

Chemistry A

Advanced Subsidiary GCE F322

Chains, Energy and Resources

Mark Scheme for June 2010

Ocr Chemistry June 2013 Mark Scheme F322

Clemens Wendtner



Ocr Chemistry June 2013 Mark Scheme F322:

When somebody should go to the book stores, search opening by shop, shelf by shelf, it is essentially problematic. This is why we give the ebook compilations in this website. It will extremely ease you to see guide **Ocr Chemistry June 2013 Mark Scheme F322** as you such as.

By searching the title, publisher, or authors of guide you truly want, you can discover them rapidly. In the house, workplace, or perhaps in your method can be every best area within net connections. If you goal to download and install the Ocr Chemistry June 2013 Mark Scheme F322, it is utterly easy then, in the past currently we extend the belong to to purchase and make bargains to download and install Ocr Chemistry June 2013 Mark Scheme F322 correspondingly simple!

<https://crm.avenza.com/data/book-search/index.jsp/series%203%20study%20guide%20productmanualguide.pdf>

Table of Contents Ocr Chemistry June 2013 Mark Scheme F322

1. Understanding the eBook Ocr Chemistry June 2013 Mark Scheme F322
 - The Rise of Digital Reading Ocr Chemistry June 2013 Mark Scheme F322
 - Advantages of eBooks Over Traditional Books
2. Identifying Ocr Chemistry June 2013 Mark Scheme F322
 - 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 Ocr Chemistry June 2013 Mark Scheme F322
 - User-Friendly Interface
4. Exploring eBook Recommendations from Ocr Chemistry June 2013 Mark Scheme F322
 - Personalized Recommendations
 - Ocr Chemistry June 2013 Mark Scheme F322 User Reviews and Ratings
 - Ocr Chemistry June 2013 Mark Scheme F322 and Bestseller Lists

5. Accessing Ocr Chemistry June 2013 Mark Scheme F322 Free and Paid eBooks
 - Ocr Chemistry June 2013 Mark Scheme F322 Public Domain eBooks
 - Ocr Chemistry June 2013 Mark Scheme F322 eBook Subscription Services
 - Ocr Chemistry June 2013 Mark Scheme F322 Budget-Friendly Options
6. Navigating Ocr Chemistry June 2013 Mark Scheme F322 eBook Formats
 - ePub, PDF, MOBI, and More
 - Ocr Chemistry June 2013 Mark Scheme F322 Compatibility with Devices
 - Ocr Chemistry June 2013 Mark Scheme F322 Enhanced eBook Features
7. Enhancing Your Reading Experience
 - Adjustable Fonts and Text Sizes of Ocr Chemistry June 2013 Mark Scheme F322
 - Highlighting and Note-Taking Ocr Chemistry June 2013 Mark Scheme F322
 - Interactive Elements Ocr Chemistry June 2013 Mark Scheme F322
8. Staying Engaged with Ocr Chemistry June 2013 Mark Scheme F322
 - Joining Online Reading Communities
 - Participating in Virtual Book Clubs
 - Following Authors and Publishers Ocr Chemistry June 2013 Mark Scheme F322
9. Balancing eBooks and Physical Books Ocr Chemistry June 2013 Mark Scheme F322
 - Benefits of a Digital Library
 - Creating a Diverse Reading Collection Ocr Chemistry June 2013 Mark Scheme F322
10. Overcoming Reading Challenges
 - Dealing with Digital Eye Strain
 - Minimizing Distractions
 - Managing Screen Time
11. Cultivating a Reading Routine Ocr Chemistry June 2013 Mark Scheme F322
 - Setting Reading Goals Ocr Chemistry June 2013 Mark Scheme F322
 - Carving Out Dedicated Reading Time
12. Sourcing Reliable Information of Ocr Chemistry June 2013 Mark Scheme F322
 - Fact-Checking eBook Content of Ocr Chemistry June 2013 Mark Scheme F322
 - 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

Ocr Chemistry June 2013 Mark Scheme F322 Introduction

In the digital age, access to information has become easier than ever before. The ability to download Ocr Chemistry June 2013 Mark Scheme F322 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 Ocr Chemistry June 2013 Mark Scheme F322 has opened up a world of possibilities. Downloading Ocr Chemistry June 2013 Mark Scheme F322 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 Ocr Chemistry June 2013 Mark Scheme F322 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 Ocr Chemistry June 2013 Mark Scheme F322. 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 Ocr Chemistry June 2013 Mark Scheme F322. 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 Ocr Chemistry June 2013 Mark Scheme F322, 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 Ocr Chemistry June 2013 Mark Scheme F322 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 Ocr Chemistry June 2013 Mark Scheme F322 Books

How do I know which eBook platform is the best for me? Finding the best eBook platform depends on your reading preferences and device compatibility. Research different platforms, read user reviews, and explore their features before making a choice. Are free eBooks of good quality? Yes, many reputable platforms offer high-quality free eBooks, including classics and public domain works. However, make sure to verify the source to ensure the eBook credibility. Can I read eBooks without an eReader? Absolutely! Most eBook platforms offer web-based readers or mobile apps that allow you to read eBooks on your computer, tablet, or smartphone. How do I avoid digital eye strain while reading eBooks? To prevent digital eye strain, take regular breaks, adjust the font size and background color, and ensure proper lighting while reading eBooks. What the advantage of interactive eBooks? Interactive eBooks incorporate multimedia elements, quizzes, and activities, enhancing the reader engagement and providing a more immersive learning experience. Ocr Chemistry June 2013 Mark Scheme F322 is one of the best book in our library for free trial. We provide copy of Ocr Chemistry June 2013 Mark Scheme F322 in digital format, so the resources that you find are reliable. There are also many Ebooks of related with Ocr Chemistry June 2013 Mark Scheme F322. Where to download Ocr Chemistry June 2013 Mark Scheme F322 online for free? Are you looking for Ocr Chemistry June 2013 Mark Scheme F322 PDF? This is definitely going to save you time and cash in something you should think about.

Find Ocr Chemistry June 2013 Mark Scheme F322 :

[series 3 study guide productmanualguide](#)

[sepedi paper 3 grade11](#)

[serial number guide on 88 4runner](#)

[september preparatory physical sciences p1](#)

serial port complete 2nd edition

senior certificate timetable may june 2015

september 2014 memorandum agricultural sciences eastern cape

series precalculus key

separation process engineering second edition solutions manual

~~sept jours du talion les~~

senior police administrative aide exam 25

separation of compounds by paper chromatography

semia payasam recipe

september 2014 lewensorientering vraestel

semper mine sons of war english edition

Ocr Chemistry June 2013 Mark Scheme F322 :

cambridge latin course wikipedia - Dec 08 2022

web the cambridge latin course clc is a series of textbooks published by cambridge university press used to teach latin to secondary school pupils it provides a grounding in vocabulary grammar and sense which allows progression through common entrance exams into a secondary or public school

cambridge latin course caerimonia translation - May 01 2022

web project na cambridge latin course 2 student study book answer key caerimonia latin translation yahoo answers
cambridge latin course 1 student study book answer key cambridge latin 2 ludi funebres manuals online caerimonia
wiktionary and cambridge latin stage 15 caerimonia study sets and cambridge latin course book 2 yahoo

caerimonia comprehension cambridge latin course - Jan 29 2022

web may 25 2023 caerimonia comprehension cambridge latin course cambridge latin course book 1 reference and
comprehension successful latin course worldwide the cambridge latin course is a well established best answer have you ever
been on the cambridge latin course website it has all of the stories from all of the books and it also

stage clc 15 distance learners - Aug 16 2023

web tutored courses tutored courses overview book i book ii book iii eduqas eduqas overview eduqas ocr gcse language
eduqas literature eduqas roman civilisation latin literature courses latin literature courses overview latin literature poetry
latin literature prose as level latin as level latin overview as latin language as

what is the answers to the comprehension of latin cambridge course - Oct 06 2022

web dec 4 2022 what is the cambridge latin course the cambridge latin course is a well known beginner latin course in the series of five textbooks see related links for more information

caerimonia comprehension cambridge latin course - Dec 28 2021

web this caerimonia comprehension cambridge latin course as one of the greater part operating sellers here will wholly be accompanied by the best choices to review why dont you strive to get core component in the start

home cambridge latin course - Apr 12 2023

web aims of the clc to teach comprehension of the latin language for reading purposes to develop an understanding of the history and culture of roman civilisation to encourage a wide range of approaches to language learning through the use of high quality audio visual resources books

caerimonia comprehension cambridge latin course - Jun 02 2022

web caerimonia comprehension cambridge latin course 1 caerimonia comprehension cambridge latin course as recognized adventure as capably as experience practically lesson amusement as competently as accord can be gotten by just checking out a ebook caerimonia comprehension cambridge latin course plus it is not directly done you

caerimonia translation pdf the slave lead salvius and course - Jan 09 2023

web view lab caerimonia translation pdf from latin 400 at freeport high school freeport the slave lead salvius and quintus to the atrium those men after they entered the atrium saw a large crowd

caerimonia comprehension cambridge latin course - Mar 31 2022

web jun 21 2023 caerimonia comprehension cambridge latin course term cambridge latin stage 15 caerimonia study sets and caerimonia story latin translation cambridge latin course

latin caerimonia questions caerimonia comprehension course - Mar 11 2023

web caerimonia comprehension questions 1 the crowd was gathered in the atrium hall british chiefs women and romans were there 2 the crowd can be described as big and large 3 the wax image was in the middle of the atrium on the couch the image represented emperor claudius 4

caerimonia comprehension cambridge latin course - Aug 04 2022

web jun 28 2023 compensate for caerimonia comprehension cambridge latin course and various books collections from fictions to scientific researchh in any way as acknowledged expedition as

latin caerimonia question answers flashcards quizlet - Jul 15 2023

web latin caerimonia question answers 3 7 18 reviews where was the crowd gathered for the ceremony which three groups of people did slavius and quintus see there click the card to flip atrium british chiefs women and many romans click the card to flip 1 13 flashcards learn test match q chat created by dann434 terms in this set 13

status published unit 3 caerimonia 9 blocks - Feb 10 2023

web create simple latin sentences respond to latin questions in both english and latin translate simple latin prose understand the influence of british royalty on the conquest of britain resources cambridge latin course clc textbook unit 2 stage 15 clc unit 2 omnibus clc unit 2 activity masters clc unit 2 teacher handbook amsco latin

caerimonia in english latin english dictionary glosbe - Jul 03 2022

web translation of caerimonia into english ceremony ceremonial reverence are the top translations of caerimonia into english sample translated sentence nuptiae sunt caerimonia ubi bini homines matrimonio rite coniunguntur other minor festivals include weddings of individuals where couples are tied together in the holy matrimony

caerimonia latin translation - Sep 05 2022

web caerimonia from the cambridge latin course ceremony s definition english definition dictionary april 30th 2018 c14 from medieval latin ceremonia from latin caerimonia may 10th 2018 answers to caerimonia comprehension pdf free download here scheme of work year 9 latin merchant taylors english latin dictionary translation of

caerimonia wiktionary the free dictionary - Nov 07 2022

web jun 1 2023 references caerimonia in charlton t lewis and charles short 1879 a latin dictionary oxford clarendon press caerimonia in charlton t lewis 1891 an elementary latin dictionary new york harper brothers caerimonia in charles du fresne du cange s glossarium mediæ et infimæ latinitatis augmented edition with

cambridge latin course caerimonia translation copy - Feb 27 2022

web cambridge latin course caerimonia translation examination questions in latin and greek may 17 2021 chamber concise dictionary mar 27 2022 learning latin at school level are re examined in the light of current educational thinking and government policy making this book is invaluable for trainees newly qualified teachers and more

pdf latin caerimonia answers latin pdf pdfprof com - May 13 2023

web cambridge latin course unit 2 quarter 2 2017 2018 stage 15 latin reading captions pp 52 53 parse translate caerimonia p 56 ppt doc latin year i course syllabus lvlad latin year 1 mr a wittmann

latin stage 15 caerimonia flashcards quizlet - Jun 14 2023

web cambridge latin course book 2 learn with flashcards games and more for free cambridge latin course book 2 learn with flashcards games and more for free hello quizlet home expert solutions create subjects exams ielts toefl latin stage 15 caerimonia flashcards learn

heart failure quiz causes sytoms and treatments medicinenet - Nov 10 2022

web early symptoms include shortness of breath racing heartbeat trouble sleeping extreme fatigue and weakness in some cases heart failure can occur suddenly and symptoms may include severe shortness of breath irregular or fast heartbeat and

a cough with foamy pink mucus if you experience any signs and symptoms of heart failure see a doctor

[quiz worksheet cardiovascular assessment for nurses](#) - Jun 05 2022

web take a quick interactive quiz on the concepts in nursing assessment of the cardiovascular system or print the worksheet to practice offline these practice questions will help you master the

[heart failure nursing care management a study guide nurseslabs](#) - Oct 09 2022

web may 19 2022 what is heart failure heart failure also known as congestive heart failure is recognized as a clinical syndrome characterized by signs and symptoms of fluid overload or of inadequate tissue perfusion heart failure is the inability of the heart to pump sufficient blood to meet the needs of the tissues for oxygen and

mcqs cardiology medquizzes - Aug 07 2022

web jul 8 2021 a congestive heart failure b asthma copd c bilateral diaphragmatic paralysis d all of the above 5 platypnea is dyspnea that occurs in which position a upright b sitting c supine d lateral 6 trepopnea most often occurs in patients with a asthma b copd c heart disease d pleural effusion 7 the sense of air hunger arises

nurses guide to commonly asked questions about heart failure - Dec 11 2022

web people with heart failure but not all have an ejection fraction of 40 or less however you can have heart failure with a normal ef electrocardiogram ecg looks at the heart rhythm the ecg can identify previous myocardial infarctions left ventricular hypertrophy diffuse myocardial disease or arrhythmia

multiple choice questions oxford academic - Feb 13 2023

web heart failure pathophysiology and inpatient management 1 a 73 year old male presents with acute pulmonary oedema his blood pressure is 180 110 mm hg and heart rate 120 beats min 1 sinus rhythm qrs duration 100 ms and he has cool peripheries his serum lactate is 5 normal 0 6 1 3 mmol litre 1 and there is left ventricular

[13 heart failure quizzes questions answers trivia propops](#) - Sep 20 2023

web mar 21 2023 the basics of heart failure and how it is treated questions 11 attempts 62798 last updated apr 11 2023 sample question what is not one of the main symptoms of heart failure shortness of breath warm hands reduced urinary output edema none of the above pharm heart failure

9 3 cardiovascular assessment nursing skills 2e - Mar 02 2022

web 9 3 cardiovascular assessment a thorough assessment of the heart provides valuable information about the function of a patient s cardiovascular system understanding how to properly assess the cardiovascular system and identifying both normal and abnormal assessment findings will allow the nurse to provide quality safe care to the patient

heart failure test your skills with these 5 questions - May 04 2022

web gary s ferenchick md ms facp author and disclosure information question 1 of 5 a 76 year old man with a history of heart

failure visits your clinic for a routine scheduled examination he has underlying coronary heart disease and his last echocardiogram 12 months ago revealed a left ventricular regional wall motion abnormality in the
heart failure propops quiz - Feb 01 2022

web apr 11 2023 correct answer e polio explanation polio is not a primary cause of heart failure heart failure is commonly caused by conditions such as cardiomyopathy high blood pressure coronary artery disease and diabetes polio is a viral infection that primarily affects the nervous system causing muscle weakness and paralysis

ecg ekg practice quiz identify rhythms registered nurse rn - Jul 06 2022

web ecg ekg practice quiz identify rhythms 1 select the options below that best describe the rhythm above required g first degree heart block 2 the nurse notes the rhythm above on the cardiac monitor the nurse does a pulse check and a pulse is present

cardiovascular system anatomy and physiology nurseslabs - Apr 03 2022

web sep 12 2023 cardiovascular system anatomy and physiology updated on september 12 2023 by marianne belleza r n journey to the heart of our being with the cardiovascular system study guide aspiring nurses chart the pulsating rivers of life as you discover the anatomy and dynamics of the body s powerful pump and intricate vessel

220 nclex practice questions for ekg heart failure etc nurseslabs - Apr 15 2023

web oct 5 2023 this nursing test bank set includes 220 nclex style practice questions that cover topics like dysrhythmias ekg interpretation heart failure myocardial infarction hematologic disorders and more use these questions to help you review for cardiovascular system disorders and as an alternative to quizlet

cardiac vascular nursing exam sample questions ana - Jan 12 2023

web review sample questions for the cardiac vascular nursing exam from the american nurses credentialing center ancc so you re prepared to ace the test

quiz heart failure msd manual professional edition - Jun 17 2023

web heart failure quiz heart failure hf question 1 of 3 which of the following is a sign or symptom of right ventricular failure in heart failure a agitation b dyspnea c fatigue d fluid accumulation am i correct

multiple choice questions heart - Jul 18 2023

web explanation the patient has class iii symptoms of heart failure from a known ischemic bmj publishing group limited bmj disclaims all liability and responsibility arising from any reliance supplemental material placed on this supplemental material which has been supplied by the author s heart higuchi k bhargava m heart 2022 108 565 572

heart failure nclex questions registered nurse rn - May 16 2023

web heart failure nclex questions this is a quiz that contains nclex questions for heart failure heart failure is where the heart

is too weak to pump efficiently so it can't provide proper cardiac output to maintain the body's metabolic needs

nursing test bank and nursing practice questions for free nurseslabs - Sep 08 2022

web jan 7 2021 newly updated nursing test bank questions about the nursing care of patients with cardiovascular system disorders topics include care of patients with cardiovascular disorders such as dysrhythmias hypertension coronary artery disease heart failure valvular diseases myocardial infarction and peripheral vascular diseases

cardiovascular nursing quiz questions part 2 the nurse page - Aug 19 2023

web jul 27 2018 b heart failure c coronary artery disease d myocarditis 14 which of the following medicine should withhold before giving cardioversion a diazepam b digoxin c heparin d warfarin 15 which is the most common blood vessel used in cabg surgery a the saphenous vein b the femoral artery c the popliteal vein

mcq heart failure and cor pulmonale part 2 medquizzes - Mar 14 2023

web jul 24 2021 d all of the above a should be initiated in low doses b upward titration at 2 week intervals c maximum dose as reported effective in clinical trials d

handbook of thin film technology iopscience - May 12 2023

web handbook of thin film technology to cite this article leon i maissel et al 1971 j electrochem soc 118 114c view the article online for updates and enhancements this content was downloaded from ip address 207 46 13 168 on 07 05 2022 at 02 48 electro organic electrometallurgy technology electronics larship baccalaureate engineering

handbook of thin film technology by leon i maissel reinhard - Jan 28 2022

web buy handbook of thin film technology by leon i maissel reinhard glang online at alibris we have new and used copies available in 0 edition starting at 58 50 shop now

handbook of thin film technology springerlink - Jul 14 2023

web about this book handbook of thin film technology covers all aspects of coatings preparation characterization and applications different deposition techniques based on vacuum and plasma processes are presented

handbook of thin film technology hardcover june 1 1970 - Dec 27 2021

web jun 1 1970 handbook of thin film technology maissel l glang r 9780070397422 books amazon ca

handbook of thin film technology google books - Feb 09 2023

web handbook of thin film technology leon i maissel reinhard glang mcgraw hill 1970 thin film devices 23 pages 1 review reviews aren't verified but google checks for and removes

handbook of thin film deposition sciencedirect - Nov 06 2022

web the handbook of thin film deposition is a comprehensive reference focusing on thin film technologies and applications used in the semiconductor industry and the closely related areas of thin film deposition thin film micro properties

photovoltaic solar energy applications new materials for memory applications and methods for thin film

handbook of thin film technology by leon i maissel open library - Sep 04 2022

web oct 7 2020 *handbook of thin film technology by leon i maissel 1970 mcgraw hill edition in english*

handbook of thin film technology leon i maissel reinhard - Oct 05 2022

web jan 1 1970 by leon i maissel author reinhard glang author 4 6 6 ratings see all formats and editions a method is described for determining the refractive index and thickness of thin films using data from single angle measurements of the intensity of linearly polarized light reflected from a growing film isbn 10

handbook of thin film technology google books - Dec 07 2022

web handbook of thin film technology leon i maissel reinhard glang snippet view 1970

handbook of thin film technology by maissel abebooks - Feb 26 2022

web handbook of thin film technology leon i maissel reinhard glang published by mcgraw hill new york ny u s a 1970

handbook of thin film technology maissel leon i editor free - Mar 10 2023

web handbook of thin film technology by maissel leon i editor glang reinhard editor

handbook of thin film technology maissel glang - Aug 15 2023

web feb 22 2019 publication date 1970 topics maissel gland thin film collection opensource language english the 1970s classic by maissel and glang on thin film technology

handbook of thin film technology google books - Jan 08 2023

web handbook of thin film technology leon i maissel reinhard glang mcgraw hill 1970 thin film devices 23 pages

handbook of thin film technology by leon i maissel open library - Aug 03 2022

web handbook of thin film technology by leon i maissel 1970 mcgraw hill edition in english

handbook of thin film technology hardcover abebooks - Mar 30 2022

web handbook of thin film technology leon i maissel reinhard glang published by mcgraw hill 1970 isbn 10 0070397422 isbn 13 9780070397422 new hardcover quantity 1 seller goldbooks austin tx u s a rating seller rating book description hardcover condition new new copy customer service guaranteed seller inventory

handbook of thin film technology worldcat org - Jul 02 2022

web handbook of thin film technology authors leon i maissel editor reinhard glang editor print book english 1970 edition view all formats and editions publisher mcgraw hill new york 1970 show more information worldcat is the world s largest library catalog helping you find library materials online

handbook of thin film technology edited by leon i maissel and - Jun 01 2022

web acknowledgement of country the national library of australia acknowledges australia s first nations peoples the first

australians as the traditional owners and custodians of this land and gives respect to the elders past and present and through them to all australian aboriginal and torres strait islander people

handbook of thin film technology iopscience - Jun 13 2023

web apr 1 1971 handbook of thin film technology journal of the electrochemical society volume 118 number 4 citation leon i maissel et al 1971 j electrochem soc 118 114c doi 10 1149 1 2408101

handbook of thin film technology google books - Apr 11 2023

web may 6 2015 springer science business media may 6 2015 technology engineering 380 pages handbook of thin film technology covers all aspects of coatings preparation characterization and

full text of handbook of thin film technology archive org - Apr 30 2022

web an illustration of a computer application window wayback machine texts icon an illustration of an open book books video icon an illustration of two cells of a film strip video audio icon an illustration of an audio speaker