

# What's New for Fall 2010

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# General Changes

- Added new product specific icons that utilize the company logo.
- Improved Edit Course ID Window to assist user in entering the correct course ID:
  - Replaced “Course ID” with “Hawkes Course ID” in all places to help distinguish from a school’s course id.
  - Added a link “Find my Hawkes Course ID” that takes the user to our webpage where they can look up their course ID by school.
  - Added custom check and message for each of the following common issues: i) user is not connected to the internet, ii) user has entered a license number, iii) user has entered an access code.
  - Added a Help link that opens the pdf HLS Internet Access for additional guidance.
  - Added on screen message indicating Hawkes Course ID will not contain numbers or spaces
  - Added a check box option for “Always Work Offline”
- Statistics ONLY: Added “Never Ask Again” check box option to warning that client Table of Contents does not match server Table of Contents.
- Hot words windows are now movable.
- Added title bar with close button to how word windows.
- “Product Tour” renamed “Video Tour” to be clearer.
- Added keyboard short cuts:
  - ) enters () in text box (This is in addition to existing keyboard short cut of (.)
  - ] enters [] in text box (This is in addition to existing keyboard shortcut of [.]
  - } enters {} in text box (This is in addition to existing keyboard short cut of {.)
  - Ctrl+( enters (] in text box
  - Ctrl+) enters ]) in text box
  - Ctrl+[ enters [] in text box
  - Ctrl+] enters ] in text box
- Online grade book link compatible with browsers other than Internet Explorer.
- Statistics ONLY – If change Table of contents, Table of Contents name updates in courseware title and title bar of Instructor menu without having to exit and reenter software.
- Introductory and Intermediate Algebra student courseware link and Online Grade link no longer touch at resolution 1600 x 900 on Instructor menu.
- Statistics Only – Added warning if client table of contents and server table of contents do not match when click on Lesson Editor and WebTest links on Instructor menu.

# Basic College Mathematics

## *Enhancements*

- The support of comma entry was increased in Chapters 2 - Appendix II, where applicable.
- Comma entry and evaluation in four digit numbers was updated to support commas in all chapters, where applicable.
- Evaluation of answers involving rounded decimal numbers was improved in all chapters where applicable.

## *New Questions*

- More than 320 questions were added to the product to replace 108 existing questions in order to allow for better variety within the lesson and consistency within the problem case.

# Prealgebra

## *Enhancements*

- The instruct screens for all lessons in Chapters 1-10 are new and/or improved. The design, layout, and content have been updated and improved to correspond with the textbook. Instructions and explanations have been improved for better understanding and clarification. Illustrations have been added or updated to help visually. Many new examples have been added throughout all the lessons in Chapters 1-10. Multiple step examples contain side notes that explain each step. Some definitions have been reworded and improved for easier understanding.
- The support of comma entry was increased in Chapters 2 – A where applicable.
- Comma entry and evaluation in four digit numbers was updated to support commas in all chapters where applicable.
- Evaluation of answers involving rounded decimal numbers was improved in all chapters where applicable.
- Removed a handful of problems in Lesson 1.1 and 2.5 since they appeared in other lessons.

## *New Questions*

- Audio has been reread for almost all lessons.

# Introductory Algebra

## Enhancements

- Over 50 new question types have been added. The new question types provide greater correlation with the exercises in the textbook.
- Additionally, some existing question types were split into separate questions in order to allow instructors greater control of the content that their students will see.
- The Fall 2010 software also includes updates to instruct screens. Several new interactive (“Now It’s Your Turn”) instruct screens have been included to give the students targeted practice on the objectives of the lesson.

## New Questions

- 4.2: Graphing Linear Equations by Plotting Points**  
Added 2 question types with user-directed graphing.
- 4.3: The Slope-Intercept Form:  $y = mx + b$**   
Added 2 question types for horizontal and vertical lines: 1 type is always vertical and 1 type is always horizontal.
- 4.5: Introduction to Functions and Function Notation**  
Added 8 question types for identifying whether a given relation is a function as well as the domain and range.
- 6.3b: Evaluating Polynomials**  
Added 3 question types for evaluating a single-variable polynomial at a given value.
- 6.6a: The FOIL Method**  
Added an application problem related to geometry.
- 7.1c: Factoring Expressions by Grouping**  
Added 2 question types of medium difficulty for factoring by grouping.
- 7.3b: Factoring Trinomials by Trial and Error**  
Added 1 question type that is not factorable. Separated 6 existing question types to give instructors greater determination of what content their students will see.
- 7.5: Solving Quadratic Equations by Factoring**  
Separated 3 existing question types to give instructors greater determination of what content

their students will see.

Added 1 question type for solving a simple equation by factoring.

- 8.3: Addition and Subtraction of Rational Expressions**

Added 1 question type for addition with rational expressions where the answer can be factored and reduced after the operation is performed.

Separated 2 existing question types for addition and subtraction with rational expressions into 2 distinct question types each: 1 question type for denominators with perfect square trinomials and 1 question type for denominators that are not perfect square trinomials.

- 9.1: Evaluating Radicals**

Added 2 question types for evaluating radicals: 1 type is a perfect square integer with a negative sign outside of the radical and 1 type is a simple perfect square radicand involving a variable.

- 9.4a: Rationalizing Denominators**

Added 1 question type that is a simple problem for rationalizing the denominator.

- 10.2: Quadratic Equations: Completing the Square**

Separated an existing question type for solving a quadratic equation by completing the square into 2 distinct question types: 1 type for integer answers and 1 type for non-integer answers.

- A.1: Special Factorizations – Cubes**

Added 2 question types of medium difficulty for recognizing special factorizations.

# Intermediate Algebra

## Enhancements

- This year, the software has been updated to correspond with the release of the 6th edition of our Intermediate Algebra textbook.
- Instruct screens have been improved in over 50 lessons, and three new lessons have been added to the software.
- Over 170 new question types have been added. The new question types provide greater correlation with the exercises in the textbook.
- Additionally, some existing question types were split into separate questions in order to allow instructors greater control of the content that their students will see.

## New Lessons

- **1.1: Prime Numbers, Exponents, and LCM**  
This lesson is an excellent review of some of the key skills learned in introductory algebra.
- **8.6: Common Logarithms and Natural Logarithms**  
Based on numerous instructor requests, logarithms prior to this section are shown with a base and common and natural logarithms are now grouped together.
- **A.1: Review of Fractions**  
This lesson reviews multiplication, division, addition, and subtraction with fractions for students needing extra reinforcement.

## New Questions

- **1.3d: Multiplication and Division with Real Numbers**  
Added 3 question types for multiplication with integers.  
Added 2 question types for multiplication with an integer and 1.  
Added 2 question types for multiplication with 0.  
Added 2 question types for division with integers.  
Added 2 question types for division with 0.  
Added 2 question types for multiplication with decimals.  
Added 2 question types for division with decimals.

- **2.1b: Graphing Linear Equations by Plotting Points**  
Added 2 question types with user-directed graphing.  
Added 1 question type for matching a given equation to the correct graph among 4 choices.
- **2.2: Graphing Linear Equations in Slope-Intercept Form**  
Added 2 question types for horizontal and vertical lines: 1 type is always vertical and 1 type is always horizontal.
- **2.3a: Graphing Linear Equations in Point-Slope Form**  
Added 1 question type where the student determines if the lines given in a pair of equations are parallel, perpendicular, or neither.
- **2.3b: Finding the Equation of a Line**  
Added 2 application problems related to linear equations.  
Added 5 question types for finding the equations of lines that are parallel or perpendicular to a given line.
- **2.4: Introduction to Functions and Function Notation**  
Added 2 question types for identifying ordered pairs on a graph, determining their domain and range, and identifying whether the relation is a function.  
Added 4 question types for evaluating a function at a given value.
- **3.3: Solving Systems of Linear Equations with Three Variables**  
Added 2 question types that are word problems with three variables.
- **3.4: Matrices and Gaussian Elimination**  
Added 1 question type for forming the augmented matrix for a system of 2 equations.
- **4.2b: Adding and Subtracting Polynomials**  
Added 1 question type for evaluating a function at a given value.
- **4.3b: The FOIL Method**  
Added an application problem related to geometry.

## *New Questions (continued)*

- **4.5b: Factoring by Grouping**  
Added 2 question types of medium difficulty for factoring by grouping.
- **4.6a: Factoring Trinomials by Trial and Error**  
Added 1 question type that is not factorable.  
Separated 6 existing question types to give instructors greater determination of what content their students will see.
- **4.7b: Special Factorizations – Cubes**  
Added 2 question types of medium difficulty for recognizing special factorizations.
- **4.8: Solving Equations by Factoring**  
Separated 3 existing question types to give instructors greater determination of what content their students will see.  
Added 1 question type for solving a simple equation by factoring.  
Added 3 question types for writing a polynomial equation with given roots.
- **5.2: Addition and Subtraction with Rational Expressions**  
Added 1 question type for addition with rational expressions where the answer can be factored and reduced after the operation is performed.  
Separated 2 existing question types for addition and subtraction with rational expressions into 2 distinct question types each: 1 question type for denominators with perfect square trinomials and 1 question type for denominators that are not perfect square trinomials.
- **6.1a: Evaluating Radicals**  
Added 2 question types for evaluating radicals: 1 type is a perfect square integer with a negative sign outside of the radical and 1 type is a simple perfect square radicand involving a variable.
- **6.3c: Rationalizing Denominators**  
Added 7 question types of varying difficulty for rationalizing the denominator.
- **6.5: Functions with Radicals**  
Separated an existing question type into even roots and odd roots.
- **6.7: Multiplication and Division with Complex Numbers**  
Separated an existing question type into 7 distinct question types to give instructors greater determination of what content their students will see.
- **7.1b: Quadratic Equations: Completing the Square**  
Separated an existing question type for solving a quadratic equation by completing the square into 2 distinct question types: 1 type for integer answers and 1 type for non-integer answers.
- **9.3: Distance Formula and Circles**  
Added 2 question types for finding the equation of a circle at the origin: 1 type has an integer radius and 1 type has a non-integer radius.

# Introductory & Intermediate Algebra

## Enhancements

- This year, over 75 new question types have been added. The new question types provide greater correlation with the exercises in the textbook.
- Additionally, some existing question types were split into separate questions in order to allow instructors greater control of the content that their students will see.

## New Questions

- **4.2: Graphing Linear Equations by Plotting Points**  
Added 2 question types with user-directed graphing.  
Added 1 question type for matching a given equation to the correct graph among 4 choices.
- **4.3: Graphing Linear Equations in Slope-Intercept Form**  
Added 2 question types for horizontal and vertical lines: 1 type is always vertical and 1 type is always horizontal.
- **4.4a: Finding the Equation of a Line**  
Added 2 application problems related to linear equations.  
Added 5 question types for finding the equations of lines that are parallel or perpendicular to a given line.
- **4.4b: Graphing Linear Equations in Point-Slope Form**  
Added 1 question type where the student determines if the lines given in a pair of equations are parallel, perpendicular, or neither.
- **4.5: Introduction to Functions and Function Notation**  
Added 2 question types for identifying ordered pairs on a graph, determining their domain and range, and identifying whether the relation is a function.
- **5.5b: The FOIL Method**  
Added an application problem related to geometry.
- **6.1c: Factoring Expressions by Grouping**  
Added 2 question types of medium difficulty for factoring by grouping.
- **6.2c: Factoring Trinomials by Trial and Error**  
Added 1 question type that is not factorable.  
Separated 6 existing question types to give instructors greater determination of what content their students will see.
- **6.4: Solving Quadratic Equations by Factoring**  
Separated 3 existing question types to give instructors greater determination of what content their students will see.  
Added 1 question type for solving a simple equation by factoring.  
Added 3 question types for writing a polynomial equation with given roots.
- **7.2: Addition and Subtraction of Rational Expressions**  
Added 1 question type for addition with rational expressions where the answer can be factored and reduced after the operation is performed.  
Separated 2 existing question types for addition and subtraction with rational expressions into 2 distinct question types each: 1 question type for denominators with perfect square trinomials and 1 question type for denominators that are not perfect square trinomials.
- **10.1a: Evaluating Radicals**  
Added 2 question types for evaluating radicals: 1 type is a perfect square integer with a negative sign outside of the radical and 1 type is a simple perfect square radicand involving a variable.
- **10.5: Functions with Radicals**  
Separated an existing question type into even roots and odd roots.
- **10.6: Multiplication and Division of Complex Numbers**  
Separated an existing question type into 7 distinct question types to give instructors greater determination of what content their students will see.

## *New Questions (continued)*

- **11.1b: Quadratic Equations: Completing the Square**  
Separated an existing question type for solving a quadratic equation by completing the square into 2 distinct question types: 1 type for integer answers and 1 type for non-integer answers.
- **12.5: The Distance Formula, Midpoint Formula, and Circles**  
Added 2 question types for finding the equation of a circle at the origin: 1 type has an integer radius and 1 type has a non-integer radius.
- **14.3: Solving Systems of Linear Equations with Three Variables**  
Added 2 question types that are word problems with three variables.
- **14.4: Matrices and Gaussian Elimination**  
Added 1 question type for forming the augmented matrix for a system of 2 equations.

## Enhancements

- This year, over 175 new question types have been added, 39 of which incorporate user-directed graphing, including a completely new graphing mechanism.
- There is now more variation in question presentation (sign changes, dynamic word problems, format changes) and more application problems (20 new application problems in 6 lessons).
- Also, more question types have been split into separate questions to allow instructors greater control of the content and the level of difficulty that their students will see.

## New Questions

- **1.3a: Properties of Exponents**  
Added new question type similar to existing question type 18, but of easy level of difficulty.
- **1.4a: Properties of Radicals**  
Added new question type similar to existing question type 18, but using only square roots.
- **1.4b: Rational Number Exponents**  
Added "Not Possible" option to simplification questions.  
Added 2 new question types similar to existing question type 1, but using only square roots.  
Split existing question type 5 into two question types; one in which the result is an integer exponent, one in which the result is a fractional exponent.  
Added 2 new question types: converting rational exponent notation to radical notation and vice versa.  
Added new question type similar to existing question type 8, except that the result has a fractional exponent.
- **1.5: Polynomials and Factoring**  
Added new question type involving a difference of squares with a medium level of difficulty.

- **1.6: The Complex Number System**  
Added new question type like existing question type 8, except with no  $i^2$  term.
- **2.1a: Linear Equations in One Variable**  
Added new question type like existing question type 4 (in which the answer is always 0), where the answer is never 0.
- **2.1b: Applications of Linear Equations in One Variable**  
Added 3 new question types: application problems involving tax, tip, and shipping charges.
- **2.2: Linear Inequalities in One Variable**  
Added 3 new question types; minor variations on different linear inequalities.  
Added 5 new question types with variation in inequality symbols.  
Added 2 new word problem question types involving frequent flyer miles and fruit harvesting.
- **2.3: Quadratic Equations in One Variable**  
Added variation in signs to several question types.
- **3.2: Linear Equations in Two Variables**  
Added new question type similar to existing question type 16, except that lines through the origin have a slope other than  $\pm 1$ .  
Added 2 new question types of graphing linear equations with a low level of difficulty.
- **3.4: Parallel and Perpendicular Lines**  
Added 8 new question types similar to existing question types 9-12 and 17-20, having only a single step asking if two given lines are parallel, perpendicular, or neither.
- **4.1: Relations and Functions**  
Added several new question types for evaluating functions, some where the possibility of having to evaluate  $f(x+a) - f(x)$  has been removed, some where this is the only possible iteration.  
Added new question types similar to existing question types 7-10, with a third part added asking the student to find the domain of the function.

## *New Questions (continued)*

- **4.2a: Linear and Quadratic Functions**  
Added alternate solution Hotword to several question types for finding the vertex of a parabola. Duplicated several question types from chapter 3 concerning lines, rewritten in function terms. Split existing question types 8 and 9 to separate integer answers and fractional answers.
- **4.2b: Max/Min Applications of Quadratic Functions**  
Added 5 new question types: application problems involving revenue, cost, projectile motion, and fencing.
- **4.3a: Other Common Functions**  
Added 4 new question types: evaluation of piecewise-defined functions with linear and quadratic portions.  
Added 6 new questions types: new graphing mechanism allowing for graphing of functions to the tenths place.
- **4.4: Transformations of Functions**  
Added 8 new question types: lower level of difficulty transformation questions (involve only a single transformation).
- **4.6: Inverses of Functions**  
Split existing question type 10 into two question types: one in which the  $x$  has an exponent of 1, one with exponents greater than 1.  
Added new question type: user asked to find the inverse of an even function.
- **5.1: Introduction to Polynomial Equations and Graphs**  
Redesigned existing question types 1-4 to be balanced between “yes” and “no” answers.  
Redesigned existing question types 9-11 to improve incorrect graphs (distracters).  
Added 2 new question types like existing question types 9-11, but using a fourth degree polynomial.  
Added 4 new question types like existing question types 12-14 with new inequality forms.  
Added 4 new question types asking students to determine end behavior of polynomials.
- **5.3: Locating Real Zeros of Polynomials**  
Redesigned existing question types 18-21 to correctly apply the Intermediate Value Theorem.
- **5.4: The Fundamental Theorem of Algebra**  
Added 3 new question types with smaller values to generate more manageable answers.
- **6.1b: Rational Inequalities**  
Added 4 new question types with different inequality symbols, similar to existing question types 8-13.
- **7.2: Applications of Exponential Functions**  
Added 2 new question types involving interest with low level of difficulty.
- **7.4: Properties and Applications of Logarithms**  
Added 2 new question types involving condensing logarithmic expressions of low difficulty level.
- **7.5: Exponential and Logarithmic Equations**  
Added 4 new question types involving half-life and doubling/tripling times.  
Added new question type involving continuously compounded interest.
- **8.1: Solving Systems by Substitution and Elimination**  
Added new question type: application problem for a  $2 \times 2$  system of equations.
- **8.4: The Algebra of Matrices**  
Added several new question types with different matrix sizes for matrix algebra questions.
- **8.6: Linear Programming**  
Added 4 new question types: linear programming, including 3 application questions involving managing an orchard, investing money, and supplying a resort as well as a question involving an unbounded feasible region.
- **9.3: Geometric Sequences and Series**  
Split existing question type 12 into three question types based on level of difficulty and whether the series converges or diverges.

## Enhancements

- This year, over 175 new question types have been added, 39 of which incorporate user-directed graphing, including a completely new graphing mechanism.
- There is now more variation in question presentation (sign changes, dynamic word problems, format changes) and more application problems (20 new application problems in 6 lessons).
- Also, more question types have been split into separate questions to allow instructors greater control of the content and the level of difficulty that their students will see.

## New Questions

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Added new question type similar to existing question type 18, but of easy level of difficulty.
- **1.2c: Properties of Radicals**  
Added new question type similar to existing question type 18, but using only square roots.
- **1.2d: Rational Number Exponents**  
Added "Not Possible" option to simplification questions.  
Added 2 new question types similar to existing question type 1, but using only square roots.  
Split existing question type 5 into two question types; one in which the result is an integer exponent, one in which the result is a fractional exponent.  
Added 2 new question types: converting rational exponent notation to radical notation and vice versa.  
Added new question type similar to existing question type 8, except that the result has a fractional exponent.
- **1.3: Polynomials and Factoring**  
Added new question type involving a difference of squares with a medium level of difficulty.
- **1.4: The Complex Number System**  
Added new question type like existing question type 8, except with no  $i^2$  term.
- **1.5a: Linear Equations in One Variable**  
Added new question type like existing question type 4 (in which the answer is always 0), where the answer is never 0.
- **1.5b: Applications of Linear Equations in One Variable**  
Added 3 new question types: application problems involving tax, tip, and shipping charges.
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Added 3 new question types; minor variations on different linear inequalities.  
Added 5 new question types with variation in inequality symbols.  
Added 2 new word problem question types involving frequent flyer miles and fruit harvesting.
- **1.7a: Quadratic Equations in One Variable**  
Added variation in signs to several question types.
- **2.2: Linear Equations in Two Variables**  
Added new question type similar to existing question type 16, except that lines through the origin have a slope other than  $\pm 1$ .  
Added 2 new question types of graphing linear equations with a low level of difficulty.
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Added 8 new question types similar to existing question types 9-12 and 17-20, having only a single step asking if two given lines are parallel, perpendicular, or neither.
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Added new question types similar to existing question types 7-10, with a third part added asking the student to find the domain of the function.

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Added 5 new question types: application problems involving revenue, cost, projectile motion, and fencing.
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Split existing question type 10 into two question types: one in which the  $x$  has an exponent of 1, one with exponents greater than 1.  
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Added 4 new question types asking students to determine end behavior of polynomials.
- **4.3: Locating Real Zeros of Polynomials**  
Redesigned existing question types 18-21 to correctly apply the Intermediate Value Theorem.
- **4.4: The Fundamental Theorem of Algebra**  
Added 3 new question types with smaller values to generate more manageable answers.
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Added 4 new question types with different inequality symbols, similar to existing question types 8-13.
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Added 2 new question types involving interest with low level of difficulty.
- **5.4: Properties and Applications of Logarithms**  
Added 2 new question types involving condensing logarithmic expressions of low difficulty level.
- **5.5: Exponential and Logarithmic Equations**  
Added 4 new question types involving half-life and doubling/tripling times.  
Added new question type involving continuously compounded interest.
- **10.1: Solving Systems by Substitution and Elimination**  
Added new question type: application problem for a  $2 \times 2$  system of equations.
- **10.4: The Algebra of Matrices**  
Added several new question types with different matrix sizes for matrix algebra questions.
- **10.7: Linear Programming**  
Added 4 new question types: linear programming, including 3 application questions involving managing an orchard, investing money, and supplying a resort as well as a question involving an unbounded feasible region.
- **11.3: Geometric Sequences and Series**  
Split existing question type 12 into three question types based on level of difficulty and whether the series converges or diverges.

# Essential Calculus

## Enhancements

- 113 new questions
- Solutions screens have been improved throughout the product
- New Explain Error screens have been added to several sections and the existing ones have been improved
- Flexibility for user input has been increased
- Default curriculum has been updated such that a wider variety of questions are included
- Multiple choice questions have been added and the existing ones have been improved throughout the product

## New Questions

- **1.4: Polynomials**  
Added 6 new questions for factoring 2<sup>nd</sup> degree trinomials (like problems 42-45 in the textbook)
- **1.8: Functions and Models**  
Added 7 new questions, all word problems, for modeling different types of application functions (like problems 35-39, 44-46, 49-54 in the textbook)
- **2.2b: Instantaneous Rate of Change and Interpreting Graphs**  
Added 4 questions for finding the slope of a given function using the graphing calculator, coming from existing cases where iterations were split such that each one of them will include the same type of function
- **3.1: Product and Quotient Rules**  
Added 1 question that is a simplified version of an existing question for finding the derivative of a given function using the quotient rule
- **3.4b: Critical Points and the First Derivative Test**  
Added 3 new questions, word problems for finding the increasing and decreasing intervals (like problems 64-67, 76 in the textbook)
- **4.1a: Higher-Order Derivatives and Concavity**  
Added 1 question for finding the second derivative of a given radical function and evaluating it at 3 given values (like problem 23 in the textbook)
- **4.1b: Higher-Order Derivatives: The Second Derivative Test**  
Added 2 questions for finding the second derivative and using it to locate the local extrema, coming from an existing case where the iterations were split such that each one will have the same level of difficulty
- **4.2: Curve Sketching: Polynomial Functions**  
Added 1 new question with 4 parts for finding the first and second derivatives of a 3<sup>rd</sup> degree polynomial function, the increasing and decreasing intervals, the concave up and concave down intervals, the local extrema (which always are integers) and the inflections points (like problems 21-24 in the textbook)
- **6.1: The Indefinitely Integral**  
Added 13 new questions of varying level of difficulty for finding the indefinite integrals, 2 of them are word problems, business applications (like problems 13-14, 20-39, 51-54 in the textbook)
- **6.2: Integration by Substitution**  
Added 8 new questions of varying level of difficulty to perform integration using the technique of substitution (like problems 14-17, 20, 23, 25-26, 28-29, 31, 34 in the textbook)
- **6.3b: The Definite Integral**  
Added 6 new questions, 4 of them are applications of the average value and the other 2 are for finding the definite integral using the technique of substitution (like problems 25, 44-47 in the textbook)
- **6.4: Area (with Applications)**  
Added 1 new question for finding the area bounded by the  $x$ -axis and a function on a given interval such that an intercept is within the interval (like problems 13-14 in the textbook)
- **6.5: Area Between Two Curves (with Applications)**  
Added 8 new questions of varying level of difficulty for finding the area of a region bounded by the graphs of the given equations – for some of them the limits of integration are given and for the others the student needs to find them algebraically (like problems 1-16 in the textbook)

## *New Questions (continued)*

- **7.4: Improper Integrals**  
Added 15 new questions of varying level of difficulty for determining whether the given improper integrals are convergent or divergent and evaluating those which are convergent (like problems 11-30, 36, 38 in the textbook)
- **7.5: Probability**  
Added 10 new questions such that 4 of them are for determining if the given function is a probability density function and the rest are applications problems for finding the probability and the expected value of a certain event (like problems 3-4, 9, 11-12, 15, 21-30 in the textbook)
- **8.1: Functions of Several Variables**  
Added 4 new questions, all word problems, business applications of the functions of two variables (like problems 28-34 in the textbook)
- **8.2: Partial Derivatives**  
Added 15 new questions for finding partial derivatives of exponential and logarithmic functions, for finding second-order partial derivatives and business applications of marginal productivity, marginal cost and profit (like problems 11-15, 21-22, 25-27, 33-34, 37, 39, 53-60 in the textbook)
- **8.3: Local Extrema for Functions of Two Variables**  
Added 7 new questions such that 3 of them are for finding all the local maxima, local minima and saddle points always with integer  $x$ - and  $y$ -values (a simpler version of existing ones) and the other 4 are business applications for optimizing an equation in two variables of profit or revenue (like problems 25-30 in the textbook)
- **10.1: Infinite Sequences**  
Added 1 question which is an improved version of an existing one such that all iterations have the same level of difficulty

## Enhancements

- New questions were added to the lesson on finding  $z$ -values using the normal distribution. This lesson is titled "6.4 Find the Value of  $z$ " in Classic Statistics, "8.4b  $z$  - Transformations" in *Discovering Statistics*, and "6.4 Finding  $z$  Values Using the Normal Curve" in *Beginning Statistics*.
- New questions were added to the introductory lesson on finding confidence intervals for population means. This lesson is titled "8.2 Introduction to Estimating Population Means" in Classic Statistics, "10.1 - 10.3 Introduction to Estimating Means" in *Discovering Statistics*, and "8.1 Introduction to Estimating Population Means" in *Beginning Statistics*.
- More than 180 new questions were added for WebTest in the "Beginning Statistics" Plugin.
- Instruct screens were updated throughout the lesson on using  $P$ -values in hypothesis tests for population proportions. This lesson is titled "9.2 Hypothesis Testing Proportions: P Value" in Classic Statistics, "12.1a Hypothesis Testing Proportions (P Value)" in *Discovering Statistics*, and "10.4 Hypothesis Testing for Population Proportions" in *Beginning Statistics*.
- Instruct screens were updated throughout the lesson on using  $P$ -values in hypothesis tests for population means. This lesson is titled "9.4 Hypothesis Testing Means: P Value" in Classic Statistics, "11.4a Hypothesis Testing Means (P Value)" in *Discovering Statistics*, and "10.3 Hypothesis Testing for Means (Large Samples)" in *Beginning Statistics*.
- Instruct screen 9 was updated in the lesson on finding confidence intervals for population proportions. This lesson is titled "8.1 Estimating Proportions" in Classic Statistics, "10.7 - 10.9 Estimation (Proportions)" in *Discovering Statistics*, and "8.4 Estimating Population Proportions" in *Beginning Statistics*.
- The Solution and Step By Step screens were updated for Problem Types 24, 25, and 26 in the lesson on finding expected values for discrete random variables. This lesson is titled "5.1 Discrete Random Variables" in Classic Statistics, "7.1 - 7.4 Discrete Random Variables" in *Discovering Statistics*, and "5.1 Expected Value" in *Beginning Statistics*.
- The Standard Normal Tables were expanded to include  $z$ -values in the intervals  $[-3.49, -3.10]$  and  $[3.10, 3.49]$ .
- The Instruct screens and questions were updated in the lessons on hypothesis testing and confidence intervals for population means regarding when to use the normal distribution and when to use the Student  $t$ -distributions.

## New Questions

### Find the Value of $z$

- Given the mean and standard deviation of some normally distributed data, find:
  - a. The minimum data value that lies in the top  $r\%$  of the data for a given percentage  $n$ .
  - b. The two data values that separate the top  $r\%$  and the bottom  $r\%$  for a given percentage  $n$ .
  - c. The two data values that separate the top  $r\%$  and the bottom  $k\%$  for given percentages  $n$  and  $k$ .
- Given the mean of some normally distributed test scores and given the percentage of scores that are above some given test score, find the standard deviation.

### Introduction to Estimating Population Means

- Calculate the margin of error for a given confidence interval.
- Calculate the sample mean for a given confidence interval.

## Multimedia

- Audio has been updated for all tables of contents.

## *Enhancements*

- Added option to Curriculum Settings to allow multiple attempts per question in certify. If selected, the user can enter a finite number of additional attempts between 1 and 99, or select unlimited. This option is curriculum specific.
- Added option to Curriculum Settings to allow the instructor to disable the calculator link in lessons. This option is curriculum specific.
- Added a Create New button to the Open Curriculum window.
- Changed how to handle opening existing curriculums when entering Lesson Editor. Now we only automatically open a curriculum for an instructor if there is only one existing curriculum and it belongs to the opening instructor. Otherwise, we open a list of existing curriculums with an option to create a new curriculum.

## Student WebTest

- Printing "missed/incorrect only" now includes questions marked as improper also.
- Change wording on Results>Lesson Statistics>Tabular to be clearer.
- Receive "0 Unable to open the Exam" when practice test times out with message open.
- Report window in lower right hand corner during test review should just appear rather than slowly sliding on screen
- If the user opened any lessons through the student WebTest review, automatically close those lessons if user closes student WebTest.
- Fix Advanced Question Builder questions' answer evaluation for answers including special characters such as \$, inf and %.
- Fixed issue where time data for time spent on Advanced Question Builder questions was not being sent to server.

## Test Builder

- Changed wording on printing and exporting window for clarification:
  - Changed "Blank Test" to "Questions Only"
  - Switched order of "No. of versions" and "No. of copies" (applies to printing only)
  - Changes "No. of copies" to "Total no. of copies" (applies to printing only)
  - Changed "Advanced Options" to "Formatting Options"
- Points/Credit for Steps window: Added note defining "NE" in "Credit for unsimplified answers in %" column and added mouse over instructions for changing setting back to NE if desired.
- Fixed pictures in Advanced Question Builder questions not showing up for shared tests.
- Fixed printing front and back issue when printing multiple items if printer default is one sided
- Fixed Help quits working after open a test from New Test portion
- Made "Edit" button on Advanced Question Builder questions invisible when viewing these questions from Cluster, Uncluster, and Delete window since these questions cannot be edited here.
- Fixed text box exporting at 22 pt font when resolution is 1600 x 1200
- Changed title of "Plugin" tab to "Supplemental" for clarification.
- ePublish: Added option to disable calculator link in student WebTest. Setting is test specific.

- Fixed multiplication dot was appearing as a multiplication cross in exports
- Tables in Advanced Question Builder questions would not export if followed by text.

## Review Student Tests

- Added keyboard short cuts so user can use left and right keys to navigate through problems in test review
- Removed animation of Report window sliding onto the screen when first open test review
- Simplified editing scores per question; instructor can edit score directly in Report window rather than clicking a link
- If edited scores cannot be uploaded for some reason, user receives prompt and is given option to try again.
- Fixed some display issues with Answer Sheet, Results, Print and Export buttons at top of screen (could have more than one button appear "pressed" at once; if clicked a button a second time would become "unpressed" even though that option was still enabled, etc).
- Printing/exporting missed/incorrect now includes improper answers.

## Advanced Question Builder

- When user first enters Advanced Question Builder, categories are now appearing on the left rather the user having to double click to move the categories over.
- Added appropriate variable restrictions and improved warning messages for several functions.
- Function - Mode - Did not recognize 0 as a mode
- Help button and help menu item now open on same initial screen for consistency.
- Removed F-value function since it does same thing as another function (functionality remains).
- Fixed three dot symbol inserted using insert symbol option not appearing correctly.
- Fixed error if random variable in the denominator of a fraction was a negative number, expression was calculating the product of the numerator and divisor rather than the quotient.

## *Advanced Question Builder (continued)*

- Incorrect answers were being counted as not answered for a specific answer definition for Advanced Question Builder questions.
- Student has Disabled option to insert symbols into the answer definition for free response type questions, since limited symbols that they can enter on the student side.

## *New Features*

### **Grades for Other Assignments by Student and by Assignment**

The Instructor Grade Book now features two more reports entitled, "Grades per Other Assignment" and "Grades for Other Assignments per Student". Now instructors will be able to view grades for the Other Assignments, as well as statistic information such as average, max score, min score, and standard deviation of each Other Assignment. These reports will help instructors have a better understanding of how students are doing on these assignments.

### **Individual Student Due Dates**

The Instructor Grade Book now features the ability to edit a HLS Lesson due date for an individual student. On the All Student Scores, Detailed Student Grades, and the Edit Scores by Student pages, the instructor will be allowed to change one or more student's due dates without affecting the rest of the section. This improvement will allow greater flexibility with assigning due dates and changing circumstances for students.

### **Student Certificate Codes Templates**

We have added a new column for student certificate code templates on the Edit Scores by Assignment and Edit Scores by Student pages. If a student provides their certificate code, it will be easier for the instructor to verify that the code is a valid certificate code for the corresponding HLS Lesson with the certificate code template displayed on this page.

### **WebTest Prerequisites**

We have added the ability for instructors to require students to complete certain WebTests before moving on to another WebTests. The instructor will be able to specify a minimum grade to be achieved on a prerequisite WebTest as well.

## *Redesigned Features*

### **Larger Name Selection Window for the Messaging System**

The Instructor Grade Book now contains a larger window for viewing the address book in the Hawkes Messaging System. This redesign enlarges the address book window so that all possible recipients are displayed.

### **Attendance Policy**

We've changed the Attendance Policy feature to be more flexible. Now, you can choose to record attendance as an assignment that will carry its own grade or as an overall penalty to your students' grade. Penalties can be assigned to any type of absence and as either percentage or point deductions. You can make as many penalties as you need to fit your policy. You can also change the names of Attendance Types if you need.

### **Improved Exports for Greater Compatibility with other Grade Book Engines**

This redesign provides additional Grade Book export options for instructors. Instructors will be able to export their WebCMS Grade Books in formats that are conveniently importable into WebCT, Blackboard, and other popular learning systems' grade books. Some improved display features are highlighting grades of zero and exporting the Detailed Student Grades page in Graphical View format. These changes will allow instructors to continue using the Hawkes Grade Book as well as other grades books without having to perform any workarounds.

### **View Which Sections Students Struggle On**

We have added more detailed information to the "Student Time per Test Question" and "Summarized Time per Test Question" reports. Now these reports will contain the Section Number and Section Name that corresponds to the test question. These reports will also contain the percentage of students who answered correctly and a "Sample Question" hyperlink to allow the instructor to view an example of the question the student saw on the test. This redesign will help instructors find the specific HLS Lessons that the student is struggling with.

## ***Enhanced Features***

### **Larger View Buttons on the View/Restore Grade Book page**

Now the “View Archived Grade Book” and “View Individual Student Archives” buttons are larger and the actions of these buttons are made clearer with the label of their purposes next to the images.

### **Progress Report Interface**

Some students were confused by the HLS Lesson being hyperlinks to manually submit certificates. Now, to avoid any confusion for students, a description of the actions necessary for the students to take to certify are presented when they click on those links.

### **New Default Value for Late Penalty**

The default value for late penalties has been changed to 100 points. This new value makes the default setting for late penalties more useful to instructors. If the student submits an assignment late, no points are awarded. As always, instructors can alter this default to their own desired setting.