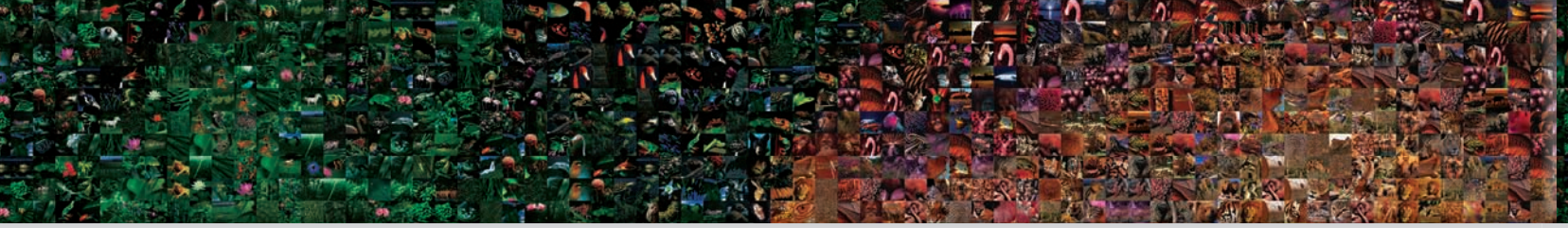


Get Better Results with Miller/O'Neill/Hyde

About the Cover

A mosaic is made up of pieces placed together to create a unified whole. Similarly, a beginning and intermediate algebra course provides an array of topics that together create a solid mathematical foundation for the developmental mathematics student.

The Miller/O'Neill/Hyde developmental mathematics series helps students see the whole picture through better pedagogy and supplemental materials. In this *Beginning and Intermediate Algebra* textbook, Julie Miller, Molly O'Neill, and Nancy Hyde focused their efforts on guiding students successfully through core topics, building mathematical proficiency, and getting better results!

"We originally embarked on this textbook project because we were seeing a lack of student success in courses beyond our developmental sequence. We wanted to build a better bridge between developmental algebra and higher level math courses. Our goal has been to develop pedagogical features to help students achieve better results in mathematics."

—Julie Miller, Molly O'Neill, Nancy Hyde

How Will Miller/O'Neill/Hyde Help Your Students *Get Better Results?*

Better Clarity, Quality, and Accuracy

Julie Miller, Molly O'Neill, and Nancy Hyde know what students need to be successful in mathematics. Better results come from clarity in their exposition, quality of step-by-step worked examples, and accuracy of their exercises sets; but it takes more than just great authors to build a textbook series to help students achieve success in mathematics. Our authors worked with a strong mathematical team of instructors from around the country to ensure that the clarity, quality, and accuracy you expect from the Miller/O'Neill/Hyde series was included in this edition.

"I think the level of rigor is perfect for my students. I have examined other textbooks that would have been placed at the extremes of a continuum. This book is, in the words of Goldilocks, 'just right.'"

—Angie McCombs, *Illinois State University*

Better Exercise Sets!

Comprehensive sets of exercises are available for every student level. Julie Miller, Molly O'Neill, and Nancy Hyde worked with a board of advisors from across the country to offer the appropriate depth and breadth of exercises for your students. **Problem Recognition Exercises** were created to improve student performance while testing.

Our practice exercise sets help students progress from skill development to conceptual understanding. Student tested and instructor approved, the Miller/O'Neill/Hyde exercise sets will help your student *get better results*.

- **Problem Recognition Exercises**
- **Skill Practice Exercises**
- **Study Skills Exercises**
- **Mixed Exercises**
- **Expanding Your Skills Exercises**

"Plenty of exercises covering all concepts. The mixed exercises help students to realize they have to be aware of the difference between types of problems. The quality of exercises range from basic to more difficult concepts with a good transition between the two, and they are relevant to the concepts taught in the section."

—Natalie Weaver, *Daytona State College*

Better Step-By-Step Pedagogy!

Intermediate Algebra provides enhanced step-by-step learning tools to help students *get better results.*

- **Worked Examples** provide an "easy-to-understand" approach, clearly guiding each student through a step-by-step approach to master each practice exercise for better comprehension.
- **TIPs** offer students extra cautious direction to help improve understanding through hints and further insight.
- **Avoiding Mistakes** boxes alert students to common errors and provide practical ways to avoid them. Both of these learning aids will help students get better results by showing how to work through a problem using a clearly defined step-by-step methodology that has been class tested and student approved.

"MOH gives a more detailed explanation of the material. MOH leaves no stone unturned."

—Joseph Kazimir, *East Los Angeles College*

"The textbook does a good job of warning students of possible errors and commonly made mistakes per section. Students seem to appreciate the fact that they have been warned and they are able to prevent the mistakes from happening."

—Alberto Guerra, *Saint Phillips College*

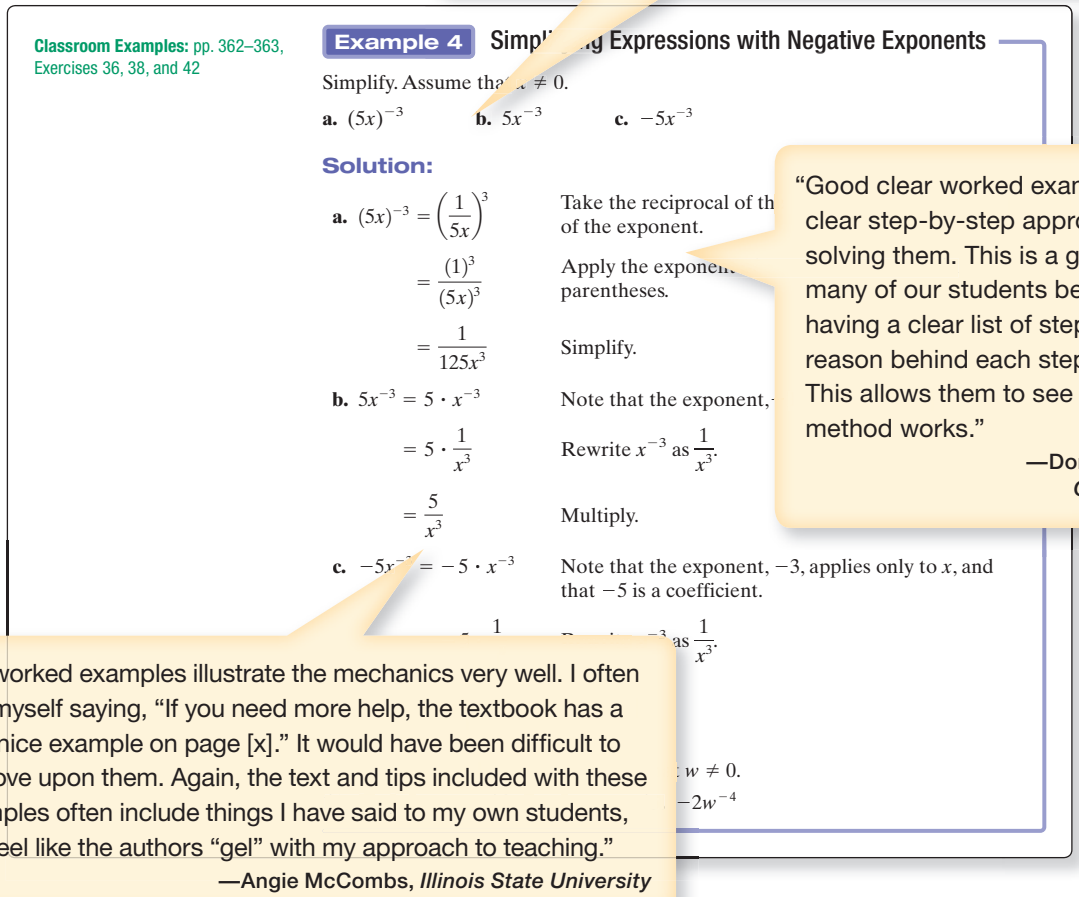
Formula for Student Success

Step-by-Step Worked Examples

- Do you get the feeling that there is a disconnection between your students' class work and homework?
- Do your students have trouble finding worked examples that match the practice exercises?
- Do you prefer that your students see examples in the textbook that match the ones you use in class?

Miller/O'Neill/Hyde's *Worked Examples* offer a clear, concise methodology that replicates the mathematical processes used in the authors' classroom lectures!

"The MOH text does an excellent job of providing numerous in-depth examples on the topic. They are easy to follow and flow well."
—Melanie Largin, *Georgia Highlands College*



Classroom Examples: pp. 362–363, Exercises 36, 38, and 42

Example 4 Simplifying Expressions with Negative Exponents

Simplify. Assume that $x \neq 0$.

a. $(5x)^{-3}$ **b.** $5x^{-3}$ **c.** $-5x^{-3}$

Solution:

a. $(5x)^{-3} = \left(\frac{1}{5x}\right)^3$ Take the reciprocal of th of the exponent.

$= \frac{(1)^3}{(5x)^3}$ Apply the exponen parentheses.

$= \frac{1}{125x^3}$ Simplify.

b. $5x^{-3} = 5 \cdot x^{-3}$ Note that the exponent,

$= 5 \cdot \frac{1}{x^3}$ Rewrite x^{-3} as $\frac{1}{x^3}$.

$= \frac{5}{x^3}$ Multiply.

c. $-5x^{-3} = -5 \cdot x^{-3}$ Note that the exponent, -3, applies only to x, and that -5 is a coefficient.

$= \frac{1}{}$ as $\frac{1}{x^3}$.

$w \neq 0$.

$-2w^{-4}$

"Good clear worked examples with a clear step-by-step approach to solving them. This is a good idea as many of our students benefit from having a clear list of steps and the reason behind each step being used. This allows them to see why the method works."
—Donald Robertson, *Olympic College*

"The worked examples illustrate the mechanics very well. I often find myself saying, "If you need more help, the textbook has a very nice example on page [x]." It would have been difficult to improve upon them. Again, the text and tips included with these examples often include things I have said to my own students, so I feel like the authors "gel" with my approach to teaching."
—Angie McCombs, *Illinois State University*

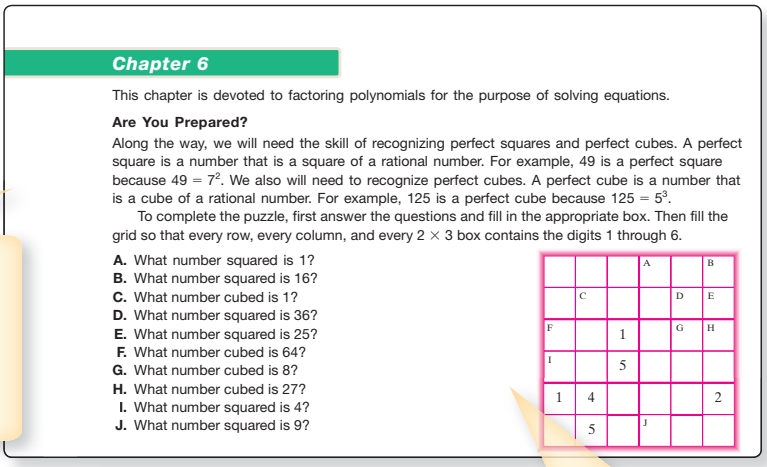
To ensure that the classroom experience also matches the examples in the text and the practice exercises, we have included references to even-numbered exercises to be used as Classroom Examples. These exercises are highlighted in the Practice Exercises at the end of each section.

Get Better Results

Better Learning Tools

Chapter Openers

Tired of students not being prepared? The Miller/O'Neill/Hyde *Chapter Openers* help students get better results through engaging *Puzzles and Games* that introduce the chapter concepts and ask "Are You Prepared?"



Chapter 6

This chapter is devoted to factoring polynomials for the purpose of solving equations.

Are You Prepared?

Along the way, we will need the skill of recognizing perfect squares and perfect cubes. A perfect square is a number that is a square of a rational number. For example, 49 is a perfect square because $49 = 7^2$. We also will need to recognize perfect cubes. A perfect cube is a number that is a cube of a rational number. For example, 125 is a perfect cube because $125 = 5^3$.

To complete the puzzle, first answer the questions and fill in the appropriate box. Then fill the grid so that every row, every column, and every 2×3 box contains the digits 1 through 6.

A. What number squared is 1?
B. What number squared is 16?
C. What number cubed is 1?
D. What number squared is 36?
E. What number squared is 25?
F. What number cubed is 64?
G. What number cubed is 8?
H. What number cubed is 27?
I. What number squared is 4?
J. What number squared is 9?

			A		B
	C			D	E
F		1		G	H
I		5			
1	4				2
	5		J		

"I liked how the MOH puzzle asked questions that made use of many of the concepts students will encounter in the chapter."

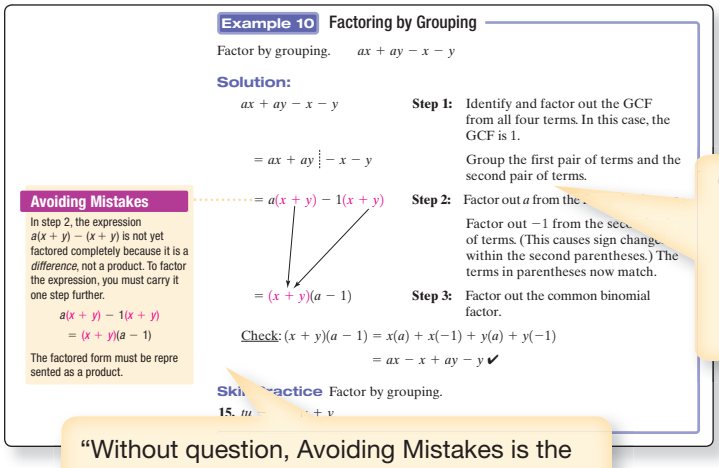
—Michelle Jackson, *Bowling Green Community College at WKU*

"The puzzle allows the students to provide input and achieve a small measure of success at the outset of the chapter. This should help to ease their anxiety and increase their self-efficacy."

—David Clutts, *Southeast Kentucky Community & Technical College*

TIP and Avoiding Mistakes Boxes

TIP and Avoiding Mistakes boxes have been created based on the authors' classroom experiences—they have also been integrated into the **Worked Examples.** These pedagogical tools will help students get better results by learning how to work through a problem using a clearly defined step-by-step methodology.



Example 10 Factoring by Grouping

Factor by grouping. $ax + ay - x - y$

Solution:

$ax + ay - x - y$ — **Step 1:** Identify and factor out the GCF from all four terms. In this case, the GCF is 1.

$= ax + ay \mid - x - y$ — Group the first pair of terms and the second pair of terms.

$= a(x + y) - 1(x + y)$ — **Step 2:** Factor out a from the ... Factor out -1 from the sec... of terms. (This causes sign change... within the second parentheses.) The terms in parentheses now match.

$= (x + y)(a - 1)$ — **Step 3:** Factor out the common binomial factor.

Check: $(x + y)(a - 1) = x(a) + x(-1) + y(a) + y(-1)$
$= ax - x + ay - y$ ✔

Ski... ractice Factor by grouping.

15. tu ... $+ v$

Avoiding Mistakes

In step 2, the expression $a(x + y) - (x + y)$ is not yet factored completely because it is a *difference*, not a product. To factor the expression, you must carry it one step further.

$a(x + y) - 1(x + y)$
$= (x + y)(a - 1)$

The factored form must be repre... sented as a product.

Avoiding Mistakes Boxes:

Avoiding Mistakes boxes are integrated throughout the textbook to alert students to common errors and how to avoid them.

"I really like the Avoiding Mistakes and the TIPS in the margins. I so often find when I'm reading them, that they are word-for-word what I've been saying for 15 years."

—Angie Russell, *Wenatchee Valley College*

"Without question, Avoiding Mistakes is the most helpful for me in the classroom."

—Joseph Howe, *St. Charles Community College*

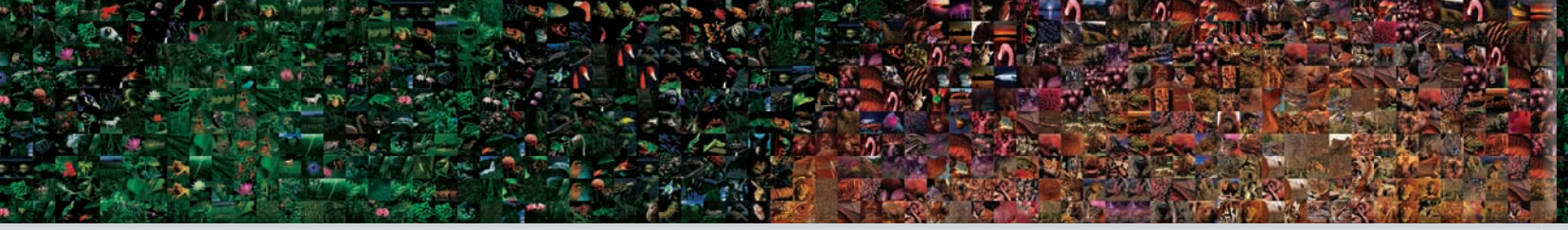
"These elements are excellent. I went from section to section looking for specific tips, and found every one of them in the text."

—Tim Chappell, *Longview Community College*

TIP Boxes

Teaching tips are usually revealed only in the classroom. Not anymore! TIP boxes offer students helpful hints and extra direction to help improve understanding and further insight.

TIP: Notice that the sign of each term is changed when finding the opposite of a polynomial.



Better Exercise Sets! Better Practice! Better Results!

- Do your students have trouble with problem solving?
- Do you want to help students overcome math anxiety?
- Do you want to help your students improve performance on math assessments?

Problem Recognition Exercises

Problem Recognition Exercises present a collection of problems that look similar to a student upon first glance, but are actually quite different in the manner of their individual solutions. Students sharpen critical thinking skills and better develop their "solution recall" to help them distinguish the method needed to solve an exercise—an essential skill in developmental mathematics.

Problem Recognition Exercises, tested in a developmental mathematics classroom, were created to improve student performance while testing.

"Provides a good opportunity to compare and contrast the different types of problems and the approaches to solving them."

—Elsie Newman, *Owens Community College*

Problem Recognition Exercises

Comparing Rational Equations and Rational Expressions

Often adding or subtracting rational expressions is confused with solving rational equations. When adding rational expressions, we combine the terms to simplify the expression. When solving an equation, we clear the fractions and find numerical solutions, if possible. Both processes begin with finding the LCD, but the LCD is used differently in each process. Compare these two examples.

Example 1:

Add. $\frac{4}{x} + \frac{x}{3}$ (The LCD is $3x$.)

$= \frac{3}{3} \cdot \left(\frac{4}{x}\right) + \left(\frac{x}{3}\right) \cdot \frac{x}{x}$

$= \frac{12}{3x} + \frac{x^2}{3x}$

$= \frac{12 + x^2}{3x}$ The answer is a rational expression.

Example 2:

Solve. $\frac{4}{x} + \frac{x}{3} = -\frac{8}{3}$ (The LCD is $3x$.)

$\frac{3x}{1}\left(\frac{4}{x} + \frac{x}{3}\right) = \frac{3x}{1}\left(-\frac{8}{3}\right)$

$12 + x^2 = -8x$

$x^2 + 8x + 12 = 0$

$(x + 2)(x + 6) = 0$

$x + 2 = 0$ or $x + 6 = 0$

$x = -2$ or $x = -6$ The answer is the set $\{-2, -6\}$.

For Exercises 1–20, solve the equation or simplify the expression by combining the terms.

1. $\frac{y}{2y + 4} - \frac{2}{y^2 + 2y}$

2. $\frac{1}{x + 2} + 2 = \frac{x + 11}{x + 2}$

3. $\frac{5t}{2} - \frac{t - 2}{3} = 5$

4. $3 - \frac{2}{a - 5}$

5. $\frac{7}{6p^2} + \frac{2}{9p} + \frac{1}{3p^2}$

6. $\frac{3b}{b + 1} - \frac{2b}{b - 1}$

9. $\frac{1}{x - 6}$ $\frac{3}{\quad - 6x} = \frac{4}{x}$

"The PREs are a great addition to the text. These exercises are great: they require critical thinking, address appropriate content, and are at a fitting level of difficulty."

—Richard Hobbs, *Mission College*

"Love these!!!!"

—Vicki McMillian, *Ocean County College*

Get Better Results

Student Centered Applications!

The Miller/O'Neill/Hyde Board of Advisors partnered with our authors to bring the *best applications* from every region in the country! These applications include real data and topics that are more relevant and interesting to today's student.

47. The amount of pollution entering the atmosphere over a given time varies directly as the number of people living in an area. If 80,000 people cause 56,800 tons of pollutants, how many tons enter the atmosphere in a city with a population of 500,000?

Group Activities!

Each chapter concludes with a Group Activity to promote classroom discussion and collaboration—helping students not only to solve problems but to explain their solutions for better mathematical mastery. Group Activities are great for instructors and adjuncts—bringing a more interactive approach to teaching mathematics! All required materials, activity time, and suggested group sizes are provided in the end-of-chapter material. Activities include Computing Body Mass Index, Computing Monthly Mortgage Payments, Deciphering a Coded Message and more!

Group Activity

Computing Monthly Mortgage Payments

Materials: A calculator

Estimated Time: 15–20 minutes

Group Size: 3

When a person borrows money to buy a house, the bank usually requires a down payment of between 0% and 20% of the cost of the house. The bank then issues a loan for the remaining balance on the house. The loan to buy a house is called a *mortgage*. Monthly payments are made to pay off the mortgage over a period of years.

A formula to calculate the monthly payment, P, for a loan is given by the complex fraction:

$$P = \frac{\frac{Ar}{12}}{1 - \frac{1}{\left(1 + \frac{r}{12}\right)^{12t}}}$$

where
P is the monthly payment
A is the original amount of the mortgage
r is the annual interest rate written as a decimal
t is the term of the loan in years

Suppose a person wants to buy a $200,000 house. The bank requires a down payment of 20%, and the loan is issued for 30 years at 7.5% interest for 30 years.

1. Find the amount of the down payment. _____

2. Find the amount of the mortgage. _____

3. Find the monthly payment (to the nearest cent). _____

...estion 3 by the total ...text of the problem.

...oan for the house? _____

6. What was the total amount paid to the bank (include the down payment). _____

"This is another useful feature of this textbook and I like the idea of giving our students the opportunity to work together and to communicate with each other in a "mathematical way". The group activity topics are an excellent feature.

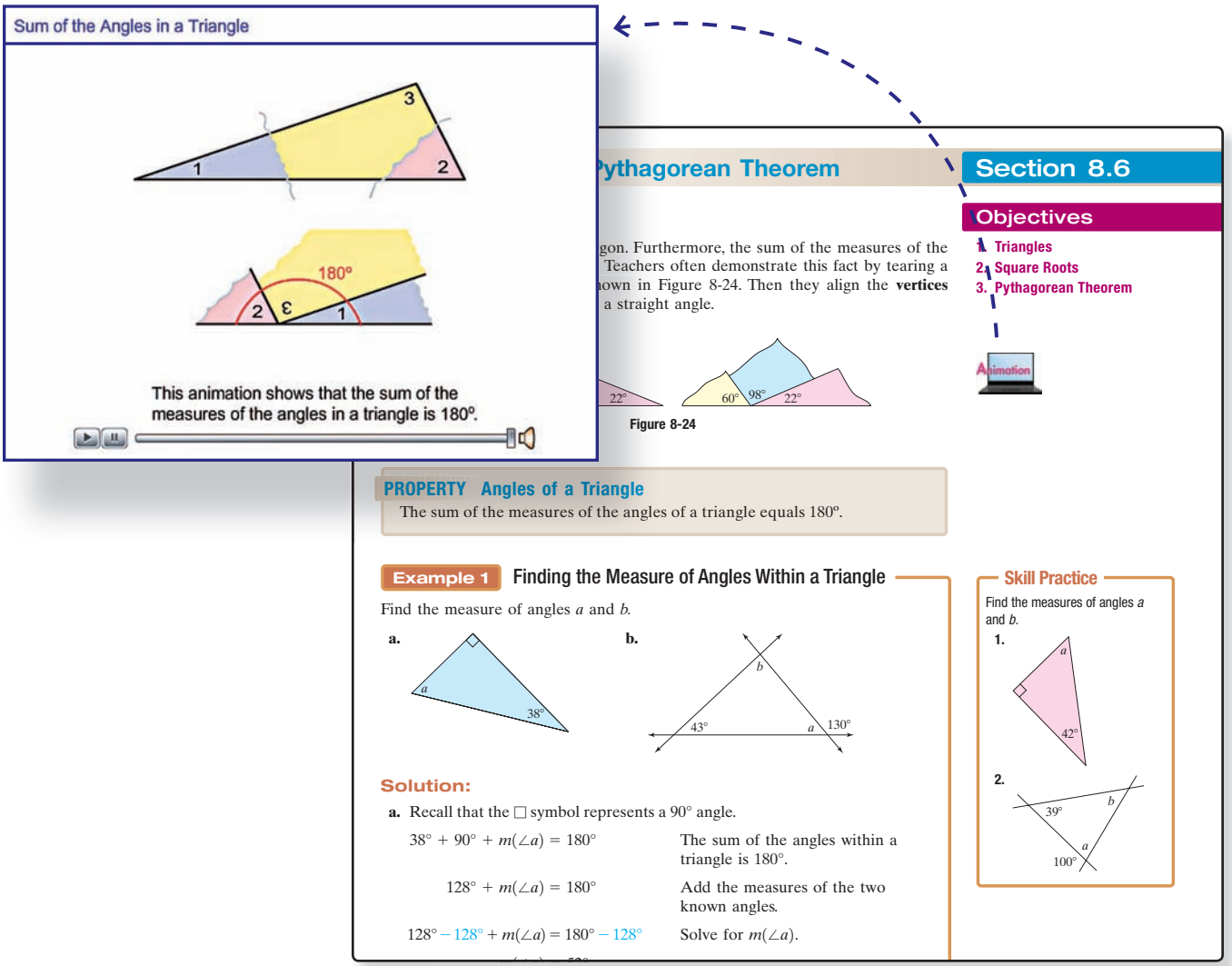
—Donald Robertson, *Olympic College*

"A great idea, and beneficial when you have, as our school, multiple part-timers teaching sections. Brings an aspect of useful uniformity to the different sections."

—Don York, *Danville Area Community College*

Dynamic Math Animations

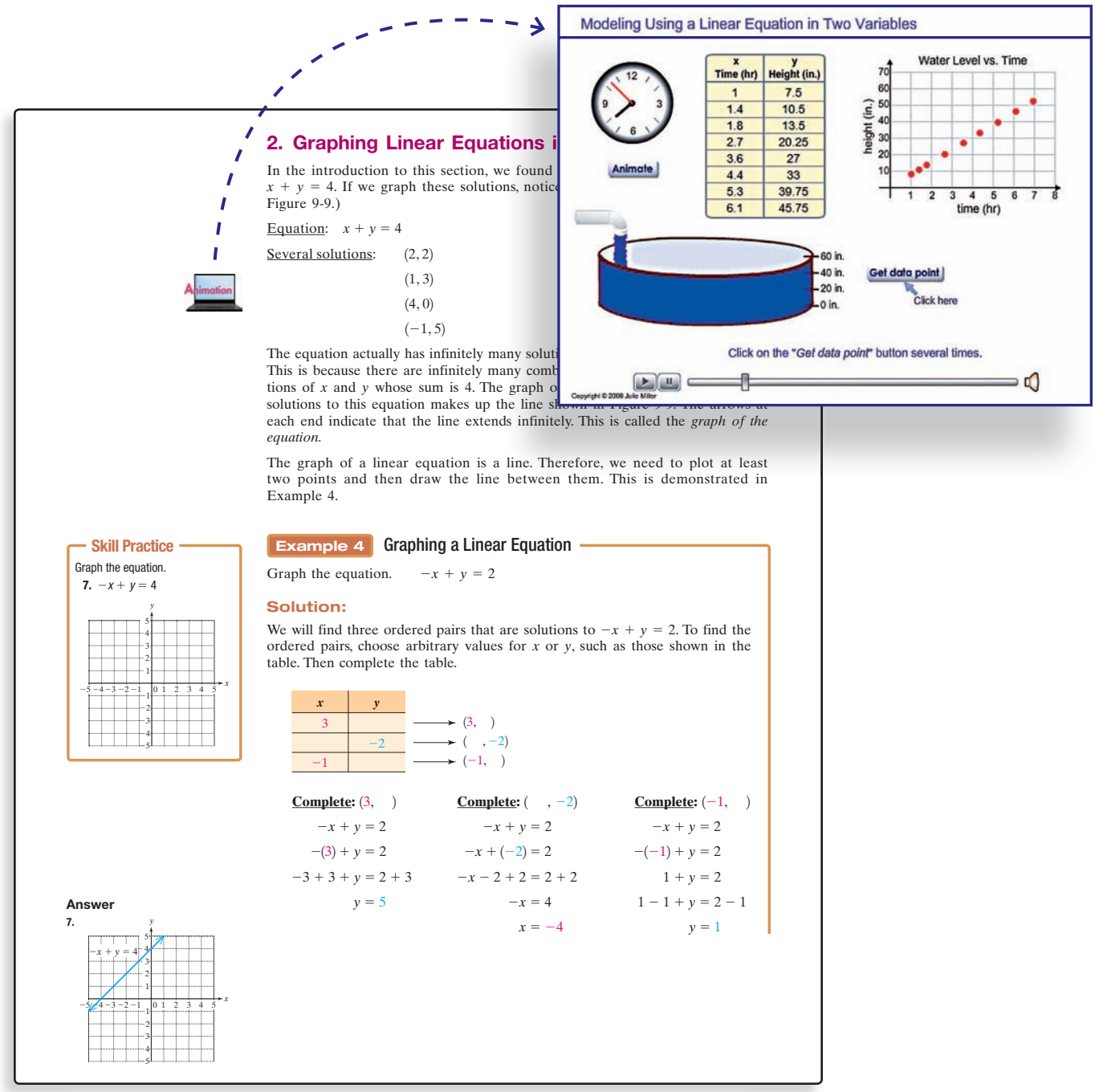
The Miller/O'Neill/Hyde author team has developed a series of Flash animations to illustrate difficult concepts where static images and text fall short. The animations leverage the use of on-screen movement and morphing shapes to enhance conceptual learning. For example, one animation "cuts" a triangle into three pieces and rotates the pieces to show that the sum of the angular measures equals 180° (below).



Through their classroom experience, the authors recognize that such media assets are great teaching tools for the classroom and excellent for online learning. The Miller/O'Neill/Hyde animations are interactive and quite diverse in their use. Some provide a virtual laboratory for which an application is simulated and where students can collect data points for analysis and modeling. Others provide interactive question-and-answer sessions to test conceptual learning. For word problem applications, the animations ask students to estimate answers and practice "number sense."

Get Better Results

The animations were created by the authors based on over 75 years of combined teaching experience! To facilitate the use of the animations, the authors have placed icons in the text to indicate where animations are available. Students and instructors can access these assets online in MathZone or ALEKS.



Get Better Results

Experience Student Success!

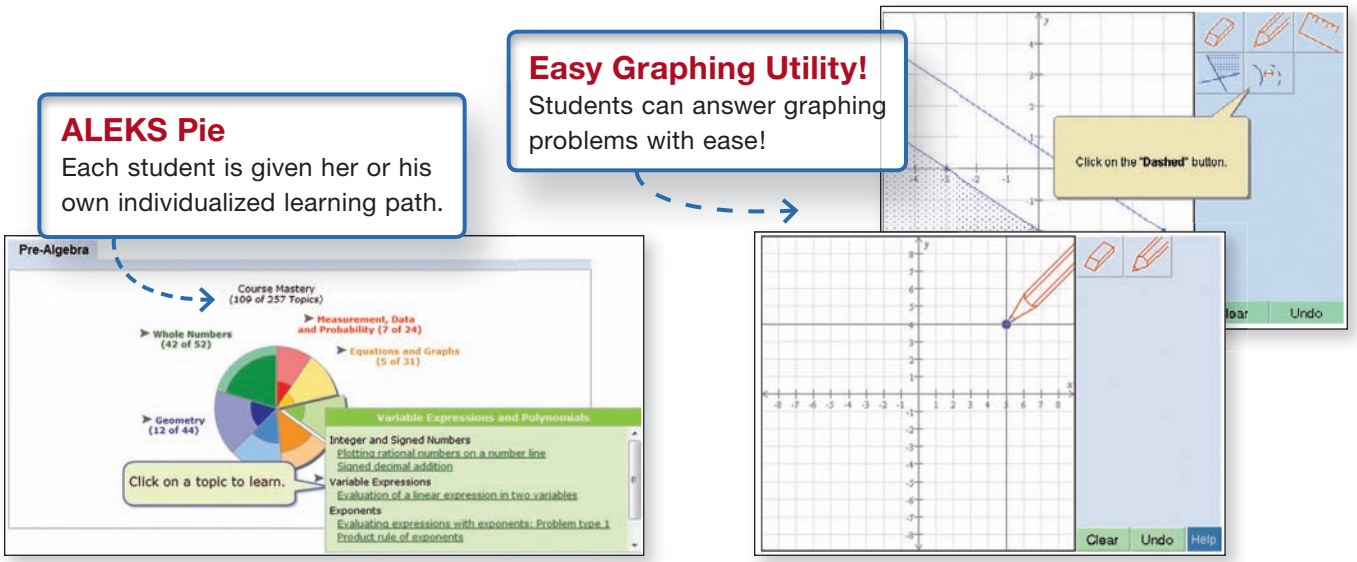
ALEKS® ALEKS is a unique online math tool that uses adaptive questioning and artificial intelligence to correctly place, prepare, and remediate students . . . all in one product! Institutional case studies have shown that **ALEKS has improved pass rates by over 20% versus traditional online homework, and by over 30% compared to using a text alone.**

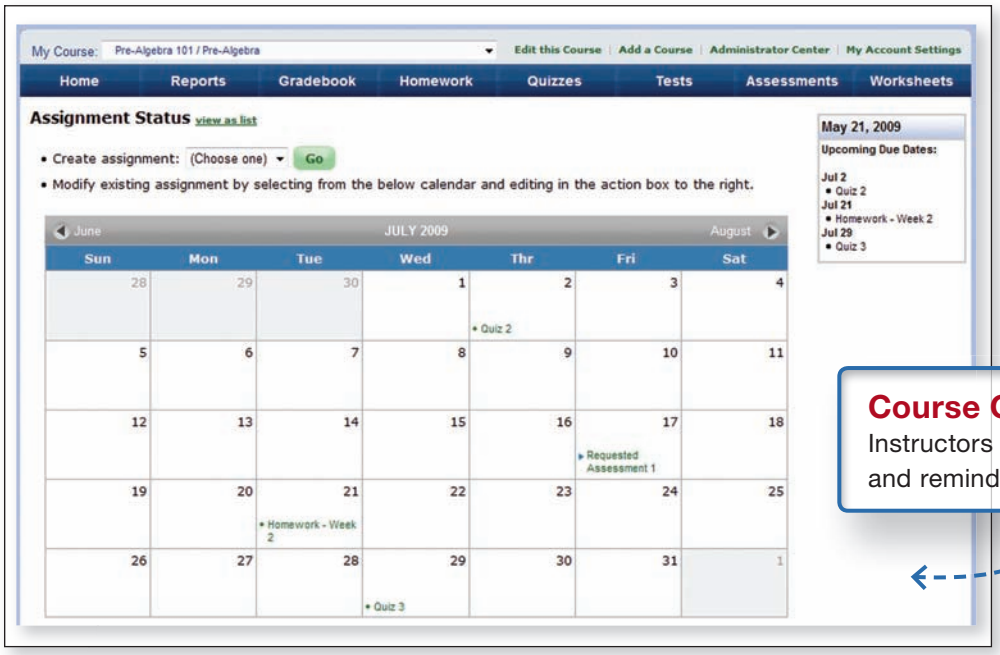
By offering each student an individualized learning path, ALEKS directs students to work on the math topics that they are ready to learn. Also, to help students keep pace in their course, instructors can correlate ALEKS to their textbook or syllabus in seconds.

To learn more about how ALEKS can be used to boost student performance, please visit **www.aleks.com/highered/math** or contact your McGraw-Hill representative.

ALEKS Pie
Each student is given her or his own individualized learning path.

Easy Graphing Utility!
Students can answer graphing problems with ease!



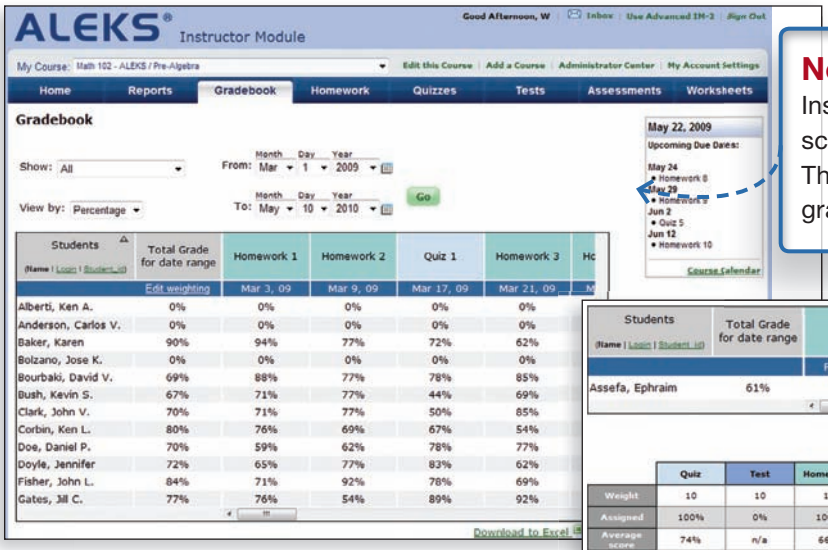


Course Calendar
Instructors can schedule assignments and reminders for students.

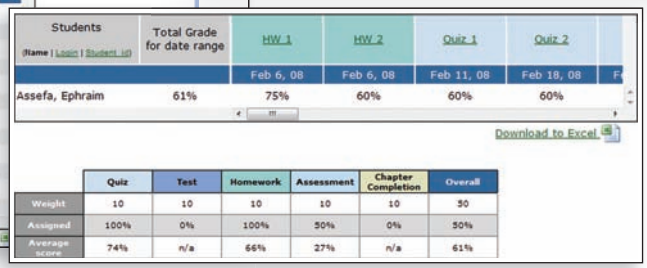
New ALEKS Instructor Module

Enhanced Functionality and Streamlined Interface Help to Save Instructor Time

ALEKS® The new ALEKS Instructor Module features enhanced functionality and a streamlined interface based on research with ALEKS instructors and homework management instructors. Paired with powerful assignment-driven features, textbook integration, and extensive content flexibility, the new ALEKS Instructor Module simplifies administrative tasks and makes ALEKS more powerful than ever.



Gradebook view for all students



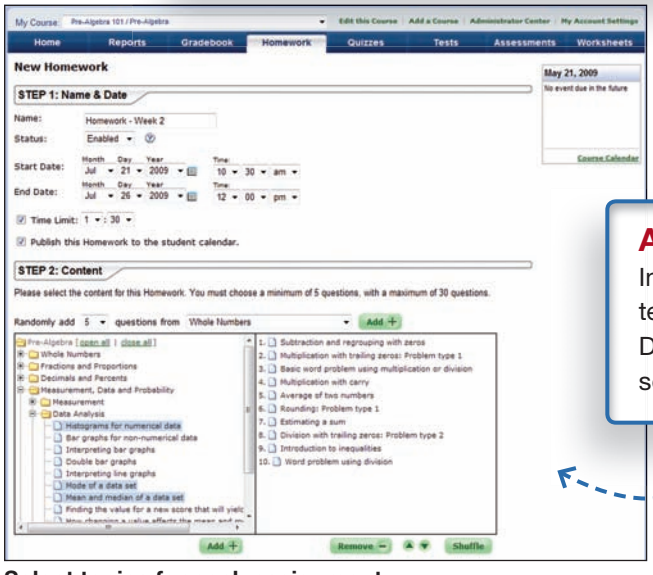
Gradebook view for an individual student

New Gradebook!

Instructors can seamlessly track student scores on automatically graded assignments. They can also easily adjust the weighting and grading scale of each assignment.

Track Student Progress Through Detailed Reporting

Instructors can track student progress through automated reports and robust reporting features.



Select topics for each assignment

Automatically Graded Assignments

Instructors can easily assign homework, quizzes, tests, and assessments to all or select students. Deadline extensions can also be created for select students.

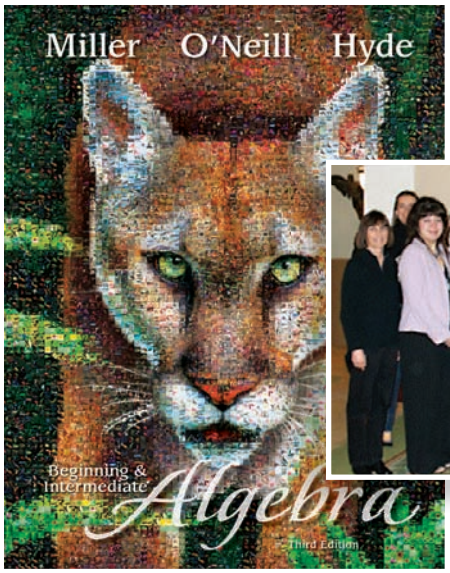
Learn more about ALEKS by visiting **www.aleks.com/highered/math** or contact your McGraw-Hill representative.

360° Development Process

McGraw-Hill's 360° Development Process is an ongoing, never-ending, market-oriented approach to building accurate and innovative print and digital products. It is dedicated to continual large-scale and incremental improvement that is driven by multiple customer-feedback loops and checkpoints. This is initiated during the early planning stages of our new products, and intensifies during the development and production stages—then begins again upon publication, in anticipation of the next edition.

A key principle in the development of any mathematics text is its ability to adapt to teaching specifications in a universal way. The only way to do so is by contacting those universal voices—and learning from their suggestions. We are confident that our book has the most current content the industry has to offer, thus pushing our desire for accuracy to the highest standard possible. In order to accomplish this, we have moved through an arduous road to production. Extensive and open-minded advice is critical in the production of a superior text.

Here is a brief overview of the initiatives included in the *Beginning and Intermediate Algebra*, 360° Development Process:



Board of Advisors

A hand-picked group of trusted teachers active in the *Beginning and Intermediate Algebra* course served as chief advisors and consultants to the author and editorial team with regards to manuscript development. The Board of Advisors reviewed parts of the manuscript; served as a sounding board for pedagogical, media, and design concerns; consulted on organizational changes; and attended a focus group to confirm the manuscript's readiness for publication.

Would you like to inquire about becoming a BOA member?
If so, email the editor, David Millage at david_millage@mcgraw-hill.com.

Prealgebra

Vanetta Grier-Felix, *Seminole State College of Florida*
Teresa Hasenauer, *Indian River State College*
Shelbra Jones, *Wake Technical Community College*
Nicole Lloyd, *Lansing Community College*
Kausha Miller, *Bluegrass Community and Technical College*
Linda Schott, *Ozarks Technical Community College*
Renee Sundrud, *Harrisburg Area Community College*

Beginning Algebra

Anabel Darini, *Suffolk County Community College*
Sabine Eggleston, *Edison State College*
Brandie Faulkner, *Tallahassee Community College*
Kelli Hammer, *Broward College–South*
Joseph Howe, *St. Charles Community College*
Laura Iossi, *Broward College–Central*
DiDi Quesada, *Miami Dade College*

Intermediate Algebra

Connie Buller, *Metropolitan Community College*
Nancy Carpenter, *Johnson County Community College*
Pauline Chow, *Harrisburg Area Community College*
Donna Gerken, *Miami Dade College*
Gayle Krzemien, *Pikes Peak Community College*
Judy McBride, *Indiana University–Purdue University at Indianapolis*
Patty Parkison, *Ball State University*

Beginning and Intermediate Algebra

Annette Burden, *Youngstown State University*
Lenore Desilets, *DeAnza College*
Gloria Guerra, *St. Philip's College*
Julie Turnbow, *Collin County Community College*
Suzanne Williams, *Central Piedmont Community College*
Janet Wyatt, *Metropolitan Community College–Longview*

Get Better Results

Better Development!

Question: How do you build a better developmental mathematics textbook series?

Answer: Employ a developmental mathematics instructor from the classroom to become a McGraw-Hill editor!

Emilie Berglund joined the developmental mathematics team at McGraw-Hill, bringing her extensive classroom experience to the Miller/O'Neill/Hyde textbook series. A former developmental mathematics instructor at Utah Valley State College, Ms. Berglund has won numerous teaching awards and has served as the beginning algebra course coordinator for the department. Ms. Berglund's experience teaching developmental mathematics students from the Miller/O'Neill/Hyde translates into more well-developed pedagogy throughout the textbook series and can be seen in everything from the updated Worked Examples to the Exercise Sets.

Listening to You . . .

This textbook has been reviewed by over 300 teachers across the country. Our textbook is a commitment to your students, providing a clear explanation, a concise writing style, step-by-step learning tools, and the best exercises and applications in developmental mathematics. **How do we know? You told us so!**

Teachers *Just Like You* are saying great things about the Miller/O'Neill/Hyde developmental mathematics series:

"As we matched MOH against many other Intermediate Algebra books, the reading level and writing style, combined with the appropriate use of color and good "looks" of the pages, made this book rise to the top."

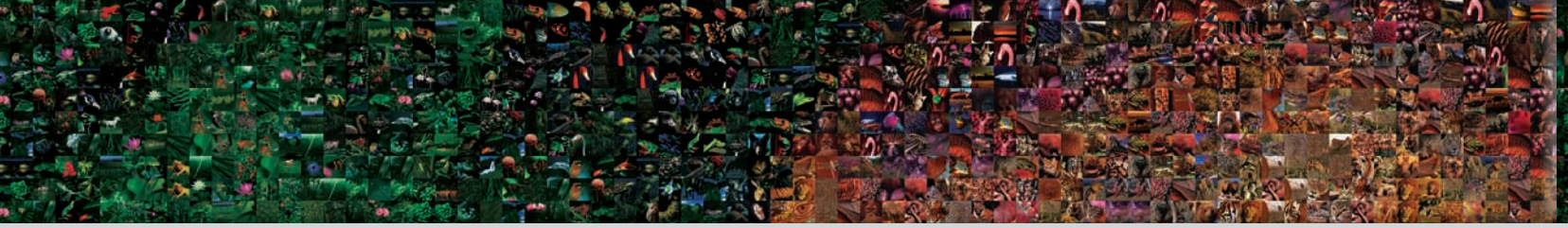
—Connie Buller, *Metropolitan Community College*

"I think the level of rigor is perfect for my students. I have examined other textbooks that would have been placed at the extremes of a continuum. This book is, in the words of Goldilocks, "just right." "

—Angie McCombs, *Illinois State University*

"I believe that MOH has separated and grouped the content into sections that will make it easier for students to digest."

—Gayle Krzemien, *Pikes Peak Community College*



Acknowledgments and Reviewers

The development of this textbook series would never have been possible without the creative ideas and feedback offered by many reviewers. We are especially thankful to the following instructors for their careful review of the manuscript.

Symposia

Every year McGraw-Hill conducts general mathematics symposia that are attended by instructors from across the country. These events provide opportunities for editors from McGraw-Hill to gather information about the needs and challenges of instructors teaching these courses. This information helped to create the book plan for *Beginning and Intermediate Algebra.* A forum is also offered for the attendees to exchange ideas and experiences with colleagues they otherwise might not have met.

Advisors Symposium—Barton Creek, Texas

Connie Buller, *Metropolitan Community College*
Pauline Chow, *Harrisburg Area Community College*
Anabel Darini, *Suffolk County Community College*
Maria DeLucia, *Middlesex County College*
Sabine Eggleston, *Edison State College*
Brandie Faulkner, *Tallahassee Community College*
Vanetta Grier-Felix, *Seminole State College of Florida*
Gloria Guerra, *St. Philip's College*
Joseph Howe, *St. Charles Community College*
Laura Iossi, *Broward College–Central*
Gayle Krzemien, *Pikes Peak Community College*
Nicole Lloyd, *Lansing Community College*
Judy McBride, *Indiana University–Purdue University at Indianapolis*
Kausha Miller, *Bluegrass Community and Technical College*
Patty Parkison, *Ball State University*
Linda Schott, *Ozarks Technical and Community College*
Renee Sundrud, *Harrisburg Area Community College*
Janet Wyatt, *Metropolitan Community College–Longview*

Napa Valley Symposium

Antonio Alfonso, *Miami Dade College*
Lynn Beckett-Lemus, *El Camino College*
Kristin Chatas, *Washtenaw Community College*
Maria DeLucia, *Middlesex County College*
Nancy Forrest, *Grand Rapids Community College*
Michael Gibson, *John Tyler Community College*
Linda Horner, *Columbia State College*
Matthew Hudock, *St. Philip's College*
Judith Langer, *Westchester Community College*
Kathryn Lavelle, *Westchester Community College*
Scott McDaniel, *Middle Tennessee State University*
Adelaida Quesada, *Miami Dade College*
Susan Shulman, *Middlesex County College*
Stephen Toner, *Victor Valley College*
Chariklia Vassiliadis, *Middlesex County College*
Melanie Walker, *Bergen Community College*

Myrtle Beach Symposium

Patty Bonesteel, *Wayne State University*
Zhixiong Chen, *New Jersey City University*
Latonya Ellis, *Bishop State Community College*
Bonnie Filer, *Tubaugh University of Akron*
Catherine Gong, *Citrus College*
Marcia Lambert, *Pitt Community College*
Katrina Nichols, *Delta College*
Karen Stein, *The University of Akron*
Walter Wang, *Baruch College*

La Jolla Symposium

Darryl Allen, *Solano Community College*
Yvonne Aucoin, *Tidewater Community College–Norfolk*
Sylvia Carr, *Missouri State University*
Elizabeth Chu, *Suffolk County Community College*
Susanna Crawford, *Solano Community College*
Carolyn Facer, *Fullerton College*
Terran Felter, *California State University–Bakersfield*
Elaine Fitt, *Bucks County Community College*
John Jerome, *Suffolk County Community College*
Sandra Jovicic, *The University of Akron*
Carolyn Robinson, *Mt. San Antonio College*
Carolyn Shand-Hawkins, *Missouri State University*

Class Tests

Multiple class tests provided the editorial team with an understanding of how content and the design of a textbook impact a student's homework and study habits in the general mathematics course area.

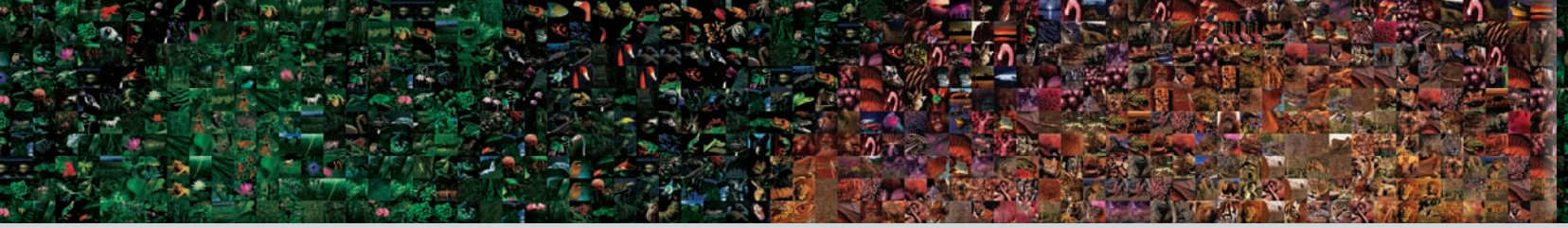
Special "*thank you*" to our Manuscript Class-Testers

Manuscript Review Panels

Over 200 teachers and academics from across the country reviewed the various drafts of the manuscript to give feedback on content, design, pedagogy, and organization. This feedback was summarized by the book team and used to guide the direction of the text.

Reviewers of Miller/O'Neill/Hyde Developmental Mathematics Series

Max Aeschbacher, *Utah Valley University*
Ali Ahmad, *Dona Ana Community College*
James Alsobrook, *Southern Union State Community College*
Lisa Angelo, *Bucks County Community College*
Peter Arvanites, *Rockland Community College*
Holly Ashton, *Pikes Peak Community College*
Tony Ayers, *Collin County Community College–Plano*
Tom Baker, *South Plains College*
Lynn Beckett-Lemus, *El Camino College*
Chris Bendixen, *Lake Michigan College*
Mary Benson, *Pensacola Junior College*
Vickie Berry, *Northeastern Oklahoma A&M College*
Abraham Biggs, *Broward College–South*
Erika Blanken, *Daytona State College*
Andrea Blum, *Suffolk County Community College*
Steven Boettcher, *Estrella Mountain Community College*
Gabriele Booth, *Daytona State College*
Charles Bower, *Saint Philip's College*
Cherie Bowers, *Santa Ana College*
Lee Brendel, *Southwestern Illinois College*
Ellen Brook, *Cuyahoga Community College*
Debra Bryant, *Tennessee Tech University*
Robert Buchanan, *Pensacola Junior College*
Gail Butler, *Erie Community College–North*
Susan Caldiero, *Consumnes River College*
Kimberly Caldwell, *Volunteer State Community College*
Jose Castillo, *Broward College–South*
Chris Chappa, *Tyler Junior College*
Timothy Chappell, *Penn Valley Community College*
Dianna Cichocki, *Erie Community College–South*
William Clarke, *Pikes Peak Community College*
David Clutts, *Southeast Kentucky Community & Technical College*
De Cook, *Okaloosa-Walton College*
Susan Costa, *Broward College–Central*
Mark Crawford, *Waubonsee Community College*
Patrick Cross, *University of Oklahoma*
Imad Dakka, *Oakland Community College–Royal Oak*
Shirley Davis, *South Plains College*
Nelson De La Rosa, *Miami Dade College*
Mary Dennison, *University of Nebraska at Omaha*
Donna Densmore , *Bossier Parish Community College*
David DeSario, *Georgetown College*
Michael Divinia, *San Jose City College*
Dennis Donohue, *College of Southern Nevada*
Jay Driver, *South Plains College*
Laura Dyer, *Southwestern Illinois College*
Sabine Eggleston, *Edison State College*
Mike Everett, *Santa Ana College*



Reviewers of the Miller/O'Neill/Hyde Developmental Mathematics Series

Elizabeth Farber, *Bucks County Community College*
Nerissa Felder, *Polk Community College*
Rhoderick Fleming, *Wake Technical Community College*
Carol Ford, *Copiah-Lincoln Community College–Wesson*
Marion Foster, *Houston Community College–Southeast*
Kevin Fox, *Shasta College*
Matt Gardner, *North Hennepin Community College*
Sunshine Gibbons, *Southeast Missouri State University*
Antonnette Gibbs, *Broward College–North*
Barry Gibson, *Daytona State College*
Jeremiah Gilbert, *San Bernardino Valley College*
Sharon Giles, *Grossmont College*
Elizabeth Gore, *Georgia Highlands College*
Brent Griffin, *Georgia Highlands College*
Albert Guerra, *Saint Philip's College*
Lucy Gurrola, *Dona Ana Community College*
Elizabeth Hamman, *Cypress College*
Mark Harbison, *Sacramento City College*
Pamela Harden, *Tennessee Tech University*
Sherri Hardin, *East Tennessee State University*
Cynthia Harris, *Triton College*
Christie Heinrich, *Broward College–North*
Linda Henderson, *Ocean County College*
Rodger Hergert, *Rock Valley College*
Max Hibbs, *Blinn College*
Terry Hobbs, *Maple Woods Community College*
Richard Hobbs, *Mission College*
Michelle Hollis, *Bowling Green Community College at WKU*
Kathy Holster, *South Plains College*
Mark Hopkins, *Oakland Community College–Auburn Hills*
Robert Houston, *Rose State College*
Steven Howard, *Rose State College*
Joe Howe, *St. Charles Community College*
Glenn Jablonski, *Triton College*
Michelle Jackson, *Bowling Green Community College at WKU*
Pamela Jackson, *Oakland Community College–Orchard Ridge*
Thomas Jay, *Houston Community College–Northwest*
Michael Jones, *Suffolk County Community College*
Diane Joyner, *Wayne Community College*
Maryann Justinger, *Erie Community College–South*
Cheryl Kane, *University of Nebraska–Lincoln*
Susan Kautz, *Lone Star College–CyFair*
Joseph Kazimir, *East Los Angeles College*
Eliane Keane, *Miami Dade College*
Mandy Keiner, *Iowa Western Community College*
Maria Kelly, *Reedley College*
Brianna Killian, *Daytona State College*
Harriet Kiser, *Georgia Highlands College*
Daniel Kleinfelter, *College of the Desert*
Linda Kuroski, *Erie Community College*
Catherine LaBerta, *Erie Community College–North*
Debra Landre, *San Joaquin Delta College*
Cynthia Landrigan, *Erie Community College–South*
Melanie Largin, *Georgia Highlands College*
Betty Larson, *South Dakota State University*
Kathryn Lavelle, *Westchester Community College*
Karen Lee, *Oakland Community College–Southfield*
Paul Lee, *St. Philip's College*
Richard Leedy, *Polk Community College*
Julie Letellier, *University of Wisconsin–Whitewater*
Nancy Leveille, *University of Houston–Downtown*
Janna Liberant, *Rockland Community College*
Joyce Lindstrom, *St. Charles Community College*
John Linnen, *Ferris State University*
Mark Littrell, *Rio Hondo College*
Linda Lohman, *Jefferson Community & Technical College*
Tristan Londre, *Metropolitan Community College–Blue River*
Wanda Long, *St. Charles Community College*
Yixia Lu, *South Suburban College*
Shawna Mahan, *Pikes Peak Community College*
Vincent Manatsa, *Georgia Highlands College*
Dorothy Marshall, *Edison State College*
Melvin Mays, *Metropolitan Community College*
William Mays, *Salem Community College*
Angela McCombs, *Illinois State University*
Paul Mccombs, *Rock Valley College*
Robert McCullough, *Ferris State University*
Raymond McDaniel, *Southern Illinois University Edwardsville*
Jamie McGill, *East Tennessee State University*
Vicki McMillian, *Ocean County College*
Lynette Meslinsky, *Erie Community College–City*
Gabrielle Michaelis, *Cumberland County College*
John Mitchell, *Clark College*
Chris Mizell, *Okaloosa-Walton College*
Daniel Munton, *Santa Rosa Junior College*
Revathi Narasimhan, *Kean Community College*
Michael Nasab, *Long Beach City College*
Elsie Newman, *Owens Community College*
Charles Odion, *Houston Community College*
Jean Olsen, *Pikes Peak Community College*
Jason Pallett, *Metropolitan Community College–Longview*
Alan Papen, *Ozarks Technical Community College*

Reviewers of the Miller/O'Neill/Hyde Developmental Mathematics Series

Victor Pareja, *Daytona State College*
Linda Parrish, *Brevard College*
Mari Peddycoart, *Lone Star College–Kingwood*
Joanne Peeples, *El Paso Community College*
Matthew Pitassi, *Rio Hondo College*
Froozen Pourboghrat-Afiat, *College of Southern Nevada*
Jay Priester, *Horry-Georgetown Technical College*
Gail Queen, *Shelton State Community College*
Adelaida Quesada, *Miami Dade College*
Jill Rafael, *Sierra College*
Janice Rech, *University of Nebraska at Omaha*
George Reed, *Angelina College*
Pamelyn Reed, *Lone Star College–CyFair*
Andrea Reese, *Daytona State College*
Donna Riedel, *Jefferson Community & Technical College*
Donald Robertson, *Olympic College*
Cosmin Roman, *The Ohio State University*
Tracy Romesser, *Erie Community College*
Suzanne Rosenberger, *Harrisburg Area Community College*
Connie Rost, *South Louisiana Community College*
Richard Rupp, *Del Mar College*
Angela Russell, *Wenatchee Valley College*
Kristina Sampson, *Lone Star College–CyFair*
Jenell Sargent, *Tennessee Tech University*
Vicki Schell, *Pensacola Junior College*
Linda Schott, *Ozarks Technical Community College*
Rebecca Schuering, *Metropolitan Community College–Blue River*
Christyn Senese, *Triton College*
Alicia Serfaty De Markus, *Miami Dade College*
Angie Shreckhise, *Ozarks Technical Community College*
Abdallah Shuaibi, *Harry S Truman College*
Julia Simms, *Southern Illinois University Edwardsville*
Azar Sioshansi, *San Jose City College*
Leonora Smook, *Suffolk County Community College*
Carol St. Denis, *Okaloosa-Walton College*
Andrew Stephan, *St. Charles Community College*
Sean Stewart, *Owens Community College*
Arcola Sullivan, *Copiah-Lincoln Community College*
Nader Taha, *Kent State University*
Michael Tiano, *Suffolk County Community College*
Roy Tucker, *Palo Alto College*
Clairie Vassiliadis, *Middlesex County College*
Rieken Venema, *University of Alaska Anchorage*
Sherry Wallin, *Sierra College*
Kathleen Wanstreet, *Southern Illinois University Edwardsville*
Natalie Weaver, *Daytona State College*
Greg Wheaton, *Kishwaukee College*
Deborah Wolfson, *Suffolk County Community College*
Rick Woodmansee, *Sacramento City College*
Kevin Yokoyama, *College of the Redwoods*
Donald York, *Danville Area Community College*
Vivian Zabrocki, *Montana State University–Billings*
Ruth Zasada, *Owens Community College*
Loris Zucca, *Kingwood College*
Diane Zych, *Erie Community College–North*

Special thanks go to Brandie Faulkner for preparing the *Instructor's Solutions Manual* and the *Student's Solution Manual* and to Carrie Green, Rebecca Hubiak, and Hal Whipple for their work ensuring accuracy. Many thanks to Cindy Reed for her work in the video series, and to Kelly Jackson for advising us on the Instructor Notes.

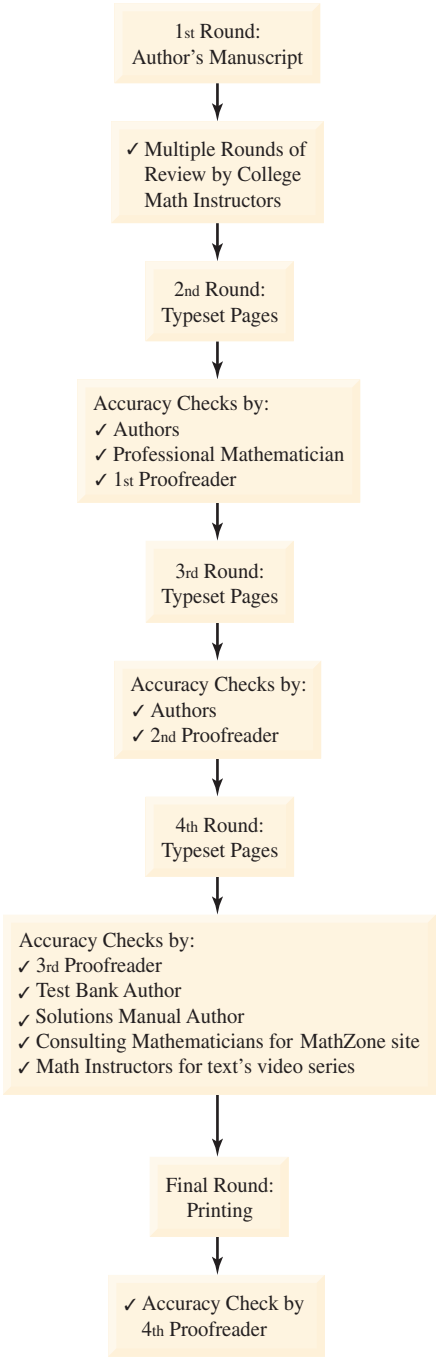
Finally, we are forever grateful to the many people behind the scenes at McGraw-Hill without whom we would still be on page 1. To our developmental editor (and math instructor extraordinaire), Emilie Berglund, thanks for your day-to-day support and understanding of the world of developmental mathematics. To David Millage, our executive editor and overall team captain, thanks for keeping the train on the track. Where did you find enough hours in the day? To Torie Anderson and Sabina Navsariwala, we greatly appreciate your countless hours of support and creative ideas promoting all of our efforts. To our director of development and champion, Kris Tibbetts, thanks for being there in our time of need. To Pat Steele, where would we be without your watchful eye over our manuscript? To our publisher, Stewart Mattson, we're grateful for your experience and energizing new ideas. Thanks for believing in us. To Jeff Huettman and Amber Bettcher, we give our greatest appreciation for the exciting technology so critical to student success, and to Peggy Selle, thanks for keeping watch over the whole team as the project came together.

Most importantly, we give special thanks to all the students and instructors who use *Beginning and Intermediate Algebra* in their classes.

Get Better Results

A COMMITMENT TO ACCURACY

You have a right to expect an accurate textbook, and McGraw-Hill invests considerable time and effort to make sure that we deliver one. Listed below are the many steps we take to make sure this happens.



Our Accuracy Verification Process

First Round

Step 1: Numerous **college math instructors** review the manuscript and report on any errors that they may find. Then the authors make these corrections in their final manuscript.

Second Round

Step 2: Once the manuscript has been typeset, the **authors** check their manuscript against the first page proofs to ensure that all illustrations, graphs, examples, exercises, solutions, and answers have been correctly laid out on the pages, and that all notation is correctly used.

Step 3: An outside, **professional mathematician** works through every example and exercise in the page proofs to verify the accuracy of the answers.

Step 4: A **proofreader** adds a triple layer of accuracy assurance in the first pages by hunting for errors, then a second, corrected round of page proofs is produced.

Third Round

Step 5: The **author team** reviews the second round of page proofs for two reasons: (1) to make certain that any previous corrections were properly made, and (2) to look for any errors they might have missed on the first round.

Step 6: A **second proofreader** is added to the project to examine the new round of page proofs to double check the author team's work and to lend a fresh, critical eye to the book before the third round of paging.

Fourth Round

Step 7: A **third proofreader** inspects the third round of page proofs to verify that all previous corrections have been properly made and that there are no new or remaining errors.

Step 8: Meanwhile, in partnership with **independent mathematicians,** the text accuracy is verified from a variety of fresh perspectives:

- The **test bank authors** check for consistency and accuracy as they prepare the computerized test item file.
- The **solutions manual author** works every exercise and verifies his/her answers, reporting any errors to the publisher.
- A **consulting group of mathematicians,** who write material for the text's MathZone site, notifies the publisher of any errors they encounter in the page proofs.
- A video production company employing **expert math instructors** for the text's videos will alert the publisher of any errors it might find in the page proofs.

Final Round

Step 9: The **project manager,** who has overseen the book from the beginning, performs a **fourth proofread** of the textbook during the printing process, providing a final accuracy review.

➥ What results is a mathematics textbook that is as accurate and error-free as is humanly possible, and our authors and publishing staff are confident that our many layers of quality assurance have produced textbooks that are the leaders in the industry for their integrity and correctness.