Detailed Summary of the Video

The speaker, Dr. Craig Hane (known to his students as “Dr. Del”), is a PhD mathematician with decades of teaching experience. He addresses leaders and parents in homeschool co-ops and asks a central question: do they want to dramatically improve the quality of math education for their teens (roughly grades 7–12) while likely lowering costs and making things easier for everyone involved? If the answer is yes, he invites them to consider his 21st-century math program, Triad Math, and related resources.

Table of Contents:

1. Who Dr. Hane Is and His Core Claim

- Dr. Hane introduces himself and briefly refers to his personal website, where visitors can:
    - Read his biography and story.
    - Browse his math video library.
- His overarching claim: modern 21st-century technologies have **revolutionized** math education, making it possible to:
    - Teach math more effectively.
    - Do so at a much lower cost.
    - Make math more accessible and less intimidating for virtually all students, from struggling learners to advanced STEM-bound students.
- He contrasts this with what he calls **“20th-century math education”**, which relies on older tools and textbooks that he considers obsolete and inefficient.

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2. Key Resource #1 – "Golden Rule Math for All God's Children"

Dr. Hane's first major resource is a free PDF book titled **"Golden Rule Math for All God's Children."** It is also available as a paid hardcopy on Amazon, but he emphasizes the free PDF.

Purpose of the book:

- In about 1–2 hours of reading, it explains:
    - How modern tools and technologies have transformed math education.
    - What an **optimal 21st-century math program** looks like for any child.
    - How homeschool co-ops can implement such a program inexpensively.

Structure and key ideas:

1. **Part 1 – Essential Ingredients of an Optimal 21st-Century Math Program (about 25 pages)**
    - Focuses on two essentials:
        - **Pedagogy** – how math is taught.
        - **Content** – what math is taught.
    - He introduces his own pedagogical acronym, **"SPIKE pedagogy"** (SP I ke), which he claims is central to effective teaching (though he does not fully unpack the acronym in the transcript).
    - He insists both pedagogy and content must be right to:
        - Remove students' fear of math.
        - Help them actually enjoy the subject.
        - Enable them to learn math relatively easily (like learning a sport).
    - He views math learning like training in a sport:
        - You receive lessons.
        - You practice skills.
        - You improve through guided repetition.
2. **Teacher vs. Coach:**
    - In his model:
        - **He (Dr. Del)** is the *teacher* via tutorial videos.
        - **The homeschool co-op/parents** serve as *coaches* who:
            - Encourage, supervise, and support students.
            - Do **not** need to be strong at math themselves—just good at working with students.
    - Chapter 1.4 in this part explains **"how to be a great coach."**
3. **Part 2 – Struggling Math Students**
    - Addresses students who are currently struggling with math.
    - Provides explanations, examples (including "Grace's story"), and strategies for helping these learners succeed using his program.
4. **Part 3 – Successful Math Students**
    - For students already doing well:
        - Shows how they can be **even more successful**.
        - Explains that students can do well for a while, then hit a class that derails them (he uses his own algebra experience as an example).
    - He shares his personal story:

        - Did very well up through 8th grade thanks to a homeschool teacher (his uncle).
        - Then struggled with algebra and was told he might not be college material.
        - Later, two excellent teachers helped him, and he eventually earned a PhD in algebraic number theory.
    - This part is meant to show:
        - Even strong students can be tripped up by poor instruction or curriculum.
        - With the right approach, they can recover and excel.
5. **Non-College-Bound vs. College-Bound Students**
    - He distinguishes between:
        - **Non-college-bound students:**
            - Can still learn valuable, practical math that prepares them for **well-paid, satisfying technical careers** without going to college.
        - **College-bound students:**
            - Need a more extensive math foundation.
            - He claims to outline:
                - What math they need.
                - How to prepare effectively for college.
                - How to do it with **no college debt**, partly by using his program to accelerate readiness.
6. **STEM-Bound Students (Part 6)**
    - For students aiming at **science or engineering**, he considers this section **mandatory reading**.
    - Main points:
        - STEM students today can **learn and apply math more easily** than 20th-century students, thanks to modern tools.
        - In 2009, **Wolfram|Alpha** was introduced, which he calls a “fabulous tool” that “changes everything.”
        - He argues that:
            - With tools like Wolfram|Alpha, deep pre-calculus math and beyond become far more accessible than with traditional methods.
7. **Additional Content**
    - Chapters encouraging readers to **“invest in yourself”**.
    - Applications of math and science, including a provocative claim that:
        - **Science and math prove God exists.**
            - He frames this as a response to skepticism from some scientists and others.
            - Suggests this conclusion supports religious texts (Bible, Quran, etc.).
    - An **action plan** section explaining what a parent or co-op should do next.

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3. Key Resource #2 – "Public School Math Is Destroying the USA: How and Why"

The second major book is titled **"Public School Math is Destroying the USA. How and Why."**
Main thesis:

- Current public school math, and nearly all textbooks based on that framework, are:
    - **Obsolete**, rooted in 20th-century methods.
    - Educationally damaging.
    - Widely copied in homeschool and online programs, so many co-ops unknowingly replicate the same problems.

Key sections:

1. **Part 1 – Facts and Observations about Public School Math**
    - Discusses real-world observations and "facts of life" about public school math.
    - He believes most listeners will agree with his criticisms based on their own experiences.
2. **Part 2 – Dr. Hane's Personal Story**
    - Provides his background in more depth so:
        - Listeners understand how he came to create Triad Math.
        - They can judge his credibility and motivations.
3. **Part 3 – Deeper Dive into His Program**
    - Expands on how and why his new 21st-century program works.
4. **Part 4 – What's Wrong with Public School Math**
    - The key critique is in **chapters 19–22**.
    - These four chapters:
        - Detail specific structural and curricular problems.
        - Explain why public school math fails many students.
    - He notes that even homeschoolers or online learners often **use curricula that closely mirror public school math**, so they inherit the same issues.
5. **Part 5 – The 21st-Century Solution: Triad Math**
    - Lays out **Triad Math** as the solution:
        - A modern, technology-driven program.
        - Distinct from all standard textbooks and traditional methods.

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4. Overview of the Websites and Organizations

Dr. Hane references several online properties:

1. **Personal Website (CraigHane.com)**
    - Houses his bio, story, and video library.
    - Offers links to free eBooks like the two mentioned.
2. **Triad Math, Inc. (Corporate Site)**
    - Describes the company, its origin, and its offerings.
    - Focuses on the full math pathway provided by Triad Math.
3. **Workforce Math**
    - A related organization focused on:
        - **Practical math for workforce preparation**, not necessarily STEM.
        - Prepares students for technical careers (e.g., trades, technical jobs) rather than science or engineering.
4. **Supercharge Your Tutorial or Your Co-op (Landing Page)**
    - The page on which the video is hosted.
    - Explains:
        - How to “supercharge” a homeschool co-op with his six-tier program.
        - Requirements and logistics.
        - Includes testimonials (e.g., from Grace Christian Academy’s former headmaster and math teacher, Aaron Farley).
5. **Testimonial Page**
    - At a URL like `triadmathinc.com/theaid` (as spoken).
    - Contains numerous testimonials from:
        - Students.
        - Teachers.
        - Parents.
    - He stresses:
        - Ultimately, the only testimonial that truly matters for a given family is **their own** result.

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5. The Six-Tier Math Program

Dr. Hane describes in detail a **six-tier** math program, available as a downloadable PDF syllabus.

Tier 1 – Using a Scientific Calculator & Pre-Algebra Review

- Teaches students to use a **TI-30XA scientific calculator** in **16 lessons**.
- Emphasis:
    - This calculator work is **kinesthetic** (hands-on) and quickly changes student psychology:
        - Helps students who fear math to feel more capable and empowered.
    - Students watch **short tutorial videos** (5–10 minutes), hosted on Amazon Web Services, available 24/7:
        - They can pause, rewind, and rewatch as needed.
    - Each video is accompanied by:
        - Notes.
        - Exercises (PDFs to print or cheaply print through Amazon).
- Also includes a **pre-algebra review**, ensuring students entering ~7th/8th grade have the necessary foundation.

Tier 2 – Practical Workforce Math (Algebra, Geometry, Trigonometry)

Focused on **practical math needed for the workforce** (also the core content of Workforce Math):

1. **Practical Algebra – 10 Lessons**
    - He claims this is the **only algebra most people ever truly need** for life and work.
    - Even though he has a PhD in math, he says this is the algebra he actually used to start and run multiple companies.
2. **Practical Geometry – 19 Lessons**
    - Covers:
        - Length.
        - Area.
        - Volume.
    - Teaches geometry in tandem with algebra.
3. **Practical Trigonometry – 7 Lessons**
    - Trig historically scares many students, but he insists:
        - Only these **7 lessons** are needed for practical applications.
    - Complements algebra and geometry to handle problems involving angles.

Time commitment and payoff:

- Tier 2 typically takes **about one semester**.
- Upon completion, he claims:
    - Students know more practical mathematics than **95% of U.S. high school graduates** (as of 2026).
    - This applies especially to everyday and workforce contexts.

Tier 3 – College-Prep Math (SAT/ACT)

- For **college-bound students**.
- Provides additional math needed to:
    - Perform well on standardized tests like the **SAT** and **ACT**.
- Uses the same format:
    - Tutorial videos.
    - Notes and exercises.
    - A forum for questions.
- Typically takes **about one year**.

Tier 4 – STEM Pre-Calculus with Wolfram|Alpha

- For students pursuing **science or engineering**.
- Deepens earlier topics at a **much more advanced level**, but:
    - He heavily integrates **Wolfram|Alpha**, the computational tool introduced in 2009.
- Claims:
    - Traditional pre-calculus is very hard because it uses “manual” techniques.
    - With Wolfram|Alpha, pre-calculus becomes significantly easier and more aligned with how modern scientists and engineers actually work.

Calculus (Within the Six-Tier Framework)

- Distinguishes **differential calculus** and **integral calculus**.
- Notes that:
    - Traditionally, **integral calculus** and the **Fundamental Theorem of Calculus** have washed many students out of engineering programs because of the difficulty of manual computation.
- With Wolfram|Alpha:
    - He asserts the difficulty drops dramatically (“from a difficulty level of maybe 10 down to 2” – approximate analogy).
    - Students can learn **both differential and integral calculus in one semester**.

Differential Equations in High School

- Normally taught in **second-year college**.
- He claims:
    - With Wolfram Alpha and his approach, students can learn **differential equations in one semester** while still in **high school**.
- Reports:
    - Some of his students who complete the full six tiers are better prepared for top engineering and science schools (e.g., MIT, the Air Force Academy) than typical public-school graduates.
    - They don’t need to be geniuses—just reasonably capable and willing to work.

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6. Instructional Model: Tutor + Coaches + LMS

Dr. Hane's delivery model emphasizes:

- **Tutor:**
  - He serves as the *virtual tutor* via pre-recorded, short tutorial videos.
  - Available "24/7" through the LMS.
- **Coaches (at the co-op and in families):**
  - Parents, co-op leaders, and possibly math teachers serve as *coaches*.
  - Coaches:
    - Do **not** need deep math knowledge.
    - Need to be able to motivate and manage students.
  - Math teachers, if present, can:
    - Learn new math and tools.
    - Serve both as coaches and counselors.
- **Parents as Learners:**
  - Many parents may want to take **at least Tiers 1–2** themselves to:
    - Better understand what their children are learning.
    - Improve their own math skills if desired.
- **Learning Management System (LMS):**
  - Tracks exactly what students are doing.
  - Gives visibility to:
    - Coaches.
    - Parents.
  - Provides a structured framework of:
    - Lessons.
    - PDFs.
    - Exercises.
    - Progress tracking.

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7. Comparing Curricula and Evaluating Programs

Dr. Hane urges co-ops to **compare their current math curriculum** with Triad Math using a **checklist PDF** he provides ("Compare your curriculum").

- The checklist lists features and criteria that he believes are essential for a modern, optimal program.
- He claims:
    - **Triad Math checks every box**.
    - Many popular programs (e.g., Saxon Math, Math-U-See, Teaching Textbooks, and others he alludes to) do not.
- Instructions to co-op leaders:
    - Go through the checklist line by line:
        - Mark which criteria your current program meets or fails.
    - If a current program somehow checks all the boxes:
        - He suggests it is likely **much more expensive** than his program, often costing **hundreds of dollars per month**.

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8. Pricing, Trials, and Access

He presents the program as **surprisingly inexpensive**, especially for the value he claims it delivers:

- **Basic Pricing:**
    - **$9 per month per student**, or
    - **$99 per year per student**.
- **Family Pricing:**
    - Around **$30 per month per family** for multiple students (including the parent).
- At this low price:
    - Students get access to the full program, including him as a virtual tutor.
    - The entire six-tier curriculum can eventually be accessed depending on student path.

Free Trial Opportunity:

- He emphasizes a **risk-free trial**:
    - Co-ops can put:
        - Struggling students.
        - Strong students.
        - Advanced students.
        - Possibly a parent or two.
        - Into the program for **one or two months** at effectively no risk.
    - Only after they see the results would they need to pay.
- He believes it would be **"a sin not to at least try it"**, given:
    - The low cost.
    - The potential for significant improvement.
    - The availability of free books and trial access.

9. How to Get Started

He gives a concrete **call to action** for homeschool co-op leaders:

1. **Read the Two Free Books:**
    - "Golden Rule Math for All God's Children"
    - "Public School Math is Destroying the USA: How and Why"
2. **Study the Six-Tier Syllabus PDF:**
    - Understand what content is in each tier.
    - Match it to the needs of their student population.
3. **Use the Curriculum Comparison Checklist:**
    - Compare Triad Math with whatever they are currently using.
4. **Involve a Math-Savvy Person:**
    - If there is an engineer, doctor, or someone with strong math/science background in the co-op:
        - Have them review the material and discuss it with him (e.g., in a Zoom meeting).
5. **Contact Him Directly:**
    - Email him, identify themselves as a co-op, and:
        - Set up a Zoom call.
        - Discuss the co-op's current program and goals.
        - Plan implementation and coaching.
6. **Pilot the Program:**
    - Start with a small set of students across skill levels.
    - Monitor progress via the LMS.
    - Decide whether to adopt it more broadly, possibly first as a **supplement** and then as a **replacement**.

10. Critique of the Existing System and Analogies

To illustrate the difference between his program and typical math education, Dr. Hane uses several analogies:

1. **Smartphone vs. Landline:**
    - Current public-school-style math = **old landline phone**:
        - Limited functionality.
        - Harder to use for modern needs.
    - Triad Math = **smartphone**:
        - Can do vastly more.
        - Uses modern capabilities (like Wolfram|Alpha, online video, LMS).
        - Fits how people actually work now.
2. **19th-Century Tools vs. Modern Power Tools:**
    - Traditional math tools = **manual carpentry tools from the 1800s**:
        - Effective in their era, but:
            - Hard to learn.
            - Slow and physically demanding.
    - Triad Math tools (e.g., calculators, Wolfram|Alpha) = **modern electric tools**:
        - Example: old hand drill vs. modern electric drill.
        - Easier, faster, and more productive.
    - His point:
        - Current curricula still insist students master the old manual techniques before accessing modern tools.
        - He sees that as analogous to forcing carpenters to use only 1800s tools today.
3. **Systemic Inertia:**
    - He suggests public schools are unlikely to change quickly because of:
        - Teachers' unions.
        - Publishers who make billions of dollars on textbooks.
        - Institutional inertia.
    - Therefore, homeschoolers and co-ops are, in his view, **the vanguard** who can adopt better approaches first.

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11. Motivation and Mission

Dr. Hane closes by emphasizing his **personal motivation**:

- He states he is **not primarily motivated by money**, though the program must charge something to cover costs:
    - Technology infrastructure.
    - Content development.
    - Delivery systems.
- He says he **loves students** and wants to see them succeed.
- He views it as part of his ethical duty (invoking the "golden rule"):
    - If he were in a co-op leader's position, knowing what he knows now:
        - He would feel compelled to examine and try the program.
- He acknowledges uncertainty about whether they can **always** keep the price as low as $9/month, but hopes to maintain it if enough students enroll.

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12. Overall Message for Homeschool Co-ops

Summarizing his core pitch to homeschool co-ops:

- **Problem:**
    - Most co-ops (even those using online programs or tutors) are still essentially teaching **public-school-style math** using outdated 20th-century methods and textbooks.
    - This leads to:
        - Struggling and discouraged students.
        - Wasted time on manual skills that aren't how math is practiced today.
        - Insufficient preparation for both workforce and STEM paths.
- **Solution:**
    - Adopt a **modern, tool-centered, stepwise math curriculum** that:
        - Uses calculators and Wolfram|Alpha.
        - Delivers instruction through short, on-demand video lessons.
        - Relies on local **coaches** rather than requiring math-expert teachers.
        - Emphasizes *practical math first* (for everyone), *then* advanced math for those who need it.
- **Benefits:**
    - More students learn more math, more easily.
    - Stronger preparation for:
        - Workforce roles (Tier 2).
        - College readiness (Tier 3).
        - STEM programs (Tiers 4–6 with calculus and differential equations).
    - Dramatically lower cost than most traditional or tutoring-based solutions.
    - Transparent tracking and structure through a learning management system.