

2024 Academic Super Bowl
Senior Fine Arts
Final Study Guide
The 1980's and 1990's



- I. Visual Fine Arts - 50%
 - A. Artists
 - 1. Jean-Michel Basquiat
 - 2. Jenny Holzer
 - 3. Sol LeWitt
 - 4. Maya Lin
 - 5. Nam June Paik
 - 6. Faith Ringgold
 - 7. Bill Viola
 - B. Architects
 - 1. Michael Graves
 - 2. I.M. Pei
- II. Music - 50%
 - A. Film music (25%)
 - 1. John Williams (12.5%)
 - i. The Empire Strikes Back (1980)
 - 1. ["Imperial March"](#)
 - ii. Raiders of the Lost Ark (1981)
 - 1. ["The Raiders March"](#)
 - 2. ["The Basket Game"](#)
 - 3. ["Ride to the Nazi Hideout"](#)
 - iii. Return of the Jedi (1983)
 - 1. ["Darth Vader's Death"](#)
 - 2. Danny Elfman (12.5% of fine arts)
 - i. Batman (1989)
 - 1. ["Main Title"](#) (aka "Bat-theme" or "The Batman Theme")
 - 2. ["Roof Fight"](#)
 - 3. ["First Confrontation"](#)
 - 4. ["Clown Attack"](#)
 - 5. ["Love Theme"](#)
 - 6. Integration of Stephen Foster's "Beautiful Dreamer"
 - 7. Integration of soundtrack songs by Prince
 - 8. Joker's appropriation of musical material
 - B. Music, technology, and intellectual property (25%)
 - 1. Katz's views (6%)
 - i. Cultural differences and mass mediation of music
 - ii. Impact of technology on music
 - iii. Noise vs. music

2. Hip-Hop, Sampling, & IP (6%)
 - i. [“Amen Brother”](#) by The Winstons (1969)
 - ii. [“I Desire”](#) by Salt N Pepa (1986)
 - iii. [“Casualties of War”](#) by Eric B. and Rakim (1992)
 - iv. [“Fight the Power”](#) by Public Enemy (1990)
 - v. [“Rapper’s Delight”](#) by Sugar Hill Gang (1979)
 - vi. Parody, sampling, & IP
 1. “Pastime Paradise” by Stevie Wonder (1976)
 2. “Gangsta’s Paradise” by Coolio (1995)
 3. “Amish Paradise” by Weird Al (1996)
3. Time (6%)
 - i. Chopped and Screwed
 1. [“In the Air Tonight”](#) from Chapter 178 In the Zone by DJ Screw (1996) - Compare to original [“In the Air Tonight”](#) by Phil Collins (1981)
 2. [“Dreaming About You”](#) from Chapter 214 Old School by DJ Screw (1994) - compare to the [original by the Blackbyrds](#)
 - ii. Number Pieces by John Cage
 1. [Five](#) (1988)
 2. [Seven²](#) (1990)
 3. [Seventy-Four¹](#) (1992)
4. Speech melody and minimalism (6%)
 - i. [“To the Earth”](#) by Frederic Rzewski, performed by Evelyn Glennie
 1. [Video showing what the performance looks like](#) (not embeddable)
 2. [Recording that will be used at competitions](#) (embeddable)
 - ii. Different Trains by Steve Reich (1988)
 1. [America, Before the War](#)
 2. [Europe, During the War](#)
 - iii. [The Cave](#) by Steve Reich (1993)

Sources: Visual Art:
 The Art Story, www.theartstory.org;
 Encyclopedia of Indianapolis, <https://indyencyclopedia.org/>; (search People and Places)
 Britannica Online <https://www.britannica.com/topic/Britannica-Online>
 Newfields <https://discovernewfields.org/>;
 Smarthistory <https://smarthistory.org/>;
 Wikipedia

Music Sources on the next page

Sources: Music:

Audissino, Emilio. The Film Music of John Williams: Reviving Hollywood’s Classical Style. University of Wisconsin Press, 2021. ISBN-10: 0299332349; ISBN-13: 978-0299332341. (Chapters 2,3,4,8,9,10)

Halfyard, Janet K. Danny Elfman’s Batman: A Film Score Guide. Scarecrow Press, 2004. ISBN-10: 0810851261; ISBN-13: 978-0810851269.

Orosz, Jeremy. “John Williams: Paraphraser or Plagiarist?” Journal of Musicological Research, vol. 34, no. 4, Oct. 2015, pp. 299–319. EBSCOhost, <https://doi.org/10.1080/01411896.2015.1082064> or <https://www.jstor.org/stable/3108403> (if these links don’t work, search for the article on <https://www.inspire.in.gov>)

Haskins, Rob. “Anarchism and the Everyday: John Cage’s Number Pieces.” (2017). <https://robhaskins.net/2017/05/25/anarchism-and-the-everyday-john-cages-number-pieces/>

Katz, Mark. Music and Technology: A Very Short Introduction. 2022. Oxford UP, 2022. ISBN-10: 0199946981; ISBN-13: 978-0199946983.

Prieto, Eric. “Speech Melody and the Evolution of the Minimalist Aesthetic in Steve Reich’s The Cave.” 2002. <https://www.erudit.org/fr/revues/circuit/2002-v12-n2-circuit3613/902250ar.pdf>

Wikipedia articles on the artists and titles in the B section of the music outline (Music, Technology, and IP)

Supplemental Music Sources

Score reduction/analysis videos (helpful analysis tools, different recordings of these 2 pieces will be used at competitions)

- [“Imperial March”](#)
- [“Raiders March”](#)

Elfman, Danny. Batman [2nd ed.]. Omni Music Publishing (2016).
 This score is not required, as it’s expensive and not easy to get. I did not base any questions on this resource, but I did use it as a visual reference while creating listening questions for Batman. If you love to have the score, go for it—it’s a beautiful edition—but it will not directly impact your students’ ability to answer questions.

Also, there is a free preview of the published score here that has some analysis and overview of some of the musical segments that might be a helpful supplement for students to see how a musicologist would analyze this type of content:
<https://www.schott-music.com/en/preview/viewer/index/?idx=NTU3MTYz&idy=557163&dl=0>

2024 Academic Super Bowl

Senior English

Final Study Guide

The 1980's and 1990's



- I. Novel: (50%)
The House on Mango Street by Sandra Cisneros
- II. Screenplay: (30%)
Dead Poet's Society by Tom Shulman
- III. Poetry (20%)
 - A. Margaret Atwood
 - 1. "Morning in the Burned House"
<https://poets.org/poem/morning-burned-house>
 - B. Joy Harjo
 - 1. "Insomnia and the Seven Steps to Grace"
<https://www.poetryfoundation.org/poems/47719/insomnia-and-the-seven-steps-to-grace>
 - C. Lucille Clifton
 - 1. "Jasper, Texas 1998"
<https://www.poetryfoundation.org/poems/49491/jasper-texas-1998>
 - CI. Maya Angelou
 - 1. "On the Pulse of Morning"
<https://poets.org/poem/pulse-morning>
 - CII. Marge Piercy
 - "To Be of Use" <https://www.poetryfoundation.org/poems/57673/to-be-of-use>
 - CIII. Louise Gluck
 - "The Wild Iris"
<https://www.poemhunter.com/poem/the-wild-iris/>

Sources:

Online version of House on Mango Street is available here for free: <https://fliphtml5.com/qtevflpbf/basic>

The official version of the screenplay script for Dead Poets Society will be posted in the Study Materials Folder and on the web page.

Study Outlines are developed from ideas submitted by coaches and question writers.

Please email ideas for the 2025 contest, **Ireland**, to Jill Slinker at jslinker@iasp.org

2024 Academic Super Bowl

Senior Math

Final Study Guide

The 1980's and 1990's



- I. Algebra - 16%
 - A. Solutions of Systems of Equations (both linear and non-linear)
 - B. Applications of Systems of Equations
- II. Logarithms and Logarithmic Equations - 20%
 - A. Definition and Properties of Logarithms
 - B. Solving Equations involving Logarithms
 - C. Applications
- III. Calculus - 12%
 - A. Definite and Indefinite Integrals
 - B. Applications
- IV. Statistics - 16%
 - A. Mean, Median, Mode and Range of a set of Data
 - B. The Binomial Distribution
 - C. The Normal Distribution
 - D. Approximating the Binomial Distribution with the Normal Distribution
- V. Geometry - 16%
 - A. Similar Triangles
 - 1. Know how to tell if triangles are similar
 - 2. Find angle measures and lengths of sides in similar triangles
 - 3. Angle Bisector Theorem
 - 4. Right Triangle Altitude Theorem
- VI. Enrichment Topics - 20%
 - A. Modular Arithmetic
 - 1. The Euclidean Algorithm (GCD & LCM)
 - 2. Congruence Modulo n and Modular Algebra
 - 3. Solving Congruence Equations and Diophantine Equations
 - B. The Doomsday Rule
(use the Wikipedia article “Doomsday Rule” to prepare for this topic)

Sources:

<https://discrete.openmathbooks.org/dmoi3.html>; (Chapter 5, section 5.2)

<https://math.gordon.edu/ntic/ntic2023/nticoneside.pdf> (Secs 5.1 & 5.2, pgs 57-62);

YouTube videos

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2024 Academic Super Bowl

Senior Science

Final Study Guide

The 1980's and 1990's



- I. Chemistry - 33%
- A. Types and Characteristics of Nuclear Radiation
 - 1. Alpha
 - 2. Beta
 - 3. Gamma
 - B. Nuclear Reactions
 - 1. Recognizing, writing, and balancing different types including alpha, beta, and gamma emission, as well as electron capture and positron emission
 - C. Rates of Nuclear Decay: First order decay for all reactions
 - 1. Half-life calculations. Calculate the amounts left after certain times if rate constant is known
 - 2. Calculate the time required to reach a certain amount of product left.
 $t_{1/2} = 0.693/k$ and $\ln(A/A_0) = -kt$
- II. Physics - 33%
- A. Space Based Telescopes (11 % of Outline)
 - 1. Advantages and Disadvantages of Space Based Telescopes
<https://www.space.fm/astronomy/planetarysystems/spacetelescopes.html>
 - 2. All wavelengths of light were observed by space-based telescopes in the 1980s and 1990s. These links are related to the telescopes in order of increasing wavelength, decreasing photon energy and decreasing frequency:
 - a. Gamma Rays: Compton Gamma Ray Observatory
<https://heasarc.gsfc.nasa.gov/docs/cgro/cgro/>
 - b. X-rays: Einstein High Energy Observatory
<https://heasarc.gsfc.nasa.gov/docs/einstein/heao2.html>
 - c. Ultraviolet: International Ultraviolet Explorer
https://www.esa.int/Science_Exploration/Space_Science/IUE_overview
 - d. Visible: Hubble Space Telescope
https://www.nasa.gov/mission_pages/hubble/main/index.html
<https://hubblesite.org/home>
 - e. Infrared: Infrared Astronomical Satellite
<https://www.jpl.nasa.gov/missions/infrared-astronomical-satellite-iras>
<https://www.jpl.nasa.gov/news/iras-discovers-new-phenomenas>
<https://irsa.ipac.caltech.edu/IRASdocs/iras.html>
 - f. Radio Waves: HALCA <https://science.nasa.gov/missions/halca/>

B. Interplanetary Space Travel (22% of Outline)

1. Kepler’s Laws of Motion – any introductory astronomy text
 2. Basic orbital mechanics
<https://solarsystem.nasa.gov/basics/chapter4-1/>
 3. Gravitational Assist
<https://www.planetary.org/articles/20130926-gravity-assist>
<https://www2.jpl.nasa.gov/basics/grav/primer.php>
 - a. Examples from Voyager 1 and 2
<https://voyager.jpl.nasa.gov/mission/timeline/#event-a-once-in-a-lifetime-alignment>
 4. Orbit Calculations
 - a. Velocity for circular orbit $V_{\text{circ}} = \sqrt{(GM)/R}$
 - b. Escape velocity $V_{\text{esc}} = \sqrt{(2GM)/R}$For solar system calculations, with R in Astronomical Units.
 $V_{\text{circ}} = 30 \text{ km/sec}/\sqrt{R}$
 $V_{\text{esc}} = 42 \text{ km/sec}/\sqrt{R}$
 5. Relative velocity:
Velocity of satellite relative to sun =
Velocity of planet relative to sun + velocity of satellite relative to the planet
 6. Hohmann Transfer Orbit
<https://orbital-mechanics.space/orbital-maneuvers/hohmann-transfer.html>
- Unit Conversions:
1 km/sec = 0.2 AU/year = 3.2 LY/1 Million Years
1 AU/yr = 16 LY/1Million Years
1 Light Year = 63,240 AU

III. Biology - 33%

A. The Human Genome Project

<https://www.genome.gov/human-genome-project>
[Sanger sequencing basics](#)
[Human genomic variation](#)

1. Objectives and history
2. Facts and figures about the project
3. Sanger sequencing basics
4. What was learned from the project?

B. Advances in the field of molecular genetics

[PCR Khan Academy](#)
[PCR NIH](#)
[RNAi Nobel prize](#)
[What is cloning?](#)
[20 years after Dolly the Sheep](#)
[Boston Children’s Hospital gene therapy history](#)
[Gene therapy history](#)

1. Polymerase chain reaction
2. RNA interference
3. Dolly the sheep and somatic cell nuclear transplant
4. Gene therapy

C. HIV and AIDS crisis

[About HIV/AIDS | HIV Basics](#)
[HIV National institutes of Health HIV Replication Cycle](#)
[HIV National Institutes of Health HIV Life Cycle](#)
[HIV and AIDS timeline CDC](#)

1. Origins of the virus and the jump to humans
2. Symptoms and course of the disease
3. Characteristics of HIV and retroviruses
4. Development of treatments - reverse transcriptase inhibitors (Ex: AZT) and protease inhibitors

Biology Sources: a good introductory college level biology textbook such as Campbell Biology will have sections on most of these topics.

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2024 Academic Super Bowl

Senior Social Studies

Final Study Guide

The 1980's and 1990's



- I. Before 1980 - 20%
 - A. Liberal Restlessness
 - B. The Rise of the Right
 - C. Jimmy Carter and Ronald Reagan
 - D. The 1976 Presidential Election

- II. 1980 to 1992 - 30%
 - A. Domestic Issues
 - B. Foreign Issues
 - C. The 1980 Presidential Election
 - D. The Reagan Presidency
 - E. The 1988 Presidential Election
 - F. The Bush Presidency

- III. 1992 through 2000 - 50%
 - A. Culture Wars and Decline
 - B. Prosperity and Partisanship
 - C. Immigration, Race, and Multiculturalism
 - D. Terrorism
 - E. The 1990 and 1992 Presidential Elections
 - F. The Clinton Presidency
 - G. Impeachment and Electoral Crises, 1998-2000

Source: IV. Restless Giant: The United States from Watergate to Bush v. Gore
By James Patterson; Oxford University Press; 2007; ISBN 978-0-19-530522-7

*Background reading: Pages 1 thru 104 (Source for no contest questions but recommended for understanding assigned readings)

*Assigned reading: Pages 104 through 425 (Source for all contest questions)

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