## pre calculus final exam cheat sheet

pre calculus final exam cheat sheet is an essential tool for students aiming to succeed in their precalculus assessments. This cheat sheet consolidates critical concepts, formulas, and problem-solving strategies, making it a valuable resource for quick revision before the exam. In this comprehensive guide, we will explore the most important topics to include in a cheat sheet, effective strategies for using it, and tips for mastering precalculus concepts. By the end of this article, you will be well-equipped to create your own personalized cheat sheet that enhances your study sessions and exam performance.

- Understanding the Scope of Precalculus
- Key Concepts to Include in Your Cheat Sheet
- Formulas and Theorems
- Tips for Effective Use of the Cheat Sheet
- Practice Problems and Application
- Resources for Further Study

#### Understanding the Scope of Precalculus

Precalculus serves as a bridge between algebra and calculus, encompassing a range of topics that prepare students for the challenges of higher mathematics. It typically includes functions, complex numbers, trigonometry, vectors, sequences, and series. Understanding these concepts is crucial, as they form the foundation for calculus and advanced mathematical reasoning.

In order to effectively study precalculus, students must familiarize themselves with the major topics typically covered in their courses. This understanding is critical when constructing a cheat sheet, as it allows students to prioritize the most relevant and challenging concepts.

### Importance of a Cheat Sheet

A cheat sheet is not just a collection of formulas; it is a strategic summary of essential information that can improve recall and understanding during exams. By condensing complex topics into bite-sized pieces, students can enhance their study efficiency and retention.

Moreover, the act of creating a cheat sheet itself reinforces learning. Students who engage with the material while compiling their notes are more likely to remember the content and apply it during tests.

## Key Concepts to Include in Your Cheat Sheet

When crafting your pre calculus final exam cheat sheet, consider including the following key concepts:

- Function Types and Properties
- Graphs of Functions
- Trigonometric Identities
- Polynomial and Rational Functions
- Exponential and Logarithmic Functions
- Sequences and Series
- Conic Sections

Each of these topics plays a significant role in precalculus and should be summarized clearly on your cheat sheet.

#### Function Types and Properties

Functions are a fundamental aspect of precalculus. Students should understand various function types, including linear, quadratic, polynomial, rational, exponential, and logarithmic functions.

Key properties to note include:

- Domain and Range: Identify the possible inputs (domain) and outputs (range) for each function type.
- Even and Odd Functions: Recognize the symmetry properties of functions.
- Composite and Inverse Functions: Understand how to combine functions and find their inverses.

## Graphs of Functions

Graphing functions visually represents their behavior and is an essential skill. Your cheat sheet should include:

- Key points: Intercepts, vertex (for parabolas), and asymptotes (for rational functions).
- $\mbox{-}$  Behavior: Increasing and decreasing intervals, and end behavior for polynomials.

#### Formulas and Theorems

A significant section of any cheat sheet should be dedicated to important formulas and theorems relevant to the precalculus curriculum.

#### **Essential Formulas**

```
Include the following formulas: 
 - Quadratic Formula: \(x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}\) for solving quadratic equations. 
 - Distance Formula: \(d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}\). 
 - Midpoint Formula: \(M = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right)\).
```

#### Trigonometric Identities

```
Trigonometric identities are crucial for solving various problems. Include: - Pythagorean Identities: \( \sin^2(x) + \cos^2(x) = 1 \). - Angle Sum and Difference Formulas: Such as \( \sin(a \pm b) = \sin(a) \cos(b) \pm \cos(a) \sin(b) \).
```

### Tips for Effective Use of the Cheat Sheet

To maximize the effectiveness of your cheat sheet, consider the following strategies:

#### Organize by Topic

Arrange your cheat sheet thematically to make it easy to locate information quickly. Use headings and bullet points for clarity.

#### Practice with Your Cheat Sheet

As you study, use your cheat sheet to solve practice problems. This will reinforce your understanding and ensure you are comfortable with the material.

## Review Regularly

Regular review of your cheat sheet helps solidify your knowledge. Spend time going over each section, ensuring you understand how to apply each concept and formula.

## Practice Problems and Application

Applying your knowledge through practice problems is essential in precalculus. Include a few representative problems on your cheat sheet as examples.

#### Types of Practice Problems

Consider these problem types:

- Function Evaluation: Given a function, find its value for specific inputs.
- Solving Equations: Use the quadratic formula to solve equations.
- Graphing: Sketch the graph of a function based on its properties.

#### Using Practice Problems Effectively

Work through these problems without looking at your cheat sheet first. Then, compare your solutions with the cheat sheet to identify areas for improvement. This method promotes active learning and helps reinforce concepts.

## Resources for Further Study

In addition to your cheat sheet, utilizing other resources can enhance your understanding of precalculus concepts.

#### Online Platforms

Consider using online educational platforms that provide video tutorials, practice exercises, and interactive quizzes. Websites like Khan Academy and Coursera offer valuable content tailored for precalculus students.

#### Textbooks and Study Guides

Utilizing a precalculus textbook or study guide can provide in-depth explanations and additional practice problems. Look for books that include worked examples to better understand complex topics.

## Closing Thoughts

Creating a pre calculus final exam cheat sheet is an effective way to consolidate your knowledge and prepare for your exam. By focusing on key concepts, formulas, and problem-solving strategies, you can create a personalized resource that aids in your study sessions. Remember that the process of crafting the cheat sheet itself reinforces learning, making it a valuable exercise in preparation.

As you approach your final exam, leverage your cheat sheet alongside other resources to ensure a comprehensive understanding of precalculus topics.

### Q: What should I include in my pre calculus final

#### exam cheat sheet?

A: Your cheat sheet should include key concepts such as function types, properties, important formulas, trigonometric identities, and sample problems for practice.

# Q: How do I effectively use my cheat sheet during study sessions?

A: Organize your cheat sheet by topic, practice problems using it, and review it regularly to reinforce your understanding of precalculus concepts.

## Q: Are there any specific formulas I must memorize for the exam?

A: Yes, important formulas include the quadratic formula, distance formula, midpoint formula, and various trigonometric identities.

## Q: How can I improve my understanding of precalculus concepts?

A: Utilize online resources, textbooks, and practice problems. Regularly engage with the material and use your cheat sheet for review.

## Q: What is the benefit of creating my own cheat sheet?

A: Creating your own cheat sheet allows you to personalize the information, enhancing retention and understanding as you actively engage with the material.

#### Q: Can I use my cheat sheet during the exam?

A: Check with your instructor or exam guidelines, as policies on the use of cheat sheets vary by institution and exam type.

## Q: How often should I review my cheat sheet?

A: Regular review is essential; aim to revisit your cheat sheet multiple times a week leading up to the exam for the best retention.

# Q: What types of problems should I practice for the precalculus exam?

A: Focus on function evaluation, solving equations, graphing functions, and applying key concepts in various contexts.

#### Q: How does creating a cheat sheet aid in learning?

A: The process of compiling a cheat sheet reinforces knowledge, improves recall, and helps identify areas where further study may be needed.

# Q: What online resources can help with precalculus study?

A: Platforms like Khan Academy, Coursera, and educational YouTube channels offer valuable tutorials, practice exercises, and interactive content for precalculus students.

#### **Pre Calculus Final Exam Cheat Sheet**

Find other PDF articles:

 $\underline{http://www.speargroupllc.com/business-suggest-011/files?ID=jQI00-2786\&title=centennial-bank-business-credit-card.pdf}$ 

pre calculus final exam cheat sheet: Pre-Calculus All-in-One For Dummies Mary Jane Sterling, 2023-10-10 The easy way to understand and retain all the concepts taught in pre-calculus classes Pre-Calculus All-in-One For Dummies is a great resource if you want to do you best in Pre-Calculus. Packed with lessons, examples, and practice problems in the book, plus extra chapter quizzes online, it gives you absolutely everything you need to succeed in pre-calc. Unlike your textbook, this book presents the essential topics clearly and concisely, so you can really understand the stuff you learn in class, score high on your tests (including the AP Pre-Calculus exam!), and get ready to confidently move ahead to upper-level math courses. And if you need a refresher before launching into calculus, look no further—this book has your back. Review what you learned in algebra and geometry, then dig into pre-calculus Master logarithms, exponentials, conic sections, linear equations, and beyond Get easy-to-understand explanations that match the methods your teacher uses Learn clever shortcuts, test-taking tips, and other hacks to make your life easier Pre-Calculus All-in-One For Dummies is the must-have resource for students who need to review for exams or just want a little (or a lot of!) extra help understanding what's happening in class.

pre calculus final exam cheat sheet: CliffsAP Calculus AB and BC, 3rd Edition Dale W Johnson, Kerry J King, 2002-05-31 CliffsAP study guides help you gain an edge on Advanced Placement\* exams. Review exercises, realistic practice exams, and effective test-taking strategies are the key to calmer nerves and higher AP\* scores. CliffsAP Calculus AB and BC is for students who are enrolled in AP Calculus AB and/or BC or who are preparing for the Advanced Placement Examination in these areas. The Calculus BC exam includes all of the material in the Calculus AB exam plus additional selected topics, notably on sequences and series. Inside, you'll find test-taking strategies, a clear explanation of the exam format, a look at how exams are graded, and more: A topic-by-topic look at what's on the exam Tips for test preparation Suggested approaches to free-response and multiple-choice questions Two full-length practice tests Answers to frequently asked questions about the exam Sample questions (and answers!) and practice tests reinforce what you've learned in areas such as limits and continuity, antiderivatives and definite integrals, and polynomial approximations. CliffsAP Calculus AB and BC also includes information on the following: Trigonometric functions Algebraic techniques for finding limits Derivatives of exponential functions

Differential equations and slope fields Radius and interval of convergence of power series Numerical solutions to differential equations: Euler's Method This comprehensive guide offers a thorough review of key concepts and detailed answer explanations. It's all you need to do your best — and get the college credits you deserve. \*Advanced Placement Program and AP are registered trademarks of the College Board, which was not involved in the production of, and does not endorse this product.

pre calculus final exam cheat sheet: The Air George Sullivan, 2005-10 The Air focuses upon telepathic communication and its influence upon two teenagers, Schuyler Ballantine and Julie Crystal Flowers, as they mature into adulthood. A concept called air phenomena illustrates Schuyler's telepathic gift. Due to his air phenomena, Julie along with the rest of the world views his entire life via telepathic communication. Schuyler is The Air and whatever he sees, hears, feels, and thinks is transmitted throughout her mind along with everyone else's mind. Schuyler and Julie use his telepathic gift to communicate to one another even if geographically separated. Storyline involves how guidance from Julie's telepathic transmission prepares Schuyler to accomplish goals through his senior year at a Kentucky high school, an Army assignment in Korea, and pharmacy employment after military discharge. Later, focus is directed toward Julie as a college student athlete. She is a drama student and basketball player at a small university nearby her hometown in Louisiana. With Schuyler discharged from the Army and in attendance at her games, Julie's basketball career takes center stage as her school challenges the basketball world at a national tournament.

**pre calculus final exam cheat sheet:** *Annual Catalogue* United States Air Force Academy, 1981

pre calculus final exam cheat sheet: Physics DeMYSTiFieD, Second Edition Stan Gibilisco, 2010-12-06 Understanding PHYSICS just got a whole lot EASIER! Stumped trying to make sense of physics? Here's your solution. Physics Demystified, Second Edition helps you grasp the essential concepts with ease. Written in a step-by-step format, this practical guide begins by covering classical physics, including mass, force, motion, momentum, work, energy, and power, as well as the temperature and states of matter. Electricity, magnetism, and electronics are discussed as are waves, particles, space, and time. Detailed examples, concise explanations, and worked problems make it easy to understand the material, and end-of-chapter quizzes and a final exam help reinforce learning. It's a no-brainer! You'll learn about: Scientific notation, units, and constants Newton's laws of motion Kirchhoff's laws Alternating current and semiconductors Optics Relativity theory Simple enough for a beginner, but detailed enough for an advanced student, Physics Demystified, Second Edition helps you master this challenging and diverse subject. It's also the perfect resource to prepare you for higher-level physics classes and college placement tests.

pre calculus final exam cheat sheet: The Publishers Weekly, 1904

**pre calculus final exam cheat sheet:** *My Life's Journey with Bipolar Disorder* Joann M Stuhr, 2012-08-01 My Life's Journey With Bipolar Disorder is the memoir of an extraordinary woman. Joann M. Stuhr writes about the path her life has taken from its farm roots in Iowa to New York, the Pacific Northwest, and on to Europe and Japan. Throughout it all, she had a secret. Joann was living with the condition we now recognize as bipolar disorder. How she coped and lived a successful life as a math teacher and a computer programmer is only part of her fascinating story. She wrote this book to help others with bipolar disorder to erase the stigma.

pre calculus final exam cheat sheet:  $\underline{\text{Precalculus}}$  Mustafa A. Munem, James P. Yizze, 2002-10-07

pre calculus final exam cheat sheet: Transformational Change Efforts: Student Engagement in Mathematics through an Institutional Network for Active Learning Wendy M. Smith, Matthew Voigt, April Ström, David C. Webb, W. Gary Martin, 2021-05-05 The purpose of this handbook is to help launch institutional transformations in mathematics departments to improve student success. We report findings from the Student Engagement in Mathematics through an Institutional Network for Active Learning (SEMINAL) study. SEMINAL's purpose is to help change agents, those looking to (or currently attempting to) enact change within mathematics departments

and beyond—trying to reform the instruction of their lower division mathematics courses in order to promote high achievement for all students. SEMINAL specifically studies the change mechanisms that allow postsecondary institutions to incorporate and sustain active learning in Precalculus to Calculus 2 learning environments. Out of the approximately 2.5 million students enrolled in collegiate mathematics courses each year, over 90% are enrolled in Precalculus to Calculus 2 courses. Forty-four percent of mathematics departments think active learning mathematics strategies are important for Precalculus to Calculus 2 courses, but only 15 percnt state that they are very successful at implementing them. Therefore, insights into the following research question will help with institutional transformations: What conditions, strategies, interventions and actions at the departmental and classroom levels contribute to the initiation, implementation, and institutional sustainability of active learning in the undergraduate calculus sequence (Precalculus to Calculus 2) across varied institutions?

pre calculus final exam cheat sheet: Mobile Learning and STEM Helen Crompton, John Traxler, 2015-12-07 In recent years, there has been a renewed focus on STEM education in the United States, fueled by evidence that young learners' competencies in science, technology, engineering, and mathematics are falling behind those of their global peers. Scholars and practitioners are beginning to utilize the new pedagogical opportunities offered by mobile learning to improve the successes of teachers and K-12 students across STEM subjects. Mobile Learning and STEM: Case Studies in Practice is a comprehensive collection of case studies that explore mobile learning's support of STEM subjects and that utilize mobile technology to facilitate unique and effective K-12 teaching and learning experiences. In addition to its focus on STEM achievement for researchers, this volume is a resource for teachers working to implement mobile learning initiatives into their classrooms. Mobile Learning and STEM also includes research that is applicable to classrooms in nations around the world, where few students from underrepresented racial and socioeconomic backgrounds are entering into STEM jobs. Concluding with a summary of its research and its implications to future scholarship and practice, this book is a springboard for practitioners, specialists, higher education instructors, and researchers who want to establish better practices in schools and raise student achievement in STEM subjects.

pre calculus final exam cheat sheet: Precalculus Cheat Sheet Wesolvethem, 2017-06-12 The Ultimate Cheat Sheets for Math & Physics are designed to assist college students, in a STEM field, with their studies. All of the most important equations, formulas and identities are isolated in the series. The books follow the same order as the standard college/university curriculums. The WeSolveThem Team is a group of highly trained mathematicians and physicists with years of experience tutoring one-on-one at the college level. Our team is made up of students and professionals that are dedicated to helping others better understand complex material. We specifically choose employees that have an interest in a career of research and professorship.

**pre calculus final exam cheat sheet: Eye on Apply** Princeton Review (Firm), 2004 In six compelling narratives, MTV's Real World meets high-stakes college admissions as high school seniors share the diaries they wrote while trying to get into college.

pre calculus final exam cheat sheet: MAA Notes, 1983

pre calculus final exam cheat sheet: Research in Collegiate Mathematics Education IV Ed Dubinsky, 2000 This fourth volume of Research in Collegiate Mathematics Education (RCME IV) reflects the themes of student learning and calculus. Included are overviews of calculus reform in France and in the U.S. and large-scale and small-scale longitudinal comparisons of students enrolled in first-year reform courses and in traditional courses. The work continues with detailed studies relating students' understanding of calculus and associated topics. Direct focus is then placed on instruction and student comprehension of courses other than calculus, namely abstract algebra and number theory. The volume concludes with a study of a concept that overlaps the areas of focus, quantifiers. The book clearly reflects the trend towards a growing community of researchers who systematically gather and distill data regarding collegiate mathematics' teaching and learning. This series is published in cooperation with the Mathematical Association of America.

pre calculus final exam cheat sheet: Mathematical Modelling C Haines, P Galbraith, W Blum, S Khan, 2007-08-01 This book continues the ICTMA tradition of influencing teaching and learning in the application of mathematical modelling. Each chapter shows how real life problems can be discussed during university lectures, in school classrooms and industrial research. International experts contribute their knowledge and experience by providing analysis, insight and comment whilst tackling large and complex problems by applying mathematical modelling. This book covers the proceedings from the Twelfth International Conference on the Teaching of Mathematical Modelling and Applications. - Covers the proceedings from the Twelfth International Conference on the Teaching of Mathematical Modelling and Applications - Continues the ICTMA tradition of influencing teaching and learning in the application of mathematical modelling - Shows how real life problems can be discussed during university lectures, in school classrooms and industrial research

**pre calculus final exam cheat sheet: Student Handbook** Stephen Armstrong, Pamela K. Lamb, Mark Anestis, William Ma, Barbara L. Murphy, 2000 The Student Handbook is designed to provide students with ready access to information, with problem-solving techniques and study skill guides that enable them to utilize the information in the most efficient manner.--Amazon.com.

pre calculus final exam cheat sheet: Ain't Nobody Be Learnin' Nothin' Caleb Rossiter, 2015-04-01 America's most challenged families are segregated into high-poverty schools. Despite a 20-year experiment in nationwide school reform, few students make it over the slippery bridge to the middle class. In this book you will meet the students, families, teachers, and administrators who struggle inside this failed system, and consider proposals to give them a fighting chance. Caleb Rossiter recounts his experiences as a math teacher of African-American 9th and 10th graders in the poorest wards of the nation's capital. He describes the obstacles facing teachers who are held accountable for the performance of students whose average skills are years below grade level. Rossiter, also a professor of statistics at American University, explains how the No Child Left Behind law allows school districts to use so-called "data-driven" measures of teacher and even school effectiveness that ignore learning deficiencies and behavior patterns that began before a child's first day in school. These measures violate basic norms of statistical analysis, yet are used to make comparisons and draw policy-level conclusions. He exposes the pretense of success claimed by "school reformers" who pressure teachers to award unearned grades and, if they won't, paper over failure with imitation classes euphemistically termed credit recovery. He then offers reasonable solutions that would enable children who attend school ready to learn to be freed from the disruption of poorly socialized peers, who can be better served in alternative settings.

pre calculus final exam cheat sheet: Hilarious History of Computers Lukáš Mikula, 2024-06-01 Step into a world where humour meets technology in the most unexpected ways. Hilarious History of Computers is an entertaining journey through the evolution of computing, filled with laugh-out-loud anecdotes and fascinating stories that reveal the guirky side of technological advancements. From the colossal Colossus of the 1940s to the revolutionary microprocessors of the 1970s, the author takes you on a wild ride through time, highlighting the absurdities and marvels of computer history. Discover the heroic tales of Silicon Superheroes, the whimsical Tech Trinket Chronicles, and the epic fails in The Comedy of Errors. Each chapter delves into a different aspect of computer evolution: Silicon Superheroes: Meet the early giants like ENIAC and the first microprocessors that paved the way for modern computing. Tech Trinket Chronicles: Explore the guirky gadgets and innovations that, while sometimes short-lived, left an indelible mark on tech history. Masters of the Universe: Get to know the tech titans like IBM, Apple, and Microsoft, whose pioneering efforts shaped the digital age. The Comedy of Errors: Laugh at the missteps and blunders that prove even the brightest minds can have off days. Gaming Escapades: Relive the highs and lows of the gaming industry, from the E.T. video game disaster to the triumph of the PlayStation. Social Media Shenanigans: Witness the rise of social media and the hilarious mishaps that came with it. AI (Mis)Adventures: Discover artificial intelligence's unpredictable journey, filled with groundbreaking achievements and amusing failures. Perfect for tech enthusiasts, history buffs, and anyone who enjoys a good laugh, this book combines meticulous research with a humorous narrative that brings

the history of computers to life. Whether reminiscing about your first PC or curious about the tech world, Hilarious History of Computers is a must-read. Join the author on this hilarious and enlightening journey through the evolution of technology. Prepare to laugh, learn, and perhaps even marvel at how far we've come from the days of room-sized machines to the smartphones in our pockets.

**pre calculus final exam cheat sheet: Pre-Calculus For Dummies** Krystle Rose Forseth, Christopher Burger, Michelle Rose Gilman, Deborah J. Rumsey, 2008-04-07 Offers an introduction to the principles of pre-calculus, covering such topics as functions, law of sines and cosines, identities, sequences, series, and binomials.

pre calculus final exam cheat sheet: Classroom Assessment Techniques Thomas A. Angelo, Todd D. Zakrajsek, 2024-06-26 Classroom Assessment Techniques: Formative Feedback Tools for College and University Teachers A practical, research-based handbook for using assessment to improve learning. This completely revised and updated third edition of Classroom Assessment Techniques provides a research-based, engaging guide to assessing student learning where it matters most—at course and classroom levels. Informed by the latest international educational research and 30 years of classroom assessment practice, this practical handbook is designed for postsecondary teachers from all disciplines, faculty and academic developers, and assessment professionals. It offers field-tested guidance, tools, and advice for planning, designing, and implementing formative assessment in face-to-face, hybrid, and fully online classrooms, analyzing resulting data, and using that data to improve student learning. Classroom Assessment Techniques, 3rd Edition, is a practical, clearly written handbook for busy professionals. It contains a wealth of useful resources, including: 50-plus CATs (classroom assessment techniques) - flexible formative assessment tools easily adaptable for use in a wide range of disciplines and contexts. Case studies and examples illustrating how college and university faculty have applied these techniques to improve learning A new "Course Learning Outcomes Inventory" (CLOI)—a self-assessment tool for identifying and prioritizing the most relevant learning outcomes to assess The original "Teaching Goals Inventory" (TGI) which offers an alternate, teaching-focused approach to setting assessment priorities Multiple ways to quickly find the most appropriate tool. CATs are indexed by discipline examples, Bloom's Taxonomy, Biggs and Tang's SOLO Taxonomy, the CLOI, and the TGI Brief chapters explaining what formative assessment is, how it can improve student learning, how to gather and provide formative feedback, how to link classroom assessment with broader/other assessment efforts, and how to collaborate with students and colleagues Each CAT provides a brief, self-contained "recipe" including a description, steps for implementation, dos and don'ts, and relevant references

## Related to pre calculus final exam cheat sheet

| $000$ $\mathbf{pre}$ $000000000000000000000000000000000000$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>html</b> [] <b>pre</b> [] [] [] - [] [] pre [] [] HTML < pre > [] [] [] [] [] [] [] [] [] [] [] [] []                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| prepre                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| []+sid[]sit[][][][][]"+ent[][=[][][][][][][][][][][][][][][][][][                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| $ \     \   presentation \     \     \   pre \     \     \     \   pre \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \     \   $ |
| presentation [][] pre[][][][][][][][][][][][][][][][][][][]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>LM-studio</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

```
0+sid_sit_000000"0"+ent_0=00000=000 000000
00000000 Pre-A000000A00 - 00 000000pre A00000000pre-A000000A00 00000preA00000
 \  \, || \  \, presentation \  \, || \  \, || \  \, pre \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, || \  \, ||
```

```
00000000 Pre-A000000A00 - 00 000000pre A00000000pre-A000000A00 00000preA00000
LM-studio
0+sid0sit0000000"0"+ent00=00000=000 000000
00000000 Pre-A000000A00 - 00 000000pre A00000000pre-A000000A00 00000preA00000
0+sid_sit_000000"0"+ent_0=00000=000 000000
00000000 Pre-A000000A00 - 00 000000pre A00000000pre-A000000A00 00000preA00000
```

**LM-studio** 

```
00000000 Pre-A000000A00 - 00 000000pre A00000000pre-A000000A00 00000preA00000
0+sid_sit_000000"0"+ent_0=00000=000 000000
00000000 Pre-A000000A00 - 00 000000pre A00000000pre-A000000A00 00000preA00000
0+sid_sit_000000"0"+ent_0=00000=000 000000
00000000 Pre-A000000A00 - 00 000000pre A00000000pre-A000000A00 00000preA00000
LM-studio
```

Back to Home: <a href="http://www.speargroupllc.com">http://www.speargroupllc.com</a>