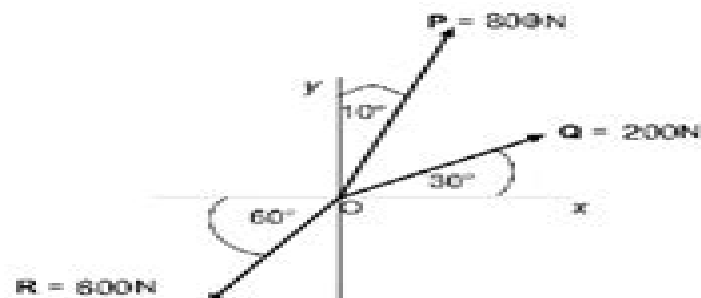


G11 PHYSICAL SCIENCE PAPER 1 REVISION

QUESTION 2 (Start on a new page.)

Three forces, **P**, **Q** and **R**, of magnitudes 800N, 200N and 600N respectively, act on a point **O** in the directions shown in the diagram below.

The forces are NOT drawn to scale.



Determine the magnitude and direction of the resultant force by
CALCULATION

(8)
[8]

QUESTION 3 (Start on a new page.)

A constant force, **F**, pulls a 35kg block at a constant speed over a rough horizontal surface, **AB**, as shown in the diagram below. The coefficient of kinetic friction (μ_k) between the block and the surface is 0,4.



3.1 Draw a labelled free-body diagram showing ALL the forces acting on the block. (4)

3.2 State Newton's first law of motion in words. (2)

Calculate the magnitude of the:

3.3 Force **F** (6)

Physical Science Paper 1 Scope

Thomas Griffiths



Physical Science Paper 1 Scope:

Recognizing the way ways to acquire this books **Physical Science Paper 1 Scope** is additionally useful. You have remained in right site to start getting this info. acquire the Physical Science Paper 1 Scope connect that we have the funds for here and check out the link.

You could buy guide Physical Science Paper 1 Scope or acquire it as soon as feasible. You could quickly download this Physical Science Paper 1 Scope after getting deal. So, next you require the ebook swiftly, you can straight get it. Its in view of that no question simple and so fats, isnt it? You have to favor to in this flavor

https://crm.avenza.com/data/book-search/Documents/Nwea_Normative_Data_Chart_2014.pdf

Table of Contents Physical Science Paper 1 Scope

1. Understanding the eBook Physical Science Paper 1 Scope
 - The Rise of Digital Reading Physical Science Paper 1 Scope
 - Advantages of eBooks Over Traditional Books
2. Identifying Physical Science Paper 1 Scope
 - Exploring Different Genres
 - Considering Fiction vs. Non-Fiction
 - Determining Your Reading Goals
3. Choosing the Right eBook Platform
 - Popular eBook Platforms
 - Features to Look for in an Physical Science Paper 1 Scope
 - User-Friendly Interface
4. Exploring eBook Recommendations from Physical Science Paper 1 Scope
 - Personalized Recommendations
 - Physical Science Paper 1 Scope User Reviews and Ratings
 - Physical Science Paper 1 Scope and Bestseller Lists
5. Accessing Physical Science Paper 1 Scope Free and Paid eBooks

- Physical Science Paper 1 Scope Public Domain eBooks
- Physical Science Paper 1 Scope eBook Subscription Services
- Physical Science Paper 1 Scope Budget-Friendly Options
- 6. Navigating Physical Science Paper 1 Scope eBook Formats
 - ePub, PDF, MOBI, and More
 - Physical Science Paper 1 Scope Compatibility with Devices
 - Physical Science Paper 1 Scope Enhanced eBook Features
- 7. Enhancing Your Reading Experience
 - Adjustable Fonts and Text Sizes of Physical Science Paper 1 Scope
 - Highlighting and Note-Taking Physical Science Paper 1 Scope
 - Interactive Elements Physical Science Paper 1 Scope
- 8. Staying Engaged with Physical Science Paper 1 Scope
 - Joining Online Reading Communities
 - Participating in Virtual Book Clubs
 - Following Authors and Publishers Physical Science Paper 1 Scope
- 9. Balancing eBooks and Physical Books Physical Science Paper 1 Scope
 - Benefits of a Digital Library
 - Creating a Diverse Reading Collection Physical Science Paper 1 Scope
- 10. Overcoming Reading Challenges
 - Dealing with Digital Eye Strain
 - Minimizing Distractions
 - Managing Screen Time
- 11. Cultivating a Reading Routine Physical Science Paper 1 Scope
 - Setting Reading Goals Physical Science Paper 1 Scope
 - Carving Out Dedicated Reading Time
- 12. Sourcing Reliable Information of Physical Science Paper 1 Scope
 - Fact-Checking eBook Content of Physical Science Paper 1 Scope
 - Distinguishing Credible Sources
- 13. Promoting Lifelong Learning
 - Utilizing eBooks for Skill Development

- Exploring Educational eBooks

14. Embracing eBook Trends

- Integration of Multimedia Elements
- Interactive and Gamified eBooks

Physical Science Paper 1 Scope Introduction

In the digital age, access to information has become easier than ever before. The ability to download Physical Science Paper 1 Scope has revolutionized the way we consume written content. Whether you are a student looking for course material, an avid reader searching for your next favorite book, or a professional seeking research papers, the option to download Physical Science Paper 1 Scope has opened up a world of possibilities. Downloading Physical Science Paper 1 Scope provides numerous advantages over physical copies of books and documents. Firstly, it is incredibly convenient. Gone are the days of carrying around heavy textbooks or bulky folders filled with papers. With the click of a button, you can gain immediate access to valuable resources on any device. This convenience allows for efficient studying, researching, and reading on the go. Moreover, the cost-effective nature of downloading Physical Science Paper 1 Scope has democratized knowledge. Traditional books and academic journals can be expensive, making it difficult for individuals with limited financial resources to access information. By offering free PDF downloads, publishers and authors are enabling a wider audience to benefit from their work. This inclusivity promotes equal opportunities for learning and personal growth. There are numerous websites and platforms where individuals can download Physical Science Paper 1 Scope. These websites range from academic databases offering research papers and journals to online libraries with an expansive collection of books from various genres. Many authors and publishers also upload their work to specific websites, granting readers access to their content without any charge. These platforms not only provide access to existing literature but also serve as an excellent platform for undiscovered authors to share their work with the world. However, it is essential to be cautious while downloading Physical Science Paper 1 Scope. Some websites may offer pirated or illegally obtained copies of copyrighted material. Engaging in such activities not only violates copyright laws but also undermines the efforts of authors, publishers, and researchers. To ensure ethical downloading, it is advisable to utilize reputable websites that prioritize the legal distribution of content. When downloading Physical Science Paper 1 Scope, users should also consider the potential security risks associated with online platforms. Malicious actors may exploit vulnerabilities in unprotected websites to distribute malware or steal personal information. To protect themselves, individuals should ensure their devices have reliable antivirus software installed and validate the legitimacy of the websites they are downloading from. In conclusion, the ability to download Physical Science Paper 1 Scope has transformed the way we access information. With the convenience, cost-effectiveness, and accessibility it

offers, free PDF downloads have become a popular choice for students, researchers, and book lovers worldwide. However, it is crucial to engage in ethical downloading practices and prioritize personal security when utilizing online platforms. By doing so, individuals can make the most of the vast array of free PDF resources available and embark on a journey of continuous learning and intellectual growth.

FAQs About Physical Science Paper 1 Scope Books

What is a Physical Science Paper 1 Scope PDF? A PDF (Portable Document Format) is a file format developed by Adobe that preserves the layout and formatting of a document, regardless of the software, hardware, or operating system used to view or print it. **How do I create a Physical Science Paper 1 Scope PDF?** There are several ways to create a PDF: Use software like Adobe Acrobat, Microsoft Word, or Google Docs, which often have built-in PDF creation tools. Print to PDF: Many applications and operating systems have a "Print to PDF" option that allows you to save a document as a PDF file instead of printing it on paper. Online converters: There are various online tools that can convert different file types to PDF. **How do I edit a Physical Science Paper 1 Scope PDF?** Editing a PDF can be done with software like Adobe Acrobat, which allows direct editing of text, images, and other elements within the PDF. Some free tools, like PDFescape or Smallpdf, also offer basic editing capabilities. **How do I convert a Physical Science Paper 1 Scope PDF to another file format?** There are multiple ways to convert a PDF to another format: Use online converters like Smallpdf, Zamzar, or Adobe Acrobats export feature to convert PDFs to formats like Word, Excel, JPEG, etc. Software like Adobe Acrobat, Microsoft Word, or other PDF editors may have options to export or save PDFs in different formats. **How do I password-protect a Physical Science Paper 1 Scope PDF?** Most PDF editing software allows you to add password protection. In Adobe Acrobat, for instance, you can go to "File" -> "Properties" -> "Security" to set a password to restrict access or editing capabilities. Are there any free alternatives to Adobe Acrobat for working with PDFs? Yes, there are many free alternatives for working with PDFs, such as: LibreOffice: Offers PDF editing features. PDFsam: Allows splitting, merging, and editing PDFs. Foxit Reader: Provides basic PDF viewing and editing capabilities. How do I compress a PDF file? You can use online tools like Smallpdf, ILovePDF, or desktop software like Adobe Acrobat to compress PDF files without significant quality loss. Compression reduces the file size, making it easier to share and download. Can I fill out forms in a PDF file? Yes, most PDF viewers/editors like Adobe Acrobat, Preview (on Mac), or various online tools allow you to fill out forms in PDF files by selecting text fields and entering information. Are there any restrictions when working with PDFs? Some PDFs might have restrictions set by their creator, such as password protection, editing restrictions, or print restrictions. Breaking these restrictions might require specific software or tools, which may or may not be legal depending on the circumstances and local laws.

Find Physical Science Paper 1 Scope :

[nwea normative data chart 2014](#)

[nutrition guide for applebees](#)

[nursing school in pholosong hospital](#)

nvdiia graphics card repair service

nyc civil service exam study guide carpenter

[nursing pastpaper 1st year](#)

[nursing medication practice test for employment](#)

nudist dude ranch hot gay romance

nutrition research paper

[nuovo regolamento europeo sui prodotti da costruzione](#)

nuclear chemistry packet

nuvi 2505 quick guide

[nyc food protection course answers](#)

~~nursing math calculation level ii test~~

nust sample papers for entry test

Physical Science Paper 1 Scope :

[world geography and cultures student edition glencoe world geography](#) - Sep 04 2022

web world geography and cultures student edition glencoe world geography by mcgraw hill education isbn 10 0078799953

isbn 13 9780078799952 glencoe hardcover

world geography and cultures glencoe world history the - Dec 27 2021

web glencoe world history the american vision by david boles and other authors

glencoe world geography and cultures world cultures - Mar 30 2022

web jan 1 2008 publisher glencoe january 1 2008 isbn 10 0078783852

glencoe world geography and cultures teacher wraparound - Feb 26 2022

web jan 1 2008 world geography and cultures reading essentials and note taking guide student workbook glencoe world

geography mcgraw hill 4 5 out of 5 stars

[glencoe world geography mcgraw hill education](#) - Jan 08 2023

web national geographic mapmachine textbook resources online student edition multi language glossaries web links unit resources country databanks chapter activities chapter overviews student web activities self check quizzes epuzzles and games vocabulary eflashcards the teacher center includes access to all our student center

[world cultures geography student site cengage](#) - Feb 09 2023

web the world cultures and geography student edition is online find hundreds of supporting images maps unit opener videos explorer video clips modified text for struggling readers audio support and much more at point of use within the book pages digital library interactive map tool

[world geography and cultures 2008 glencoe mheducation com](#) - Jul 14 2023

web glencoe graphing tool current events and interactive time line textbook resources online student edition multilingual glossary web links study central nations of the world atlas unit resources country databanks chapter activities chapter overviews student web activities self check quizzes epuzzles and games vocabulary

world geography and cultures student edition glencoe world geography - Dec 07 2022

web world geography and cultures student edition glencoe world geography hardcover by mcgraw hill education author 4 9 34 ratings see all formats and editions

world geography and cultures student edition glencoe world geography - Aug 03 2022

web jan 16 2011 buy world geography and cultures student edition glencoe world geography student by mcgraw hill isbn 9780078799952 from amazon s book store everyday low prices and free delivery on eligible orders

[glencoe world geography and cultures worldcat org](#) - Nov 06 2022

web glencoe world geography and cultures authors richard g boehm dinah zike national geographic society u s glencoe mcgraw hill summary world geography and cultures offers a fascinating view of the world enlivened by a meticulous presentation that focuses on the development of geographic literacy

[glencoe world geography a physical and cultural approach](#) - Jul 02 2022

web glencoe world geography a physical and cultural approach by boehm richard g swanson james l publication date 1992 topics geography publisher lake forest ill glencoe division macmillan mcgraw hill

[world geography and cultures 2008 mcgraw hill education](#) - Aug 15 2023

web please read our terms of use and privacy notice before you explore our web site to report a technical problem with this web site please contact the web producer web

[amazon com glencoe geography](#) - Jan 28 2022

web jan 1 2003 geography the human and physical world student edition glencoe world geography

world geography and cultures 2012 mcgraw hill education - May 12 2023

web glencoe graphing tool current events and interactive time line nations of the world atlas textbook resources
studentworks plus online multilingual glossary web links study to go chapter activities chapter overviews student web
activities self check quizzes epuzzles and games vocabulary eflashcards in motion animations section

world geography and cultures studentworks plus dvd open - Apr 30 2022

web oct 17 2007 world geography and cultures studentworks plus dvd october 17 2007 glencoe mcgraw hill cd rom in
english 1 edition 0078783941 9780078783944

glencoe world geography and cultures kit archive org - Mar 10 2023

web 1 student textbook lxxi 851 pages r82 29 cm 1 teacher s wraparound ed t60 ra45 853 pages r82 illustrations chiefly
color maps some color 29 cm 27 volumes of supplementary materials 12 cd roms grades 9 12

world cultures geography teacher site cengage - Oct 05 2022

web the online world atlas is a comprehensive collection of world cultures and geography s student edition maps formatted
for projection and online use sample maps from south asia include south asia population density

world geography and cultures by richard g boehm open library - Apr 11 2023

web aug 30 2020 world geography and cultures offers a fascinating view of the world enlivened by a meticulous
presentation that focuses on the development of geographic literacy every region is studied in three parts physical geography
cultural geography and current events

the world mcgraw hill education - Jun 13 2023

web in this unit chapter 1 how geographers look at the world chapter 2 the physical world chapter 3 climates of the earth
chapter 4 the human world site preferences log out

glencoe world geography and cultures abebooks - Jun 01 2022

web unit 11 resources glencoe world geography and cultures by richard boehm national geographic and a great selection of
related books art and collectibles available now at abebooks com

what is smps working principle of smps electricalgang - Sep 06 2023

web apr 6 2023 how does a switch power supply work smps works by turning the main power on and off at a high speed to
reduce the voltage in such a case the reduction in voltage depends on the ratio of time and off time switching happens very
quickly 10 000 times or faster per second what is smps s short answer smps stands for switch

power supply how does a non isolated smps work electrical - Dec 29 2022

web feb 5 2019 for a non isolated smps supply i think we either first rectify it and then pass it through the switching
regulator or we first pass the input ac voltage through a switching regulator to get the desired voltage and then rectify it to
get a dc voltage

[switch mode power supply smps basics diagram arrow com](#) - Aug 05 2023

web sep 12 2018 smps operation diagram the diagram above outlines how the smps operates an smps s functionality is more complex than that of a linear regulator but we can break it down into five stages 1 in the first stage the incoming ac power runs through a rectifier and undergoes filtration to produce dc 2

[switched mode power supplies learn about electronics](#) - Sep 25 2022

web fig 3 0 1 typical smps block diagram fig 3 0 1 shows a block diagram example of a typical smps with an ac mains line input and a regulated dc output the output rectification and filter are isolated from the high frequency switching section by a high frequency transformer and voltage control feedback is via an opto isolator

how smps power supply works block diagram youtube - Feb 28 2023

web mar 22 2021 how the smps power supply works what the smps switch mode power supply working principle the block diagram are explained in this video tutorial the smps

smps block diagram and working voltage regulator applied youtube - Jun 22 2022

web jan 12 2020 subject applied electronics video name smps block diagram and working chapter voltage regulator faculty prof shilpa gaikwad upskill and get placements w

[switch mode power supply smps design buck boost](#) - May 02 2023

web may 23 2017 a simplified block diagram of an smps which converts ac input to a regulated dc is shown in the following image although there are many number of design types for an smps power supply all the designs will be

electronic circuits smps online tutorials library - Oct 27 2022

web the block diagram of a linear power supply is as shown in the following figure in spite of the above disadvantages linear power supplies are widely used in low noise amplifiers test equipment control circuits in addition they

[smps switched mode power supply an overview engineers](#) - May 22 2022

web smps rely on pwm to control the average value of the output voltage the average value of the repetitive pulse waveform depends on the area under the waveform as load increases output voltage tends to fall most switching power supplies regulate their output using the method called pulse width modulation pwm

[smps overview electronics workshop](#) - Aug 25 2022

web feb 25 2021 fig block diagram of smps the working of smps is clearly explained in the above block diagram and each block is explained properly in the following section input section the input supply of our

[power supply tutorial smps](#) - Mar 20 2022

web below is a conceptual circuit diagram of a typical off line smps this tutorial will introduce you to its basic operation how switching power supply smps works ac power first passes through fuses and a line filter then it is rectified by a full wave

bridge rectifier

module 3 0 introduction to switched mode power supplies - Apr 01 2023

web hence a smps can be used to convert ac to dc such as in a desktop computer power supply or dc to dc either step up or step down in many different battery powered systems fig 3 0 1 shows a block diagram example of a typical smps with an ac mains line input and a regulated dc output

what is smps define smps its working block diagram how work - Feb 16 2022

web may 11 2021 what is smps a switched mode power supply is an electronic power supply that incorporates a switching regulator to convert electrical power efficiently lik

what is smps in computer define smps its working block diagram - Dec 17 2021

web what is smps in computer define smps and smps working block diagram smps basics computer concepts a switched mode power supply smps is an electronic circ

block diagram detailed working of smps switch mode power youtube - Jul 24 2022

web apr 2 2018 this video includes smps switch mode power supply with following outlines 1 smps switch mode power supply2 basics of smps switch mode power supply3 bl

switched mode power supply smps circuit working explanation - Jun 03 2023

web oct 15 2020 switched mode power supplies smps are basically dc dc converters if the input is ac input is first rectified to get the dc so depending on the input a smps may have two dc ac ac dc or three ac dc dc ac ac dc stages the block diagram is shows below the principle of an ac fed smps

switched mode power supply wikipedia - Jul 04 2023

web block diagram of a mains operated ac dc smps with output voltage regulation input rectifier stage ac half wave and full wave rectified signals if the smps has an ac input then the first stage is to convert the input to dc this is called rectification an smps with a dc input does not require this stage

simple smps circuit theorycircuit - Jan 18 2022

web aug 16 2017 this page contains a simple smps circuit which is capable of producing 12 volt dc with 1 amps current rating and this circuit contains few easily available components it may help you to design your own smps for your

what is smps with block diagram sage answer - Nov 15 2021

web mar 31 2021 what is smps with block diagram switched mode block diagram 1 shows a block diagram example of a typical smps with an ac mains line input and a regulated dc output the output rectification and filter are isolated from the high frequency switching section by a high frequency transformer and voltage control feedback is via an

smps basics working of switched mode power supply - Nov 27 2022

web apr 29 2020 forward converter in a forward converter the choke carries the current when the transistor is conducting as well as when it is not the diode carries the current during the off period of the transistor therefore energy flows into the load during both the periods

what is switch mode power supply smps types block diagram working - Oct 07 2023

web the figure given below represents the functional block diagram of smps initially the unregulated ac input signal from the source is provided to the input rectifier and filter circuit here the ac input signal is rectified to generate a dc signal and further smoothened to remove high frequency noise component from it

introduction to smps switched mode power supply engineers - Apr 20 2022

web smps regulates the output power by varying the on to off time using minimum voltage so that efficiency is very high compared to the linear power supply what is inside a smps fig 1 simple block diagram showing different function of smps

smps block diagram and working for isolated topology - Jan 30 2023

web 1 answer sorted by 1 you got part of the answer in the comments because mains frequency is lower than the operating frequency of the power supply up to a point the higher the frequency the smaller the magnetics can be typical mains frequencies are well below that point

the tie that binds haruf kent 9780375724381 amazon com - Apr 14 2023

web mar 1 2000 here kent haruf delivers the sweeping tale of a woman of the american high plains as told by her neighbor sanders roscoe as roscoe shares what he knows edith's tragedies unfold a childhood of pre dawn chores a mother's death a violence that leaves a father dependent on his children forever enraged

ncis the tie that binds tv episode 2016 imdb - Mar 01 2022

web dec 13 2016 the tie that binds directed by arvin brown with mark harmon pauley perrette sean murray wilmer valderrama ducky looks back on a choice he made 37 years ago when evidence in the murder of a navy captain is linked to his dead mother

the tie that binds rotten tomatoes - Apr 02 2022

web movie info a fugitive couple daryl hannah keith carradine go on a killing spree to reclaim the daughter they left at a crime scene rating r

drake tie that binds youtube - Sep 07 2022

web jun 17 2022 official audio for drake tie that binds off the new album honestly nevermind available everywhere now drake lnk to hnm subscribe to drake on you

loading interface goodreads - Dec 10 2022

web discover and share books you love on goodreads

[blest be the tie that binds hymnary org](#) - Jan 11 2023

web representative text 1 blest be the tie that binds our hearts in christian love the fellowship of kindred minds is like to that above 2 before our father s throne we pour our ardent prayers our fears our hopes our aims are one our comforts and our cares

the tie that binds 1995 film wikipedia - May 15 2023

web the tie that binds is a 1995 thriller film directed by screenwriter wesley strick and starring daryl hannah keith carradine vincent spano moira kelly and julia devin strick s directing debut the film follows the struggles of a couple who have just adopted a 6 year old girl only to discover that her biological parents a murderous couple

ties that bind 2006 filmi sinemalar com - May 03 2022

web ties that bind filminin özeti yorumları oyuncular ve seansları hakkında bilgilere ulaşmak film fragmanını izlemek için tıklayın

[pdf epub the tie that binds by catharina maura download](#) - Dec 30 2021

web may 4 2023 download the tie that binds by catharina maura in pdf epub format complete free brief summary of book the tie that binds by catharina maura here is a quick description and cover image of book the tie that binds written by catharina maurawhich was published in may 27 2020

drake tie that binds lyrics genius lyrics - Aug 18 2023

web jun 17 2022 tie that binds lyrics intro oh oh oh oh oh oh verse 1 kill me slowly with those piercin eyes don t break my fall hidin from those stars foreign inside every time i know you re here i

the tie that binds 1995 original trailer youtube - Aug 06 2022

web oct 18 2018 102 12k views 4 years ago the original trailer in high definition of the tie that binds directed by wesley strick and starring daryl hannah keith carradine moira kelly and vincent spano

[tie that binds meaning definition usingenglish com](#) - Jun 16 2023

web the tie that binds or the ties that bind is the shared belief or other factor that links people together country international english subject area general usage type both or all words used

the tie that binds paperback 7 jun 2002 amazon co uk - Oct 08 2022

web in the tie that binds his critically acclaimed first novel kent haruf delivers the sweeping tale of eighty year old edith goodnough narrated by her neighbour edith s tragedies unfold a tough childhood a mother s death a violence that leaves a father dependent on his children forever enraged

[bruce springsteen the ties that bind lyrics genius lyrics](#) - Jul 05 2022

web the ties that bind is a song by bruce springsteen from his fifth album the river it was written while springsteen was on

the road for is 1978 tour it was supposed to read more oct 17 1980

blest be the tie that binds hymn lyrics author and meaning - Nov 09 2022

web jun 29 2023 blest be the tie that binds is a hymn that talks about something we don't always associate with hymns the church itself here's what the hymn says about that special relationship christians have with their fellow believers and how the church comes together to worship its heavenly father lori stanley roeleveld contributing writer jun

the tie that binds 1995 imdb - Feb 12 2023

web sep 8 1995 the tie that binds directed by wesley strick with daryl hannah keith carradine moira kelly vincent spano john netherwood and his wife leann are fugitives who are both wanted for murder they have a young daughter named janie john and leann are in the process of robbing a house when the two residents of the house show up

the tie that binds idioms by the free dictionary - Jul 17 2023

web the tie that binds the value belief characteristic etc that is shared between or among people and which results in a unique and unbreakable connection usually used plurally in our community the welfare of our children has always been the *the ties that bind 1985 imdb* - Jan 31 2022

web apr 4 1985 the ties that bind directed by su friedrich with lore bucher the ties that bind is an experimental documentary about the filmmaker's mother who was born and lived in southern germany from 1920 1950 through a mixture of personal anecdote and social history she describes the rise of nazism the war years and the allied occupation

ty myers tie that binds lyrics genius lyrics - Jun 04 2022

web mar 10 2023 tommy detamore mar 10 2023 1 viewer 1 contributor tie that binds lyrics verse i first saw you through the buzz of a burnt out cigarette bouncin off the walls with the smell of forgettin

the tie that binds novel wikipedia - Mar 13 2023

web the tie that binds is a novel by kent haruf written in 1984 the novel is haruf's first major work receiving a whiting award and a special hemingway foundation pen citation it is the story of 80 year old edith goodnough of holt county colorado as told to an unnamed inquirer on a sunday afternoon in the spring of 1977 by her 50 year old