

Janome 9500 Memory Craft

Instruction Manual



JANOME
MC9500

Janome 9500 Manual

Arturo Cuomo



Janome 9500 Manual:

This is likewise one of the factors by obtaining the soft documents of this **Janome 9500 Manual** by online. You might not require more era to spend to go to the books creation as competently as search for them. In some cases, you likewise pull off not discover the publication Janome 9500 Manual that you are looking for. It will entirely squander the time.

However below, once you visit this web page, it will be as a result agreed simple to get as competently as download lead Janome 9500 Manual

It will not take many get older as we explain before. You can reach it even if put it on something else at home and even in your workplace. appropriately easy! So, are you question? Just exercise just what we offer below as well as evaluation **Janome 9500 Manual** what you similar to to read!

<https://staging.conocer.cide.edu/files/virtual-library/HomePages/Encyclopedic%20Dictionary%20Of%20Religion.pdf>

Table of Contents Janome 9500 Manual

1. Understanding the eBook Janome 9500 Manual
 - The Rise of Digital Reading Janome 9500 Manual
 - Advantages of eBooks Over Traditional Books
2. Identifying Janome 9500 Manual
 - 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 Janome 9500 Manual
 - User-Friendly Interface
4. Exploring eBook Recommendations from Janome 9500 Manual
 - Personalized Recommendations

- Janome 9500 Manual User Reviews and Ratings
- Janome 9500 Manual and Bestseller Lists
- 5. Accessing Janome 9500 Manual Free and Paid eBooks
 - Janome 9500 Manual Public Domain eBooks
 - Janome 9500 Manual eBook Subscription Services
 - Janome 9500 Manual Budget-Friendly Options
- 6. Navigating Janome 9500 Manual eBook Formats
 - ePub, PDF, MOBI, and More
 - Janome 9500 Manual Compatibility with Devices
 - Janome 9500 Manual Enhanced eBook Features
- 7. Enhancing Your Reading Experience
 - Adjustable Fonts and Text Sizes of Janome 9500 Manual
 - Highlighting and Note-Taking Janome 9500 Manual
 - Interactive Elements Janome 9500 Manual
- 8. Staying Engaged with Janome 9500 Manual
 - Joining Online Reading Communities
 - Participating in Virtual Book Clubs
 - Following Authors and Publishers Janome 9500 Manual
- 9. Balancing eBooks and Physical Books Janome 9500 Manual
 - Benefits of a Digital Library
 - Creating a Diverse Reading Collection Janome 9500 Manual
- 10. Overcoming Reading Challenges
 - Dealing with Digital Eye Strain
 - Minimizing Distractions
 - Managing Screen Time
- 11. Cultivating a Reading Routine Janome 9500 Manual
 - Setting Reading Goals Janome 9500 Manual
 - Carving Out Dedicated Reading Time
- 12. Sourcing Reliable Information of Janome 9500 Manual
 - Fact-Checking eBook Content of Janome 9500 Manual

- 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

Janome 9500 Manual Introduction

In today's digital age, the availability of Janome 9500 Manual books and manuals for download has revolutionized the way we access information. Gone are the days of physically flipping through pages and carrying heavy textbooks or manuals. With just a few clicks, we can now access a wealth of knowledge from the comfort of our own homes or on the go. This article will explore the advantages of Janome 9500 Manual books and manuals for download, along with some popular platforms that offer these resources. One of the significant advantages of Janome 9500 Manual books and manuals for download is the cost-saving aspect. Traditional books and manuals can be costly, especially if you need to purchase several of them for educational or professional purposes. By accessing Janome 9500 Manual versions, you eliminate the need to spend money on physical copies. This not only saves you money but also reduces the environmental impact associated with book production and transportation. Furthermore, Janome 9500 Manual books and manuals for download are incredibly convenient. With just a computer or smartphone and an internet connection, you can access a vast library of resources on any subject imaginable. Whether you're a student looking for textbooks, a professional seeking industry-specific manuals, or someone interested in self-improvement, these digital resources provide an efficient and accessible means of acquiring knowledge. Moreover, PDF books and manuals offer a range of benefits compared to other digital formats. PDF files are designed to retain their formatting regardless of the device used to open them. This ensures that the content appears exactly as intended by the author, with no loss of formatting or missing graphics. Additionally, PDF files can be easily annotated, bookmarked, and searched for specific terms, making them highly practical for studying or referencing. When it comes to accessing Janome 9500 Manual books and manuals, several platforms offer an extensive collection of resources. One such platform is Project Gutenberg, a nonprofit organization that provides over 60,000 free eBooks. These books are primarily in the public domain, meaning they can be freely distributed and downloaded. Project Gutenberg offers a wide range of classic literature, making it an excellent resource for literature enthusiasts. Another popular platform for Janome 9500 Manual books and manuals is Open Library. Open Library is an initiative of the Internet Archive, a non-profit organization dedicated to digitizing cultural

artifacts and making them accessible to the public. Open Library hosts millions of books, including both public domain works and contemporary titles. It also allows users to borrow digital copies of certain books for a limited period, similar to a library lending system. Additionally, many universities and educational institutions have their own digital libraries that provide free access to PDF books and manuals. These libraries often offer academic texts, research papers, and technical manuals, making them invaluable resources for students and researchers. Some notable examples include MIT OpenCourseWare, which offers free access to course materials from the Massachusetts Institute of Technology, and the Digital Public Library of America, which provides a vast collection of digitized books and historical documents. In conclusion, Janome 9500 Manual books and manuals for download have transformed the way we access information. They provide a cost-effective and convenient means of acquiring knowledge, offering the ability to access a vast library of resources at our fingertips. With platforms like Project Gutenberg, Open Library, and various digital libraries offered by educational institutions, we have access to an ever-expanding collection of books and manuals. Whether for educational, professional, or personal purposes, these digital resources serve as valuable tools for continuous learning and self-improvement. So why not take advantage of the vast world of Janome 9500 Manual books and manuals for download and embark on your journey of knowledge?

FAQs About Janome 9500 Manual Books

1. Where can I buy Janome 9500 Manual books? Bookstores: Physical bookstores like Barnes & Noble, Waterstones, and independent local stores. Online Retailers: Amazon, Book Depository, and various online bookstores offer a wide range of books in physical and digital formats.
2. What are the different book formats available? Hardcover: Sturdy and durable, usually more expensive. Paperback: Cheaper, lighter, and more portable than hardcovers. E-books: Digital books available for e-readers like Kindle or software like Apple Books, Kindle, and Google Play Books.
3. How do I choose a Janome 9500 Manual book to read? Genres: Consider the genre you enjoy (fiction, non-fiction, mystery, sci-fi, etc.). Recommendations: Ask friends, join book clubs, or explore online reviews and recommendations. Author: If you like a particular author, you might enjoy more of their work.
4. How do I take care of Janome 9500 Manual books? Storage: Keep them away from direct sunlight and in a dry environment. Handling: Avoid folding pages, use bookmarks, and handle them with clean hands. Cleaning: Gently dust the covers and pages occasionally.
5. Can I borrow books without buying them? Public Libraries: Local libraries offer a wide range of books for borrowing.

Book Swaps: Community book exchanges or online platforms where people exchange books.

6. How can I track my reading progress or manage my book collection? Book Tracking Apps: Goodreads, LibraryThing, and Book Catalogue are popular apps for tracking your reading progress and managing book collections. Spreadsheets: You can create your own spreadsheet to track books read, ratings, and other details.
7. What are Janome 9500 Manual audiobooks, and where can I find them? Audiobooks: Audio recordings of books, perfect for listening while commuting or multitasking. Platforms: Audible, LibriVox, and Google Play Books offer a wide selection of audiobooks.
8. How do I support authors or the book industry? Buy Books: Purchase books from authors or independent bookstores. Reviews: Leave reviews on platforms like Goodreads or Amazon. Promotion: Share your favorite books on social media or recommend them to friends.
9. Are there book clubs or reading communities I can join? Local Clubs: Check for local book clubs in libraries or community centers. Online Communities: Platforms like Goodreads have virtual book clubs and discussion groups.
10. Can I read Janome 9500 Manual books for free? Public Domain Books: Many classic books are available for free as they're in the public domain. Free E-books: Some websites offer free e-books legally, like Project Gutenberg or Open Library.

Find Janome 9500 Manual :

[encyclopedia of religion](#)

[encyclopedia of the civil war a wiley desk reference](#)

[encyclopedia of origami techniques](#)

encyclopedia of u s government benefits

encargos al universo un manual para cumplir los sueos

encyclopedia of religions or faiths of man 1906

[encyclopedia of homonyms sound alike](#)

[encyclopedia of human behavior](#)

[encyclopedia of extraterrestrial encounters](#)

[encyclopaedic dictionary of physics volume 4](#)

[encyclopedia of twentieth-century warfare](#)

[encyclopedia of mathematics second edition](#)

encyclopaedic dictionary of psychology

encyclopedia of diasporas immigrant and refugee cultures around the world

enchanted realm of fairyland paper dolls

Janome 9500 Manual :

lucky luke vol 12 the rivals of painful gulch lucky luke - Feb 23 2023

buy lucky luke vol 12 the rivals of painful gulch lucky luke adventures illustrated edition by rene goscinnny isbn

9781905460601 from amazon s book store everyday low prices and free delivery on eligible orders

lucky luke tome 12 the rivals of painful gulch 12 broché - Sep 20 2022

two rival families live in painful gulch the o timmins clan who have big noses and the o haras who have big ears they ve been fighting for decades and don t even know why anymore lucky luke is appointed mayor in order to bring peace back to the town

lucky luke volume 12 the rivals of painful gulch overdrive - Jan 25 2023

mar 25 2013 two rival families live in painful gulch the o timmins clan who have big noses and the o haras who have big ears they ve been fighting for decades and don t even know why anymore lucky luke is appointed mayor in order to bring peace back to the town

lucky luke 12 the rivals of painful gulch issue comic vine - Oct 22 2022

new comics forums gen discussion bug reporting delete combine pages

9781905460601 lucky luke vol 12 the rivals of painful gulch lucky - Apr 27 2023

lucky luke 12 the rivals of painful gulch paperback by morris goscinnny and a great selection of related books art and collectibles available now at abebooks co uk

volume 12 the rivals of painful gulch lucky luke goodreads - Jul 31 2023

lucky luke volume 12 the rivals of painful gulch lucky luke morris rené goscinnny 3 94 469 ratings21 reviews two rival families live in painful gulch the o timmins clan who have big noses and the o haras who have big ears they ve been fighting for decades and don t even know why anymore

lucky luke volume 12 the rivals of painful gulch lucky luke - Jun 29 2023

mar 25 2013 lucky luke volume 12 the rivals of painful gulch lucky luke english version kindle edition by goscinnny rené morris download it once and read it on your kindle device pc phones or tablets

the rivals of painful gulch lucky luke cinebook ltd book 12 - Nov 22 2022

the rivals of painful gulch lucky luke cinebook ltd book 12 by goscinnny and morris book cover description publication history

lucky luke 12 the rivals of painful gulch cinebook co uk - Jun 17 2022

cedric ducoboo melusine papyrus scared to death spirou fantasio wind in the willows yakari yoko tsuno 7 to 77 alone bellybuttons the blake mortimer bluecoats the buck danny buck danny classics clifton gomer goof iznogoud lucky luke marsupilami rin tin can 12 akkad asterios authorised happiness bear s tooth chimpanzee complex

lucky luke 12 the rivals of painful gulch paperback - Jul 19 2022

lucky luke 12 the rivals of painful gulch morris gosciny amazon com au books

lucky luke tome 12 the rivals of painful gulch 12 rene - Mar 15 2022

recognizing the exaggeration ways to acquire this book lucky luke tome 12 the rivals of painful gulch 12 is additionally useful you have remained in right site to begin getting this info acquire the lucky luke tome 12 the rivals of painful gulch 12 associate that we find the money for here and check out the link you could purchase guide

9781905460601 lucky luke vol 12 the rivals of painful gulch lucky - Dec 24 2022

two rival families live in painful gulch the o timmins clan who have big noses and the o haras who have big ears they ve been fighting for decades and don t even know why anymore lucky luke is appointed mayor in order to bring peace back to the town but the men and their thick headed sense of honour will wreck all of lucky luke s plans

lucky luke vol 12 rivals of painful gulch a lucky luke - Sep 01 2023

lucky luke vol 12 rivals of painful gulch a lucky luke adventure band 12 gosciny amazon com tr kitap

lucky luke 012 the rivals of painful gulch directory listing - May 29 2023

apr 13 2022 name last modified size go to parent directory lucky luke 012 the rivals of painful gulch cbz view contents 13

apr 2022 15 59 40 5m lucky luke 012 the rivals of painful gulch pdf

lucky luke volume 12 the rivals of painful gulch apple books - Mar 27 2023

mar 25 2013 two rival families live in painful gulch the o timmins clan who have big noses and the o haras who have big ears they ve been fighting for decades and don t even know why anymore lucky luke is appointed mayor in order to bring peace back to the town but the men and their thick headed sense of

lucky luke tome 12 the rivals of painful gulch cultura - May 17 2022

lucky luke tome 12 the rivals of painful gulch 1905460600 bd jeunesse cultura lucky luke tome 12 the rivals of painful gulch aux éditions cinebook two rival families live in painful gulch the o timmins clan who have big noses and the o haras who have big ears

a lucky luke adventure the rivals of painful gulch 12 - Feb 11 2022

jan 1 2006 a lucky luke adventure 12 cinebook 2006 discover the value of your comic today

lucky luke 012 the rivals of painful gulch archive org - Oct 02 2023

2022 04 04 07 12 13 identifier lucky luke 012 the rivals of painful gulch identifier ark ark 13960 s2dj0jfn1b ocr tesseract 5 0 0 1 g862e ocr detected lang en

lucky luke 12 the rivals of painful gulch alibris - Aug 20 2022

buy lucky luke 12 the rivals of painful gulch by morris goscinnny online at alibris we have new and used copies available in 1 editions starting at 9 79 shop now

lucky luke vol 12 the rivals of painful gulch lucky luke - Apr 15 2022

books books lucky luke vol 12 the rivals of painful gulch lucky luke adventure paperback 2008 rate price alert compare english goscinnny price 7 35 only in stock price incl delivery delivery options lowest price lucky luke vol 12 the rivals of painful gulch lucky luke adventures paperback 7 35 free shipping advertisement

golden tulip hotel pdf hotel hospitality industry scribd - May 01 2023

web golden tulip riyadh hotel your 4 star hotel in riyadh right in the heart of the capital the golden tulip riyadh hotel invites you to reside in a luxurious hotel with concierge

golden tulip hotel manali rooms rates photos reviews - Mar 19 2022

pdf golden tulip user guide hotel website user guide - Jul 03 2023

web uploaded by golden tulip is a 189 hotels portfolio representing 23 322 rooms through 3 brands tulip inn golden tulip and royal tulip founded in 1962 with nearly 50 years

golden tulip hotel manual pdf pdf bukuclone ortax - Nov 26 2022

web 4 golden tulip hotel manual 2022 09 01 version of this publication sells at 24 99 you are not so much buying a book but information which will be invaluable tanzania

golden tulip hotel manual admin store motogp com - Jul 23 2022

web golden tulip hotel manali 91 8191900043 91 7417300033 near club house kullu manali himachal pradesh 175131

rooms hotel golden tulip pontianak - Jan 29 2023

web the golden tulip istanbul bayrampasa 5 star hotel an essential stopover for your stay in istanbul 10 on the daily rate for all people over the age of 60 in golden tulip

rooms golden tulip tirupati suites in tirupati sarovar hotels - Jan 17 2022

golden tulip hotels 3 4 5 stars luxury hotels - Jun 02 2023

web contents mission and vision 4 letter from the c e o 5 the group 7 achievements and developments 2006 15 the business 21 the golden tulip formula 29

golden tulip hotel manual orientation sutd edu - May 21 2022

web suite the suite spans across an area of 421 sq ft there are a total of 5 suites each of which can accommodate up to 2 adults and 2 children these spacious suites in tirupati

golden tulip pattaya beach resort amphoe bang lamung - Apr 19 2022

web 91 80 5115 7588 mobile 91 7898988505 mobile gmgth goldentulipin com fom goldentulipmpn com hotel facilities 4 categories of rooms fitness centre banquet

annual report 2006 hospitality net - Mar 31 2023

web questions there is a detailed glossary of useful terms the book is suitable for those taking hotel catering and institutional operations management examinations and

golden tulip tirupati golden tulip hotels hotel in tirupati - Feb 15 2022

golden tulip hotel manual 2023 - Jun 21 2022

web golden tulip is a 4 star luxury hotel in the holy city of tirupati it is located at the foothills of tirumala and is opposite 100 feet of bypass road near alipiri toll plaza it offers

golden tulip shanghai rainbow hotel 4 star - Dec 28 2022

web the golden tulip doha features 193 hotel rooms all equipped with the highest international standard standard room also includes a coffee and tea kettle minibar in

golden tulip hotel manual uniport edu ng - Oct 26 2022

web golden tulip hotel manual right here we have countless ebook golden tulip hotel manual and collections to check out we additionally have the funds for variant types

golden tulip bhopal hotel in bhopal - Dec 16 2021

about our brands golden tulip hotels - Aug 04 2023

web also you can click add another item which allows you to display several social media icons on your hotel website golden tulip user guide hotel website page 20 64

hotel doha golden tulip - Aug 24 2022

web golden tulip pattaya beach resort amphoe bang lamung 19 589 likes 135 talking about this 6 012 were here

□□□□□□□□ □ □□□□□□□ □□

hotel riyadh golden tulip - Feb 27 2023

web sep 1 2023 golden tulip hotel manual 2 2 downloaded from uniport edu ng on september 1 2023 by guest depending on

your experience in the business is a road

let s develop a new kind of business hotel louvre hotels - Oct 06 2023

web founded in 1962 in the netherlands golden tulip has always had an upscale positioning thanks to its 4 star hotels all around the world golden tulip is part of louvre hotels

golden tulip istanbul bayrampasa hotel 5 star - Sep 24 2022

web golden tulip hotel manual the 2013 calendar on various open entry programmes currently scheduled for nairobi kenya is now shown below we also conduct in house

frequently asked questions golden tulip hotels - Sep 05 2023

web 1 choose your hotel 2 book directly with the hotel s front desk by telephone and mention that you have a discount voucher from client services you ll find the hotel s phone

pltw poen a assignment 2 1 4 course hero - Apr 29 2022

web calculate the x and y components of the resultant force r by summing the x and y components of vectors a and b 22 l133

14 3 23 qc v 2012 project lead the way inc principles of engineering activity 2 1 4 calculating force vectors page 2 an eye

screw is ex and h 50n periencing two tension forces g 100n 1 1 ketch vector g

activity 2 1 4 calculating force vectors stuvia - Mar 09 2023

web feb 12 2022 principles of engineering institution sophomore 10th grade drawing free body diagrams to help calculate the magnitude and direction of forces preview 2 out of 5 pages

calculating force vectors pltw - Dec 06 2022

web title calculating force vectors pltw author jens westheimer from orientation sutd edu sg subject calculating force vectors pltw keywords pltw force calculating

poe 2 1 mr bartos website - Jun 12 2023

web in this section you will learn how to identify and calculate forces acting on a body when it is in static equilibrium then calculate internal and external forces of a truss and use this knowledge to design build and test truss designs

lieu pltw forces and vectors google sites - Feb 08 2023

web description building off of free body diagrams forces and vectors builds on our foundation of what forces are and bridges it with calculations here s an example scenario that calculating force vectors can help us with provided by pltw if guy wires are used to stabilize a tower what is the

2 1 4 a calculating force vectors studocu - Oct 16 2023

web in this activity you will calculate force vectors 1 what is the magnitude of vector a 5 2 what is the direction of vector a relative to the negative y axis 30 counterclockwise 4 what is the sense of vector a negative down positive right 6 sketch

vector a with its x and y components solve for component forces with a precision of 0

[pltw poe new 23 24 activity 2 1 3 force vectors youtube](#) - Sep 15 2023

web this video covers how to calculate force vectors magnitude vectors and final angle via functions in google sheets link to copy of spreadsheet used in the v

[unit 2 materials and statics pltw engineering academy](#) - Aug 14 2023

web in this activity you will identify the centroid location of common and complex shapes using object symmetry mathematics and mdsolids software calculate and label the centroid location calculate label and dimension the x and y components

unit 2 1 pltw engineering classes - May 31 2022

web activity 2 1 4 calculating force vectors i have attached the answer key here so you can check your work as you go do not use the key to cheat instead try doing the problems first and then check your answers answer key for activity 2 1 4 if you finish before the end of the period use the time to look over the final exam review materials

pltw engineering classes - Mar 29 2022

web pk o8 1 ž content types xml vmoŮ0 ½ Ø 0 l 0 cœ î x í Ět Ĩú Ä4É e7if v ŽÀÇÇÇgjĚ fª gp Åwé Ž sh½Éâ ë ĚÇ8òÈuÁ àã ŌŮ7ĚõÑ zû Þ ŮoĚy Å j h s éOm ââ7ß 0a4 Æ f¼zP ^îÃo q v ú Ô½3Ö gŸ è ¹µ Ōe ubÊr ĆØ j jđĩ Äûkrø ßu Ý hž vo k t Ÿ

[pltw calculating force vectors activity 2 1 4 calculating](#) - Oct 04 2022

web instructio engineerin activity 2 1 4 calculating force vectors show all work 15 22introduction if guy wires are used to stabilize a tower what is the minimum number of wires necessary imagine what would happen if you only used one or two wires the guy wires work together so that the tower does not fall in any direction

2 1 4 calculating force vectors anskey documents and e books - Sep 03 2022

web calculate the resultant force fr by summing the x and y components of vectors a and b sfx fax fbx sfx 0 sfy fay fby sfy 9 n project lead the way inc copyright 2010 poe unit 2 activity 2 1 4 calculating force vectors answer key page 2 an eye screw is experiencing two tension forces g 100n and h 50n

aa1 force vectors 1 pdf 10 15 2019 activity 2 1 4 calculating - Nov 05 2022

web view force vectors 1 pdf from aa 110 15 2019 activity 2 1 4 calculating force vectors pltw engineering activity 2 1 4 calculating force vectors introduction if guy wires are used to stabilize a

2 1 4 calculating force vectors weebly - Jul 13 2023

web 2 1 4 calculating force vectors introduction if guy wires are used to stabilize a tower what is the minimum number of wires necessary imagine what would happen if you only used one or two wires the guy wires work together so that the tower does not fall

2 1 4 calculating net force pltw poe youtube - Apr 10 2023

web in this lesson we review three net force problems and offer a review on how to resolve a vector into components we also take the time to discuss the steps involved in finding net force as well as

[activity 2 1 4 calculating force vectors principles of engineering pdf](#) - Jan 07 2023

web pltw engineering activity 2 1 4 calculating force vectors distance learning ai homework help expert help study resources log in join activity 2 1 4 calculating force vectors principles of engineering pdf doc preview pages 6 total views 15 lebanon trail high school eng eng 2 brigadiercrown9657 8 27 2022 view full

calculating force vectors pdf activity 2 1 4 calculating - May 11 2023

web view calculating force vectors pdf from pltw poe at butler university activity 2 1 4 calculating force vectors introduction if guy wires are used to stabilize a tower what is the minimum number of upload to study

activity 2 1 4 calculating force vectors answer key 5 sin 30 - Jul 01 2022

web procedure in this activity you will calculate force vectors 1 what is the magnitude of vector a 5 On 2 what is the direction of vector a relative to the negative y axis 30 ccw 4 what is the sense of vector a down and to the right 6 sketch vector a with itsx and y components solve for component forces with a precision of 0 0

build the future activity 2 1 4 calculating force vectors blogger - Aug 02 2022

web dec 6 2013 it does if you re in the right mode degrees unknown december 5 2016 at 5 18 am facto anonymous december 5 2016 at 6 30 am yeee unknown january 24 2017 at 12 45 pm it dose equal 2 5 anonymous february 6 2018 at 11 11 am your stupid sin 30 1 2 so multiply that by 5 and boooooom magic 2 5

force vector addition vcalc - Feb 25 2022

web apr 9 2018 the formula for the addition of two force vectors is $c^2 = b^2 \sin^2 \theta + a^2 - 2ab \cos \theta$ $\alpha = \arcsin \frac{y}{c}$ where α is the resulting vector angle y is the resulting vector vertical offset c is the sum of the two force vectors a is the first force vector b is the second force vector