Changing how math is taught and learned using MyMathLab

By
Hamza Duhaini

About Me

Name: Hamza Duhaini (Lebanon).

Math and Physics Department Supervisor at ABP affiliated with Qatar foundation
Education

• Master of Science degree in Mathematics
• Teaching diploma in Mathematics

(American University of Beirut)

Experience

• Twenty Three years of teaching Mathematics
• Various curriculum:
  American high school
  International baccalaureate (IB),
  IGCSE and A level
  Lebanese baccalaureate
About ABP

• The Academic Bridge Program (ABP), a center of Qatar Foundation for Education, Science and Community Development

• ABP was established in 2001

About ABP

• A pre-university program established for high school graduates from Qatar and other countries in the region

• More than 2,500 students have graduated from our program.
About ABP

- The ABP is a rigorous two-semester general studies program which focuses on English, math, science and computer skills.

About ABP

- ABP also partners with the universities at Qatar Foundation to offer cross-registration, an exceptional opportunity for students to prove that they are ready for university studies.
The Challenges students face in Learning Mathematics

The challenges

• Lack of motivation and interaction
The challenges

- Memorizing instead of understanding mathematical principles

- Difficulty with vocabulary and terminology of mathematics, understanding directions and explanations, or translating word problems
The challenges

• Trouble learning or recalling concepts, definitions and meanings of abstract terms;

The challenges

• Difficulty reading texts to direct their own learning and communicating mathematics, including asking and answering questions;
The challenges

• Emotional block to mathematics originally due to Math anxiety.

Solution
Welcome to MyMathLab

What is MyMathLab?
MyMathLab is an online tutorial, homework, and assessment system for mathematics courses.

MyMathLab has helped over 9 million students succeed in their math and stats classes since 2001.
MyMathLab is

Personalized.

MyMathLab is

Interactive.
MyMathLab is Effective.

What can students do with MyMathLab?
With MyMathLab students can

• Practice and learn mathematics when and where they want, and at their own pace.

With MyMathLab students can

• Work through unlimited tutorial exercises correlated to the exercises in their textbook and get immediate feedback on their answers.
With MyMathLab students can

• Receive a personalized study plan to diagnose areas where they need to practice.

With MyMathLab students can

• Access a multimedia textbook with links to learning aids, such as animations and videos.
With MyMathLab

students can

• Use online tools, such as a discussion board or virtual classroom, to communicate with the teachers and other students.

With MyMathLab

students can

• Feel as if they have their own personal tutor, always available, and dedicated to their success.
What can Instructors do with MyMathLab?

With MyMathLab, Instructors can:

• Deliver all or a portion of their course online, whether the course is based in a lab or in a traditional classroom.
With MyMathLab
Instructors can

• Create and assign online homework, quizzes and tests that are automatically graded and tightly correlated to their textbook.

With MyMathLab
Instructors can

• Manage and track students' results in a powerful online gradebook designed specifically for Mathematics and Statistics.
With MyMathLab
Instructors can

• Customize their courses depending on their syllabus and their students' needs.

With MyMathLab
Instructors can

• Use a variety of communication tools to create a supportive online community for their students.
Navigation Through MyMathLab
MyLab & Mastering Sign In

Username

Password

Sign In

Forgot your username or password?

These are my courses

Coord: MT 132: Precalculus 2
Course ID: duhaini3220
Students Enrolled: 0 (How Students Enroll)

Coord: MT 132: Precalculus 2 - Period 2
Course ID: duhaini19915
Students Enrolled: 11

Coord: MT 132: Precalculus 2 - Period 4
Course ID: duhaini4883
Students Enrolled: 2

Coord: MT 241- MT 242: Calculus
Course ID: duham15524
Students Enrolled: 0 (How Students Enroll)

Coord: MT121-122 College Algebra and Trigonometry
Course ID: duhaini05839
Students Enrolled: 0 (How Students Enroll)

Coord: MT113-114: Liberal Arts Math
Course ID: duhaini74643
Students Enrolled: 0 (How Students Enroll)
Math Pallet

Complete the sentence below:
If the fifth term of an arithmetic sequence is 11 and the common difference is 4, then the sixth term of the sequence is ________.

If the fifth term of an arithmetic sequence is 11 and the common difference is 4, then the sixth term of the sequence is 15.
Learning Aids

Complete the sentence below.
If the fifth term of an arithmetic sequence is 11 and the common difference is 4, then the sixth term of the sequence is ___

Well done!
An arithmetic sequence may be defined recursively as \( a_1 = 2, a_n = a_{n-1} + 4 \)
whose \( a_1 \) is the first term and \( d \) is the common difference. Thus, if the fifth term of an arithmetic sequence is \( a_5 = 11 \) and the common difference is \( d = 4 \), then the sixth term is \( a_6 = a_5 + 4 = 11 + 4 = 15 \).

Sorry, that’s not correct.
Use the formula \( S_n = \frac{n}{2}(a_1 + a_n) \) to find the sum. Check your work carefully.
Find the sum:

4 + 9 + 14 + ... + (5n - 1)

An arithmetic sequence is given. What are the first and last terms of this sequence?

\[ a_1 = 4 \]
\[ a_n = 5n - 1 \]

To find the sum of the given sequence, use the formula:

\[ S_n = \frac{n}{2} (a_1 + a_n) \]

\[ S_n = \frac{n}{2} (4 + 5n - 1) \]

Simplify.
3 Find the Sum of an Arithmetic Sequence

The next result gives two formulas for finding the sum of the first $n$ terms of an arithmetic sequence.

**THEOREM**

**Sum of the First $n$ Terms of an Arithmetic Sequence**

Let $\{a_n\}$ be an arithmetic sequence with first term $a_1$ and common difference $d$. The sum $S_n$ of the first $n$ terms of $\{a_n\}$ may be found in two ways:

$$S_n = a_1 + a_2 + a_3 + \cdots + a_n$$

or

$$S_n = \frac{n}{2} [2a_1 + (n-1)d]$$

**Proof**

$$S_n = a_1 + a_2 + a_3 + \cdots + a_n$$

$$= a_1 + (a_1 + d) + (a_1 + 2d) + \cdots + [a_1 + (n-1)d]$$

$$= (a_1 + a_1 + \cdots + a_1) + [d + 2d + \cdots + (n-1)d]$$

$$= na_1 + d \left[ 1 + 2 + \cdots + (n-1) \right]$$

$$= na_1 + d \left[ \frac{(n-1)n}{2} \right]$$

$$= na_1 + d \left[ \frac{n(n-1)}{2} \right]$$

$$= \frac{n}{2} [2a_1 + (n-1)d]$$

**Quizzes & Tests**

- **Chapter 7.3-7.5 Take-Home Test**
  - 90 min
  - 1 of 1
  - 69.50%

- **Take-Home Quiz 7.6-7.7**
  - 60 min
  - 1 of 1
  - 83.45%

- **Chapter 7 Home Test**
  - 120 min
  - 2 of 2
  - 77.70%

- **Chapter 8 Test**
  - 55 min
  - 1 of 1
  - 74.20%

**Tools for Success**

- Sample Tests and Quizzes
  - Sample tests and quizzes can be taken for practice or to build your study plan. Sample tests and quizzes do not affect your grade.

- Pearson Tutor Services
  - 24/7 help

- Discussions
  - View, post, and participate in discussions.

**Course Tools**

- **Chapter 7 Pre-Test**
  - 2 of 2
  - 61.25%

- **Section 6.1 Are You Prepared Quiz**
  - 5 of 5
  - 100%

- **Section 6.1 Concepts and Vocabulary Quiz**
  - 2 of 2
  - 87.5%

- **Section 6.2 Are You Prepared Quiz**
  - 1 of 1
  - 100%

- **Section 6.2 Concepts and Vocabulary Quiz**
  - 1 of 1
  - 100%

- **Section 6.3 Are You Prepared Quiz**
  - 1 of 1
  - 100%

- **Section 6.3 Concepts and Vocabulary Quiz**
  - 1 of 1
  - 75%

- **Section 6.4 Are You Prepared Quiz**
  - 3 of 3
  - 69.67%

- **Section 6.4 Concepts and Vocabulary Quiz**
  - 1 of 1
  - 100%

- **Section 6.5 Are You Prepared Quiz**
  - 2 of 2
  - 100%

- **Section 6.5 Concepts and Vocabulary Quiz**
  - 2 of 2
  - 87.5%
**Study Plan**

- **Course Name:** MT 134: PreCalculus 2 - Period 2

- **Homework:** Study Plan

- **Quizzes & Tests:** You have earned 106 of 136 mastery points (MP).

You have earned 106 of 136 mastery points (MP).

Practice these objectives and then take a Quiz Me to prove mastery and earn more points.

**Objectives to practice and master**

6.1 jailors and their measure

- Convert from degrees to radians and from radians to degrees.

6.2 trigonometric functions: Unit Circle Approach

- Use a calculator to approximate the value of a trigonometric function.
- Use a circle of radius r to evaluate the trigonometric functions.

6.3 properties of the trigonometric functions

- Are you prepared?

6.4 Graphs of the Sine and Cosine Functions

- Determine the properties, amplitude, and period of sinusoidal functions.

**Recently mastered**

- 12.5 The Bimodal Theorem
- Use the Bimodal Theorem.

**Gradebook**

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<th>Total</th>
<th>Score</th>
<th>Time Spent</th>
<th>Worked</th>
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Your Overall Score is a weighted average calculated using your average score for each category and the category’s weight in points.

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90 total pts 76.67 pts earned 3h 26m

Overall Score: You have earned 76.67 out of 90 for an overall score of 85.2%.
Chapter 6: Trigonometric Functions

Function:

\[ f(x) = \sin(x) \]

\[ y = a \sin[b(x - c)] + d \]

- \( a \) \:
  - 1
- \( b \) \:
  - 1
- \( c \) \:
  - 0
- \( d \) \:
  - 0

Demo Function

Show Equation
Guideline
Integral Value
Large

Transformations of Sin Cos and Tan Functions

- Graph of \( y = \sin(x) \)
Pearson Tutor Services

Need more help? Access Pearson Tutor Services for personalized, detailed assistance with what you're learning.

Pearson Tutor Services for MyMathLab

As a MyMathLab student, you can register for one tutoring session with Pearson Tutor Services at no additional cost for up to thirty minutes of assistance.

The tutoring service provides you with the following:
- Help when you need it 24/7
- Easy access, with no additional registration
- Interactive whiteboard-based interaction, as you work together with your tutor
- Archived access to your tutoring sessions, for you to refer to later or if you have additional questions

Following your tutoring session, you will be presented with a survey form; we welcome your feedback.

After your free one-hour tutoring session concludes, you can follow the instructions on the page to purchase additional tutoring.

Note: If you are having technical problems with MyMathLab, you should contact our Customer Technical Support Team at http://24pearsoned.com/help.

Start your tutoring session from the Pearson Tutor Services link on your Course Home or Dashboard page. You can also ask for tutoring help directly from a question in your homework or study plan.

Pearson Tutor Services are provided by Pearson Higher Education, a division of Pearson Education, for US and Canadian postsecondary students. Pearson's offer of tutoring service is subject to change without notice.
Chapter 12 Test

(Thursday, March 26)

Dear students,
You will have a test on chapter 12 next week during your Lab session. This is the last test for the 10th week.
Study well and Good Luck

(Thursday, February 6)

Dear Students
You will have a test on sections 7.1 to 7.5 next Thursday February 13. You can review your homework and do sample quizzes and tests.
Good Luck
Ms. Nancy

This course is based on Sullivan: Precalculus Enhanced w/ Graphing Utilities, 6e
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Assignment Manager

MT 132: Precalculus 2

Copy Homework Member List

Start Select Media and Questions Choose Settings

Book Sullivan: Precalculus Enhanced w/ Graphing Utilities, 6e

Gradebook Category Homework

Homework Name Chapter 6 Review Homework

Would you like this homework to be personalized based on student test or quiz results? Please note that media cannot be added to personalized homework assignments.

Yes, omit questions from objectives that were mastered in test/quiz: Choose...

If this assignment contains items from sections that you have removed from your course, they will not be shown in the My Selections area on step 2, and they will be removed from the assignment when you click Save.

Cancel Next Save Save & Assign

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### Available Questions (328)

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### My Selections (0)

- **Question ID / Media**
- **Section / Book**
- **Estimated time:**
- **Points:**

### Scoring Options

- **Late submissions:** Allow students to work and change score after due date.
- **Partial credit:** Allow partial credit on questions with multiple parts.

### Access Controls

#### Prerequisites

- **None**

### Presentation Options

- **Lock Correct Answers:** Indicate and lock all correct answers after each Check Answer.
- **Save Values:** Save question values and student answers.
- **Printing:** Allow students to print this homework assignment.
- **Learning Aids:** Help me solve this, Video, Animation, Textbook, Calculator, Instructor Tip.

### Availability Options

- **Homepage:** 11/28/2014
- **Time Zone:** Current course time: 10:25am
- **Current course time:** 10:25am
- **Time Zone:** (UTC+0:00) Kuwait, Riyadh

### Question Source

- Show publisher questions
- Show additional test bank questions
- Show custom questions (+) for this book
- Show other custom questions
- Refine Selection...
- (+) Create my own questions
## Access Controls

### Password
- **Required password:**

### Prerequisites
- **None**

### Number of Attempts
- **Limit number of attempts to:**

### Incomplete Attempt
- Students have the Save for Later option. They can leave and return later to complete the test. They must answer in order, and cannot go back to previously viewed questions.
- Students are expected to complete the test in one session
- If attempt is interrupted, students may re-access and complete on their own
- if attempt is interrupted, instructors must enable access
- Restricted Access: Student cannot resume an incomplete attempt until the instructor enables access to it.
- Blocked Access: Student cannot access other assignments or questions while taking a test. If the student does not submit the test, access to all questions and assignments is blocked until the instructor enables access to or deletes the incomplete test.

## Presentation Options

### Time Limit
- **Test time allowed (minutes):**

### Question display
- **Enable question order for each student**

### Learning Aids
- **None**

### Graphing
- **Allow students to move points by typing coordinates**

## Review Options

### Results Display
- Test Summary shows test score and question results

### Reviewing test
- Student can review test any time after submitting

### Study Plan
- Results are used to update the study plan
- Allow students to print the test with the correct answers and their
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![Gradebook Image](image-url)
A limp, suspended in the air at a height of 500 feet, lies directly over a line from a sports stadium to a planetarium. If the angle of depression from the limp to the stadium is 30° and from the limp to the planetarium is 30°, find the distance between the sports stadium and the planetarium.

The distance between the sports stadium and the planetarium is 1000 feet. (Do not round until the final answer. Then round to two decimal places as needed.)
Conclusion
• The percentage of students earning A’s and B’s in their Math courses have increased since we introduced MyMathLab into our curriculum.

• Students are spending more time practicing mathematics this year than any previous years.
• We anticipate that the success rate of those students in their subsequent course at their college will also increase.

• Teachers are tracking students’ performance much better and providing more help for struggling students.
• Teachers are interacting more with their students and are well aware of their strengths and weaknesses

One student said,

“It is SO much more helpful that you can work and rework problems, select view an example or select help me solve it in MyMathLab. This method of learning has been the most successful method of learning in my entire education.”