

Both numbers 12 and 36 are divisible by 12, $\Rightarrow 12 \div 12 = 1, 36 \div 12 = 3$,

Then: $\frac{12}{36} = \frac{1}{3}$

Proportional Ratios

Step-by-step guide:

- ✓ A proportion means that two ratios are equal. It can be written in two ways:

$$\frac{a}{b} = \frac{c}{d}, a : b = c : d$$

- ✓ The proportion $\frac{a}{b} = \frac{c}{d}$ can be written as: $a \times d = c \times b$

Examples:

- 1) Solve this proportion for x . $\frac{4}{8} = \frac{5}{x}$

Use cross multiplication: $\frac{4}{8} = \frac{5}{x} \Rightarrow 4 \times x = 5 \times 8 \Rightarrow 4x = 40$

Divide to find x : $x = \frac{40}{4} \Rightarrow x = 10$

- 2) If a box contains red and blue balls in ratio of 2: 3 red to blue, how many red balls are there if 90 blue balls are in the box?

Write a proportion and solve. $\frac{2}{3} = \frac{x}{90}$

Use cross multiplication: $2 \times 90 = 3 \times x \Rightarrow 180 = 3x$

Divide to find x : $x = \frac{180}{3} \Rightarrow x = 60$

Similarity and Ratios

Step-by-step guide:

- ✓ Two or more figures are similar if the corresponding angles are equal, and the corresponding sides are in proportion.

Examples:

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Reza Nazari



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ALEKS Math in 30 Days Reza Nazari, 2021-04-28 A Fast Innovative Way to Put You on the Path to Your Best Score Want to ace the ALEKS Math test in less than 30 days This book could be exactly what you're looking for Allow a top test prep expert to hold your hand and guide you step by step to ALEKS Math Success The author knows exactly what students need to study and focus on so that they can rapidly improve their ALEKS Math test scores This book features Content that is 100% aligned with the 2021 ALEKS test A beginner friendly guide for all ALEKS Math topics The foundations of the ALEKS Math Test Complete coverage of all ALEKS Math concepts and topics that you will be tested on Updated questions that have appeared on the most recent ALEKS Math tests 2 full length practice tests featuring new question types with detailed answers Over 1 500 additional ALEKS Math practice questions grouped by topic allowing you to focus on your weaker areas This book will go over a handful of ALEKS Math topics such as Fractions Mixed numbers Integers Percent Equations Polynomials Exponents Radicals and more All topics are simply and concisely explained allowing you to develop your mathematics skills With this book a student can focus on rapidly improving their ALEKS Math test scores It doesn't matter if you don't have a tutor as this comprehensive ALEKS Math study guide was designed for self study in mind However this book can be used with a tutor or for classroom usage Effortlessly and confidently follow the step by step instructions in this study guide to ace the ALEKS Math in a short period of time

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falling behind those of their global peers Scholars and practitioners are beginning to utilize the new pedagogical opportunities offered by mobile learning to improve the successes of teachers and K 12 students across STEM subjects

Mobile Learning and STEM Case Studies in Practice is a comprehensive collection of case studies that explore mobile learning s support of STEM subjects and that utilize mobile technology to facilitate unique and effective K 12 teaching and learning experiences In addition to its focus on STEM achievement for researchers this volume is a resource for teachers working to implement mobile learning initiatives into their classrooms Mobile Learning and STEM also includes research that is applicable to classrooms in nations around the world where few students from underrepresented racial and socioeconomic backgrounds are entering into STEM jobs Concluding with a summary of its research and its implications to future scholarship and practice this book is a springboard for practitioners specialists higher education instructors and researchers who want to establish better practices in schools and raise student achievement in STEM subjects

New Developments in Pathways Towards Diversity and Inclusion in STEM: A United States Perspective Alexander Gates, Juan Gilbert, Chris Botanga, Kim Nguyen, Bonita London, 2022-10-17

The Louis Stokes Alliances for Minority Participation LSAMP program of the US National Science Foundation has been a primary force for raising the success and graduation of minority students in STEM for 30 years Increasing the number of underrepresented students earning baccalaureate degrees and entering graduate school in STEM is the goal of LSAMP This goal has been nearly achieved through the formation of alliances of degree granting institutions of higher learning varying from community colleges to major research institutions Currently there are 59 alliances including more than 400 institutions LSAMP is responsible for more than 650 000 bachelor s degrees earned by minority students in STEM The papers for this Research Topic should focus on the use of LSAMP activities programs and collaborations to develop pathways to success and graduation of STEM majors from minority groups that underrepresented in STEM These pathways can include any segment from pre college through graduate school Areas of special interest include mentoring research experiences transitions between levels and novel approaches for retention The studies should be research based and rigorous They can be pure research studies curriculum and design or literature reviews but they must be at a cutting edge level and be subject to detailed review and assessment

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Preparing Students for College and Careers Katie Larsen McClarty, Krista D. Mattern, Matthew N. Gaertner, 2017-08-22 Preparing Students for College and Careers addresses measurement and research issues related to college and career readiness Educational reform efforts across the United States have increasingly taken aim at measuring and improving postsecondary readiness These initiatives include developing new content standards redesigning assessments and performance levels legislating new developmental education policy for colleges and universities and highlighting gaps between graduates skills and employers needs In this comprehensive book scholarship from leading experts on each of these topics is collected for assessment professionals and for education researchers interested in this new area of focus Cross disciplinary chapters cover the current state of research best practices leading interventions and a variety of measurement concepts including construct definitions assessments performance levels score interpretations and test uses The Open Access version of this book available at <http://www.taylorfrancis.com> has been made available under a Creative Commons Attribution Non Commercial No Derivatives 4.0 license

Transformational Change Efforts: Student Engagement in Mathematics through an Institutional Network for Active Learning Wendy M. Smith, Matthew Voigt, April Ström, David C. Webb, W. Gary Martin, 2021-05-05 The purpose of this handbook is to help launch institutional transformations in mathematics departments to improve student success We report findings from the Student Engagement in Mathematics through an Institutional Network for Active Learning SEMINAL study SEMINAL s purpose is to help change agents those looking to or currently

attempting to enact change within mathematics departments and beyond trying to reform the instruction of their lower division mathematics courses in order to promote high achievement for all students SEMINAL specifically studies the change mechanisms that allow postsecondary institutions to incorporate and sustain active learning in Precalculus to Calculus 2 learning environments Out of the approximately 2.5 million students enrolled in collegiate mathematics courses each year over 90% are enrolled in Precalculus to Calculus 2 courses Forty four percent of mathematics departments think active learning mathematics strategies are important for Precalculus to Calculus 2 courses but only 15 percent state that they are very successful at implementing them Therefore insights into the following research question will help with institutional transformations What conditions strategies interventions and actions at the departmental and classroom levels contribute to the initiation implementation and institutional sustainability of active learning in the undergraduate calculus sequence Precalculus to Calculus 2 across varied institutions

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Artificial Intelligence in Education Ido Roll, Danielle McNamara, Sergey Sosnovsky, Rose Luckin, Vania Dimitrova, 2021-06-11 This two volume set LNAI 12748 and 12749 constitutes the refereed proceedings of the 22nd International Conference on Artificial Intelligence in Education AIED 2021 held in Utrecht The Netherlands in June 2021 The 40 full papers presented together with 76 short papers 2 panels papers 4 industry papers 4 doctoral consortium and 6 workshop papers were carefully reviewed and selected from 209 submissions The conference provides opportunities for the cross fertilization of approaches techniques and ideas from the many fields that comprise AIED including computer science cognitive and learning sciences education game design psychology sociology linguistics as well as many domain specific areas The conference was held virtually due to the COVID 19 pandemic

College Placement Test Math Practice Academic Media, 2007-05-17 Do you need help with math for your college placement test College Placement Test Math Practice contains 200 math practice problems and step by step solutions The book contains pre algebra algebra and college level math problems For each of the problems we provide an illustrated step by step mathematical solution which shows you the formulas and all of the mathematical steps needed to solve each problem Each problem also includes a narrative explanation which gives tips and exam strategies on how to solve similar problems on your college placement exam The book covers the following topics Pre algebra Computations with Integers Working with Fractions Multiplying Fractions Dividing Fractions Finding the Lowest Common Denominator Simplifying Fractions Mixed Numbers Percentages and Decimals Solving Word Problems Proportions Rates and Ratios Setting Up Equations Working with Averages Algebra Evaluating and Simplifying Numerical Expressions Polynomials The FOIL Method and Working with Polynomials Multiplying Polynomials Using the FOIL Method Dividing Polynomials Using Long Division Evaluating Polynomial Expressions Substituting Values in Polynomial Expressions Operations on Polynomials that Have More than Two Terms Factoring Factoring Advanced Problems Factoring to Find Possible Values of a Variable Fractions that Contain Fractions Fractions that Contain Radicals Fractions that Contain Rational Expressions Working with Quadratics Rational Expressions Adding and Subtracting Fractions that Contain Rational Expressions Multiplying Fractions that Contain Rational Expressions Dividing Fractions that Contain Rational Expressions Functions Imaginary and Complex Numbers Inequalities Laws of Exponents Adding and Subtracting Exponents Fractions as Exponents Positive and Negative Exponents Zero Exponent Logarithmic Functions Matrices Multiple Solutions Scientific Notation Sequences and Series Sigma Notation Solving by Elimination Solving for an Unknown Variable Special Operations Square Roots Cube Roots and Other Radicals Factoring Radicals Multiplication of Radicals Rationalizing Radicals Systems of Equations College level math Angles and the Pythagorean Theorem Circles and Arcs Squares and Rectangles Linear Equations and Graphs Midpoints Slope and Slope Intercept x and y intercepts Basic trigonometry

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