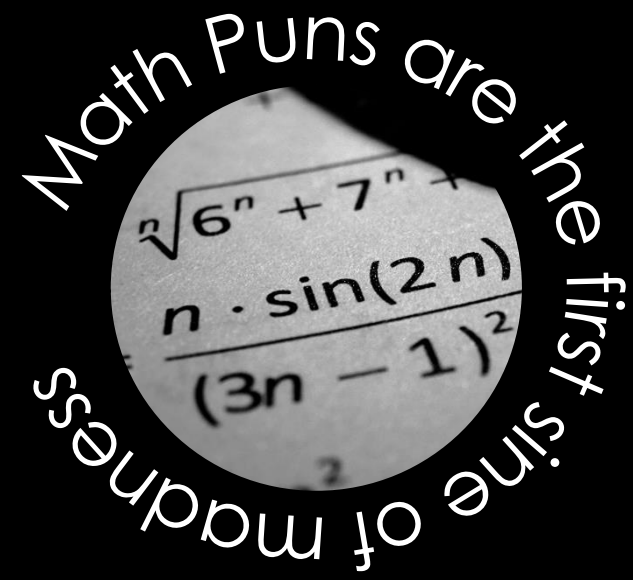
Why is the function $y = e^x$ never grumpy, upset, or pessimistic?

It's always positive



ROUND 3, QUESTION 2

How would a real mathematician describe her relationship with her imaginary friend?

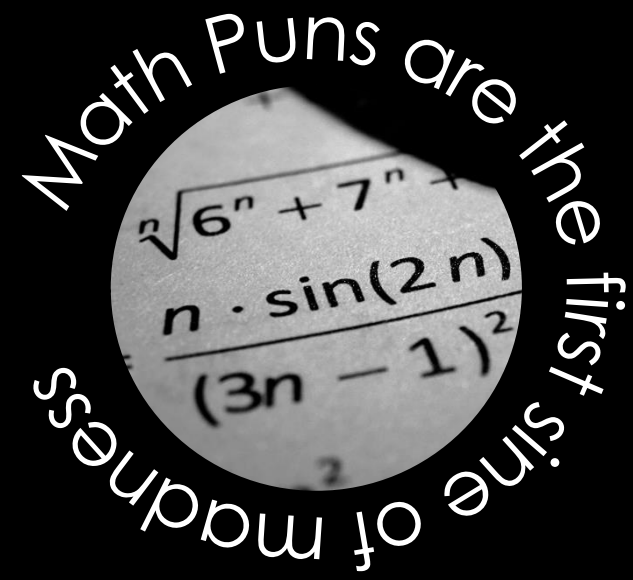


ROUND 3, QUESTION 2

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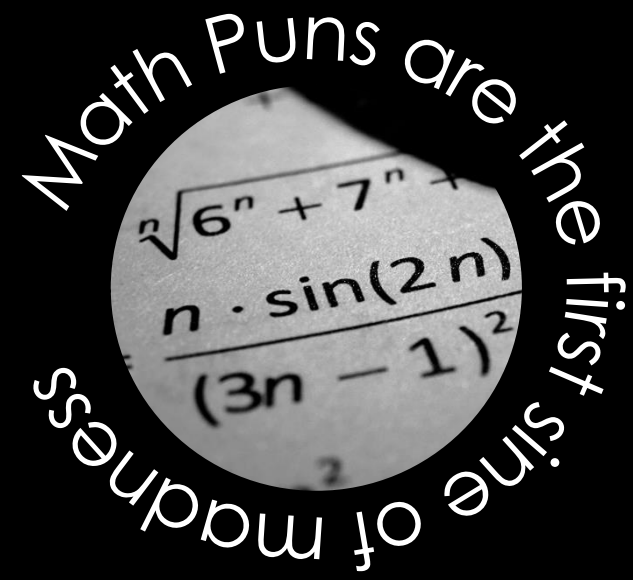
It's complex

Math Puns are the first sine of madness

A circular graphic with a white border. Inside the circle, there is a grayscale image of a document with mathematical formulas. The formulas visible are $\sqrt[2]{6^n + 7^n}$, $n \cdot \sin(2n)$, and $(3n - 1)^2$. The text "Math Puns are the first sine of madness" is written in a white, sans-serif font, curving around the top and right sides of the circle.

ROUND 3, QUESTION 3

Why could the atheist solve linear equations but didn't understand quadratic ones?

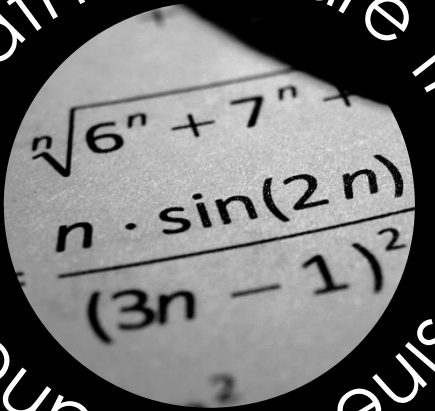


ROUND 3, QUESTION 3

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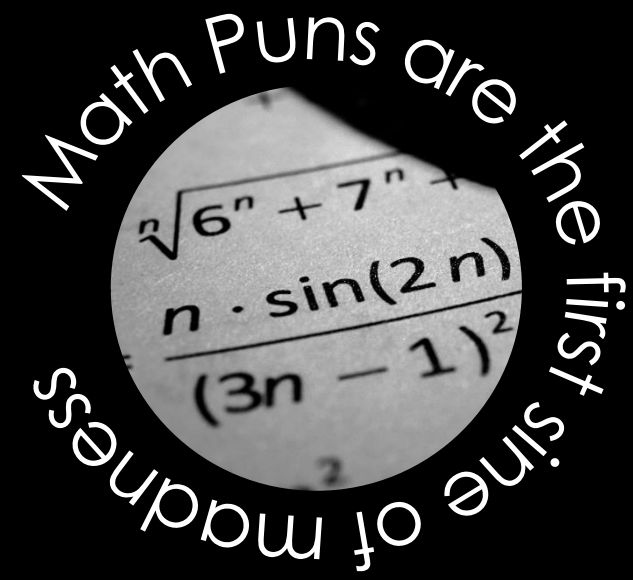
He didn't believe in higher powers

Math Puns are the first sine of madness



ROUND 3, QUESTION 4

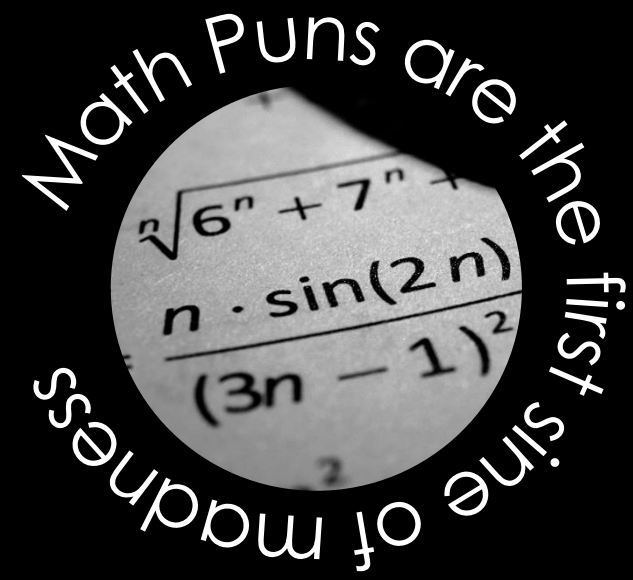
If you are playing Tic-Tac-Toe and switch which letters you are playing, who does your opponent become?



ROUND 3, QUESTION 4

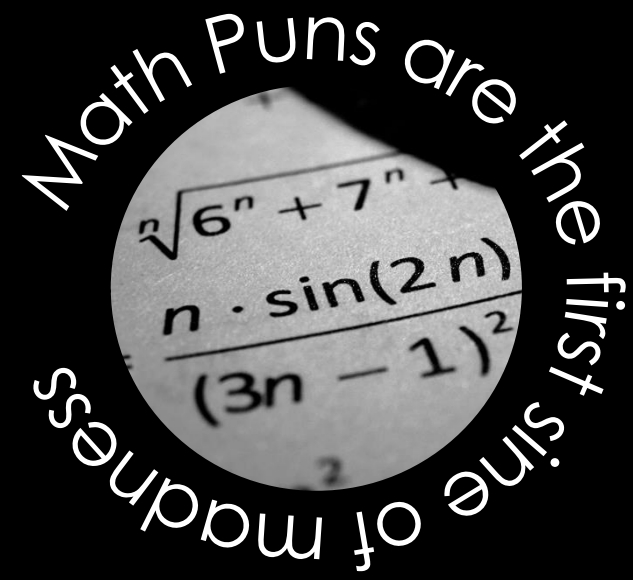
If you are playing Tic-Tac-Toe and switch which letters you are playing, who does your opponent become?

Your exponent



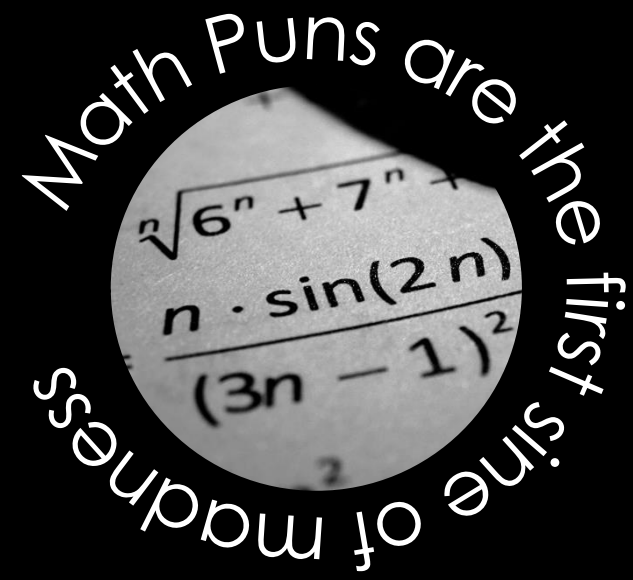
ROUND 3, QUESTION 5

For the student who was so bad at math, the expression
 $2n + 3n$ was this to him.



ROUND 3, QUESTION 5

For the student who was so bad at math, the expression $2n + 3n$ was this to him.



ROUND 4:

MATHEMATICAL TEAM NAMES

Each hint is both about the name of a professional sports team AND a mathematical concept. Use the hint to find the name of the mathematical concept.



ROUND 4, QUESTION 1

- “Lebron James plus Dwanye Wade plus Chris Bosh equal the Big Three” could be an example of this.



ROUND 4, QUESTION 1

- “Lebron James plus Dwanye Wade plus Chris Bosh equal the Big Three” could be an example of this.

Heat Equation



ROUND 4, QUESTION 2

- A question asking you to compare the goal scoring efficiency of Nashville's hockey team to their frequency of appealing to a higher deity would be this.



ROUND 4, QUESTION 2

- A question asking you to compare the goal scoring efficiency of Nashville's hockey team to their frequency of appealing to a higher deity would be this.

**Predator Prey
(Pray) Problem**



ROUND 4, QUESTION 3

- Your best guess as to which numbers are both worn by Minnesota professional major league baseball players and are non-factorable would be this.



ROUND 4, QUESTION 3

- Your best guess as to which numbers are both worn by Minnesota professional major league baseball players and are non-factorable would be this.

**Twin(s) Prime
Conjecture**



ROUND 4, QUESTION 4

- The journey undertaken by the former NFL Houston team as they moved to Tennessee before they became the Titans would be this.



ROUND 4, QUESTION 4

- The Journey undertaken by the former NFL Houston team as they moved to Tennessee before they became the Titans would be this.

Oiler (Euler) Path



ROUND 4, QUESTION 5

- An in-depth examination of Salt Lake's Major League Soccer team could be described as this.



ROUND 4, QUESTION 5

- An in-depth examination of Salt Lake's Major League Soccer team could be described as this.

Real Analysis



TIEBREAKER

- As of August 2017, the largest known prime is how many digits long?

TIEBREAKER

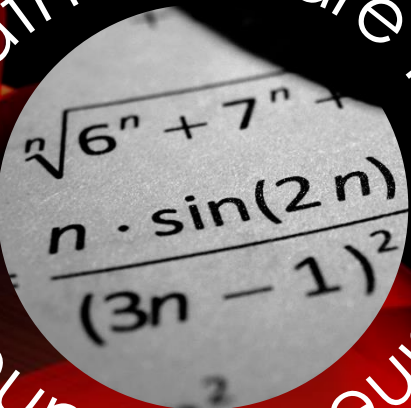
- As of August 2017, the largest known prime is how many digits long?

22,338,618



THANKS FOR PLAYING!!!

Math Puns are the first sine of madness



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