

Properties Of Parallelograms Worksheet Answers

Geometry

Name: _____
Date: _____

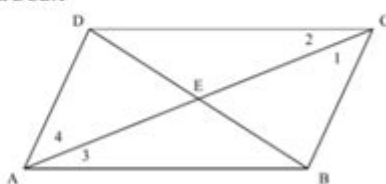
Parallelogram Worksheet

I. Complete each statement.

- In a parallelogram, opposite sides are _____ and _____.
- In a parallelogram, consecutive angles are _____.
- In a parallelogram, diagonals _____ each other, which means they split each other in _____.

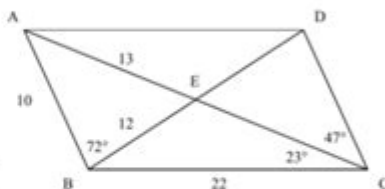
II. Complete each statement, using Parallelogram DCBA

- If $AD = 20$, then $BC =$ _____
- If $AB = 13$, then $DC =$ _____
- If $DB = 22$, then $DE =$ _____
- If $AE = 18$, then $AC =$ _____
- If $m\angle ADC = 115^\circ$, then $m\angle ABC =$ _____
- If $m\angle DAB = 75^\circ$, $m\angle ADC =$ _____
- If $m\angle AED = 72^\circ$, $m\angle DEC =$ _____
- If $AC = 30$ and $AE = 3x + 3$, then $x =$ _____
- If $m\angle 1 = 30^\circ$, then $m\angle 4 =$ _____
- If $m\angle ADC = 130^\circ$, and $m\angle 1 = 35^\circ$, $m\angle 2 =$ _____
- If $DC = 6x + y$, $BC = 3x + 2y$, $AB = 25$, and $AD = 14$, then $x =$ _____ and $y =$ _____



III. Find the missing measurements of Parallelogram ADCB.

- $CD =$ _____
- $DA =$ _____
- $AC =$ _____
- $DB =$ _____
- $CE =$ _____
- $DE =$ _____
- $m\angle ABC =$ _____
- $m\angle BCE =$ _____
- $m\angle BCD =$ _____
- $m\angle ADC =$ _____
- $m\angle BAD =$ _____
- $m\angle CDE =$ _____
- $m\angle DAE =$ _____
- $m\angle EAB =$ _____
- $m\angle BEC =$ _____
- $m\angle CED =$ _____



- $m\angle EDA =$ _____
- $m\angle AEB =$ _____
- $m\angle DEA =$ _____

Properties of Parallelograms Worksheet Answers: A Comprehensive Guide

Are you struggling with your geometry homework? Feeling lost in the world of parallelograms and their perplexing properties? Don't worry, you're not alone! This comprehensive guide provides not just the answers to your properties of parallelograms worksheet, but also a deep understanding of the concepts behind them. We'll break down the key characteristics of parallelograms, explaining each property with clear examples and illustrations, ensuring you can confidently tackle any future

problems. This isn't just about getting the right answers; it's about mastering the material.

Understanding the Fundamentals: What is a Parallelogram?

Before diving into the worksheet answers, let's establish a solid foundation. A parallelogram is a quadrilateral – a four-sided polygon – with specific characteristics that set it apart from other quadrilaterals like rectangles, squares, and rhombuses. The defining features of a parallelogram are:

Opposite sides are parallel: This is the most fundamental property. Think of parallel lines as lines that never intersect, no matter how far they extend.

Opposite sides are congruent (equal in length): If you measure the lengths of opposite sides, they will always be the same.

Opposite angles are congruent: Similar to the sides, opposite angles in a parallelogram are always equal in measure.

Consecutive angles are supplementary: This means that consecutive (adjacent) angles add up to 180 degrees.

Key Properties Illustrated:

Imagine a parallelogram ABCD. Let's visualize the properties:

AB is parallel to CD, and BC is parallel to AD.

$AB = CD$, and $BC = AD$.

$\angle A = \angle C$, and $\angle B = \angle D$.

$\angle A + \angle B = 180^\circ$, $\angle B + \angle C = 180^\circ$, $\angle C + \angle D = 180^\circ$, $\angle D + \angle A = 180^\circ$.

Tackling the Worksheet: Sample Problem Solutions

While we can't provide specific answers to your worksheet without seeing it, we can work through several typical problems that test understanding of parallelogram properties.

Problem 1: Find the measure of angle x if one angle in a parallelogram measures 75° .

Solution: Since consecutive angles are supplementary, $x + 75^\circ = 180^\circ$. Therefore, $x = 105^\circ$.

Alternatively, if 75° is one angle, its opposite angle is also 75° , and the other two angles are each 105° .

Problem 2: If two adjacent sides of a parallelogram measure 8cm and 12cm, what are the lengths of the other two sides?

Solution: Opposite sides of a parallelogram are congruent. Therefore, the other two sides also measure 8cm and 12cm respectively.

Problem 3: Prove that a given quadrilateral is a parallelogram using its properties.

Solution: To prove a quadrilateral is a parallelogram, you must demonstrate that either opposite sides are parallel or opposite sides are congruent. Showing both is a more robust proof. Measurements of angles and sides can be used to verify these properties.

Advanced Properties and Applications

Beyond the fundamental properties, parallelograms possess other characteristics relevant to more advanced geometry:

Diagonals bisect each other: This means the diagonals cut each other in half, creating four congruent triangles.

The sum of the interior angles is always 360° : This is a property of all quadrilaterals, but it's important to remember in the context of parallelograms.

These properties are crucial for solving more complex geometric problems and understanding the relationships between different types of quadrilaterals.

Beyond the Worksheet: Strengthening Your Understanding

The key to mastering parallelograms isn't just memorizing answers; it's about understanding why these properties exist. Practice drawing different parallelograms, labeling their sides and angles, and applying the properties to solve various problems. Use online resources, interactive geometry software, or textbooks to supplement your learning. The more you practice, the more confident you'll become.

Conclusion

This guide aims to equip you with not just the answers to your properties of parallelograms worksheet but also a thorough understanding of the concepts involved. Remember to focus on understanding the properties, not just memorizing them. Practice will solidify your understanding, enabling you to confidently tackle any future geometry challenges.

FAQs

1. What's the difference between a parallelogram and a rectangle? A rectangle is a special type of

parallelogram where all angles are 90 degrees.

2. Can a square be considered a parallelogram? Yes, a square is a parallelogram, rectangle, and rhombus—it possesses all the properties of each.

3. How do I find the area of a parallelogram? The area of a parallelogram is calculated by multiplying the base by the height (the perpendicular distance between the base and the opposite side).

4. Are all quadrilaterals parallelograms? No, only quadrilaterals with opposite sides parallel are parallelograms.

5. Where can I find more practice problems on parallelograms? Numerous online resources, textbooks, and educational websites offer practice problems on parallelograms. Search for "parallelogram practice problems" to find suitable exercises.

properties of parallelograms worksheet answers: Common Core Geometry Kirk Weiler, 2018-04

properties of parallelograms worksheet answers: *Elementary College Geometry* Henry Africk, 2004

properties of parallelograms worksheet answers: **S.Chand's Mathematics For Class IX Term II** H.K. Dass, Rama Verma & Bhagwat S. Sharma, S. Chand's Mathematics books for Classes IX and X are completely based on CCE pattern of CBSE. The book for Term I covers the syllabus from April to September and the book for Term II covers the syllabus from October to March.

properties of parallelograms worksheet answers: New National Framework Mathematics 8+ Teacher Planning Pack M. J. Tipler, 2014-11 Each lesson plan contains everything you will need to teach the course including Framework Objectives & Medium Term Planning references, resources needed, starter and plenary ideas and links to Homework activities. The pack also features mappings to the Framework for teaching mathematics and the Medium Term Plan, National Curriculum/Framework planning grids.

properties of parallelograms worksheet answers: Addison-Wesley Informal Geometry , 1992

properties of parallelograms worksheet answers: **New York Math: Math A** , 2000

properties of parallelograms worksheet answers: *Intro to Geometry* Mary Lee Vivian, Tammy Bohn-Voepel, Margaret Thomas, 2003 A top-selling teacher resource line The 100+ Series(TM) features over 100 reproducible activities in each book! Intro to Geometry links all the activities to the NCTM Standards and is designed to provide students with practice in the skill areas required

properties of parallelograms worksheet answers: *New National Framework Mathematics 8 Core Pupil's Book* M. J. Tipler, 2003 This series for Key Stage 3 mathematics has been written to match the Framework for teaching mathematics. Comprising parallel resources for each year and covering all ability levels, it provides a consistent but fully differentiated approach.

properties of parallelograms worksheet answers: Discovering Geometry Michael Serra, Key Curriculum Press Staff, 2003-03-01

properties of parallelograms worksheet answers: *Middle School Math with Pizzazz!: E. Ratio and proportion; Percent; Statistics and graphs; Probability; Integers; Coordinate graphing; Equations* Steve Marcy, 1989

properties of parallelograms worksheet answers: **411 SAT Algebra and Geometry Questions** , 2006 In order to align the SAT with the math curriculum taught in high schools, the SAT exam has been expanded to include Algebra II materials. 411 SAT Algebra and Geometry Questions is created to offer you a rigorous preparation for this vital section. If you are planning to

take the SAT and need extra practice and a more in-depth review of the Math section, here's everything you need to get started. 411 SAT Algebra and Geometry Questions is an imperative study tool tailored to help you achieve your full test-taking potential. The most common math skills that you will encounter on the math portion of the SAT are covered in this book. Increase your algebra and geometry skills with proven techniques and test your grasp of these techniques as you complete 411 practice questions, including a pre- and posttest. Follow up by reviewing our comprehensive answer explanations, which will help measure your overall improvement. The questions are progressively more difficult as you work through each set. If you can handle the last question on each set, you are ready for the SAT! Book jacket.

properties of parallelograms worksheet answers: Euclid's Elements Euclid, Dana Densmore, 2002 The book includes introductions, terminology and biographical notes, bibliography, and an index and glossary --from book jacket.

properties of parallelograms worksheet answers: EnVision Florida Geometry Daniel Kennedy, Eric Milou, Christine D. Thomas, Rose Mary Zbiek, Albert Cuoco, 2020

properties of parallelograms worksheet answers: Elementary Geometry for College Students Daniel C. Alexander, GERALYN M. KOEBERLEIN, 1999

properties of parallelograms worksheet answers: Acing the New SAT Math Thomas Hyun, 2016-05-01 SAT MATH TEST BOOK

properties of parallelograms worksheet answers: CK-12 Trigonometry - Second Edition CK-12 Foundation, 2011-10-14 CK-12's Trigonometry-Second Edition is a clear presentation of trigonometry for the high school student. Its 6 chapters cover the following topics: Right Triangles and an Introduction to Trigonometry, Graphing Trigonometric Functions, Trigonometric Identities and Equations, Inverse Trigonometric Functions, Triangles and Vectors, and The Polar System.

properties of parallelograms worksheet answers: Patty Paper Geometry Michael Serra, 1994

properties of parallelograms worksheet answers: Teaching Mathematics in Grades 6 - 12 Randall E. Groth, 2012-08-10 Teaching Mathematics in Grades 6 - 12 by Randall E. Groth explores how research in mathematics education can inform teaching practice in grades 6-12. The author shows preservice mathematics teachers the value of being a researcher—constantly experimenting with methods for developing students' mathematical thinking—and connecting this research to practices that enhance students' understanding of the material. Ultimately, preservice teachers will gain a deeper understanding of the types of mathematical knowledge students bring to school, and how students' thinking may develop in response to different teaching strategies.

properties of parallelograms worksheet answers: GMAT Algebra Strategy Guide Manhattan Prep, 2014-12-02 The Algebra GMAT Strategy Guide covers algebra in all its various forms (and disguises) on the GMAT, helping you master both fundamental techniques and nuanced strategies for solving algebraic problems. Unlike other guides that attempt to convey everything in a single tome, the Algebra GMAT Strategy Guide is designed to provide deep, focused coverage of one specialized area tested on the GMAT. As a result, students benefit from thorough and comprehensive subject material, clear explanations of fundamental principles, and step-by-step instructions of important techniques. In-action practice problems and detailed answer explanations challenge the student, while topical sets of Official Guide problems provide the opportunity for further growth. Used by itself or with other Manhattan Prep Strategy Guides, the Algebra GMAT Strategy Guide will help students develop all the knowledge, skills, and strategic thinking necessary for success on the GMAT. Purchase of this book includes six months of access to Manhattan Prep's Algebra Question Bank. All of Manhattan Prep's GMAT Strategy Guides are aligned with the GMAC Official Guide, 2016 edition.

properties of parallelograms worksheet answers: New National Framework Mathematics 8 M. J. Tipler, 2003 New National Framework Mathematics features extensive teacher support materials which include dedicated resources to support each Core and Plus Book. The 8 Core Teacher Planning Pack contains Teacher Notes for every chapter with a 'Self-contained lesson plan'

for each of the units in the pupil books.

properties of parallelograms worksheet answers: *Geometry* G. D. Chakerian, Calvin D. Crabill, Sherman K. Stein, 1998

properties of parallelograms worksheet answers: **New General Mathematics for Junior Secondary Schools** Murray Macrae, A. O. Kalejaiye, Z. I. Chima, G. U. Gaba, M. O. Ademosu, 2008-06-03 This well-established series, the most popular in Nigeria, has been fully revised to reflect recent developments in mathematics education at junior secondary level and the views of the many users of the books. It has especially been revised to fully cover the requirements of the new NERDC Universal Basic Education Curriculum.

properties of parallelograms worksheet answers: **Routines for Reasoning** Grace Kelemanik, Amy Lucenta, Susan Janssen Creighton, 2016 Routines can keep your classroom running smoothly. Now imagine having a set of routines focused not on classroom management, but on helping students develop their mathematical thinking skills. Routines for Reasoning provides expert guidance for weaving the Standards for Mathematical Practice into your teaching by harnessing the power of classroom-tested instructional routines. Grace Kelemanik, Amy Lucenta, and Susan Janssen Creighton have applied their extensive experience teaching mathematics and supporting teachers to crafting routines that are practical teaching and learning tools. -- Provided by publisher.

properties of parallelograms worksheet answers: *Geometry for Enjoyment and Challenge* Richard Rhoad, George Milauskas, Robert Whipple, 1981

properties of parallelograms worksheet answers: **Discovering Advanced Algebra** Jerald Murdock, Ellen Kamischke, 2010 Changes in society and the workplace require a careful analysis of the algebra curriculum that we teach. The curriculum, teaching, and learning of yesterday do not meet the needs of today's students.

properties of parallelograms worksheet answers: New National Framework Mathematics 8+ Pupil's Book M. J. Tipler, 2003 This series for Key Stage 3 mathematics has been written to match the Framework for teaching mathematics. Comprising parallel resources for each year and covering all ability levels, it has a consistent but fully differentiated approach.

properties of parallelograms worksheet answers: **Mathematics Year 6 Answers** Serena Alexander, 2014-12-26 Features the complete set of answers to the exercises in Mathematics Year 6, as well as a selection of photocopiable worksheets to save you time and enable you to identify areas requiring further attention. The book includes diagrams and workings where necessary, to ensure pupils understand how to present their answers, as well as photocopiable worksheets at the back of the book. Also available from Galore Park www.galorepark.co.uk: - Mathematics Year 6 - Mathematics Year 5 - Mathematics Year 5 Answers - 11+ Maths Practice Exercises - 11+ Maths Revision Guide - 10-Minute Maths Tests Workbook Age 8-10 - 10-Minute Maths Tests Workbook Age 9-11 - Mental Arithmetic Workbook Age 8-10 - Mental Arithmetic Workbook Age 9-11

properties of parallelograms worksheet answers: **Star Dad of the Galaxy** Happy Family, 2019-05-21 ☺☺☺ A loving gift for DAD from the

properties of parallelograms worksheet answers: Geometry Common Core Alabama Holt McDougal, 2012

properties of parallelograms worksheet answers: **Saxon Geometry** Saxpub, 2009 Geometry includes all topics in a high school geometry course, including perspective, space, and dimension associated with practical and axiomatic geometry. Students learn how to apply and calculate measurements of lengths, heights, circumference, areas, and volumes. Geometry introduces trigonometry and allows students to work with transformations. Students will use logic to create proofs and constructions and will work with key geometry theorems and proofs. - Publisher.

properties of parallelograms worksheet answers: Patterns and Parkas Sandi Pendergrast, 2007 Grade two students learn about the properties of shapes including squares, rectangles, triangles, and parallelograms. They learn a variety of ways to make those shapes and how Yup'ik elders use these shapes to create patterns. As the students make shapes, they learn about geometrical relationships, symmetry, congruence, proofs and measuring. Students connect learning

in the community to learning in school. About the Series Math in a Cultural Context This series is a supplemental math curriculum based on the traditional wisdom and practices of the Yup'ik people of southwest Alaska. The result of more than a decade of collaboration between math educators and Yup'ik elders, these modules connect cultural knowledge to school mathematics. Students are challenged to communicate and think mathematically as they solve inquiry-oriented problems, which require creative, practical and analytical thinking. Classroom-based research strongly suggests that students engaged in this curriculum can develop deeper mathematical understandings than students who engage only with a procedure-oriented, paper-and-pencil curriculum.

properties of parallelograms worksheet answers: Geometry , 2014-08-07 This student-friendly, all-in-one workbook contains a place to work through Explorations as well as extra practice worksheets, a glossary, and manipulatives. The Student Journal is available in Spanish in both print and online.

properties of parallelograms worksheet answers: Prentice Hall Geometry , 1998

properties of parallelograms worksheet answers: Discrete Mathematics Oscar Levin, 2016-08-16 This gentle introduction to discrete mathematics is written for first and second year math majors, especially those who intend to teach. The text began as a set of lecture notes for the discrete mathematics course at the University of Northern Colorado. This course serves both as an introduction to topics in discrete math and as the introduction to proof course for math majors. The course is usually taught with a large amount of student inquiry, and this text is written to help facilitate this. Four main topics are covered: counting, sequences, logic, and graph theory. Along the way proofs are introduced, including proofs by contradiction, proofs by induction, and combinatorial proofs. The book contains over 360 exercises, including 230 with solutions and 130 more involved problems suitable for homework. There are also Investigate! activities throughout the text to support active, inquiry based learning. While there are many fine discrete math textbooks available, this text has the following advantages: It is written to be used in an inquiry rich course. It is written to be used in a course for future math teachers. It is open source, with low cost print editions and free electronic editions.

properties of parallelograms worksheet answers: Getting Ready for the 4th Grade

Assessment Tests Erika Warecki, 2002 Getting Ready for the 4th Grade Assessment Test: Help Improve Your Child's Math and English Skills - Many parents are expressing a demand for books that will help their children succeed and excel on the fourth grade assessment tests in math and English -especially in areas where children have limited access to computers. This book will help students practice basic math concepts, i.e., number sense and applications as well as more difficult math, such as patterns, functions, and algebra. English skills will include practice in reading comprehension, writing, and vocabulary. Rubrics are included for self-evaluation.

properties of parallelograms worksheet answers: Integrated Math, Course 2, Student Edition CARTER 12, McGraw-Hill Education, 2012-03-01 Includes: Print Student Edition

properties of parallelograms worksheet answers: Functions, Statistics and

Trigonometry , 2010 Provides a broad-based, reality-oriented, easy-to-comprehend approach to the topic. Materials are designed to take into account the wide range of backgrounds and knowledge of students. Emphasizes skill in carrying out various algorithms; developing and using mathematical properties, relationships, and proofs; applying mathematics in realistic situations; and representing concepts with graphs or other diagrams. Includes self-test exercises.

properties of parallelograms worksheet answers: Holt McDougal Mathematics Grade 6

Jennie M. Bennett, Edward B. Burger, David J. Chard, Earlene J. Hall, Holt McDougal, Houghton Mifflin Harcourt Publishing Company, Paul A. Kennedy, Freddie Lee Renfro, Tom W. Roby, Janet K. Scheer, Bert K. Waits, 2012 The new Holt McDougal Mathematics for middle school provides complete and comprehensive coverage of the Common Core State Standards with content and standards of mathematical practices documented throughout every lesson. The unique integrated assessment and intervention features, Are You Ready and Ready To Go On, demonstrate if the students have the prerequisite depth of knowledge to proceed with the chapter content. In order to

be a good problem solver, students need a good problem-solving process. The process used in this book is: understand the problem, make a plan, solve, look back. - Publisher.

properties of parallelograms worksheet answers: Math Makes Sense 5: v.2. Math makes sense 5 practice and homework book, teacher's edition Ray Appel, Peggy Morrow, Maggie Martin Connell, Pearson Education Canada, 2010

properties of parallelograms worksheet answers: *Math Makes Sense 7* Ray Appel, 2016

peer_____ **peer**_____
_____177_____AI_____

_____ ...

dynamic_____ **dynamic**_____
_____177_____AI_____

_____ ...

magical_____ **magical**_____
_____177_____AI_____

_____ ...

simultaneously_____ **simultaneously**_____
_____177_____AI_____

_____ ...

contiguous_____ **contiguous**_____
_____177_____AI_____

_____ ...

_____177_____AI_____

_____ ...

localization_____ **localization**_____
_____177_____AI_____

_____ ...

iciba - _____

_____AI_____

peer_____ **peer**_____
_____177_____AI_____

_____ ...

dynamic_____ **dynamic**_____
_____177_____AI_____

_____ ...

magical_____ **magical**_____
_____177_____AI_____

_____ ...

simultaneously_____ **simultaneously**_____

177 AI
...

contiguous contiguous ...
177 AI
...

-177 AI ...
177 AI
...

localization localization ...
177 AI
...

iciba -
AI

[Back to Home](#)