

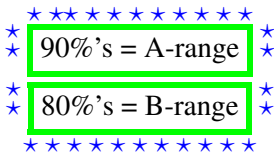
Welcome to class!

with Prof. D'Ambroise

High Expectations



Grading Standards



74-79% = C or C-plus = passing

70-73% = C-minus = failing

60%'s = D-range = failing

below 60% = F = failing

*All students are held to the same high standards
regardless of job/home/other class responsibilities.*

Grading Standards

*Aiming to surpass
is the best
strategy!*

★ ★ ★ ★ ★ ★ ★ ★ ★ ★
★ 90%'s = A-range ★
★ 80%'s = B-range ★
★ ★ ★ ★ ★ ★ ★ ★ ★ ★

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Failing Mentality (for lack of a better word)

- go to class
- do assignments
- take exams

Mentality for Success:

learn to engage & think in new ways

- prepare in advance
- go to class
- discuss with your peers & communicate with prof.
- do assignments
- think, ponder, ask questions, review, revise
- take exams
- be realistic & evaluate your progress honestly

Be prepared to work outside your comfort zone!

You will need to master...

BIG IDEAS (big scale)

- how math relates to real life
- how to read and interpret math
- understanding different presentations of the same information

STEPS OF PROBLEMS (small scale)

- algebra
- trig
- graphing functions
- prerequisite material
- new material

Communication is key

Office hours

- basic algebra questions
- basic trig questions
- basics about how to graph a function
- questions about prerequisite material you forgot
- questions about what we are currently covering
- questions about your major / your life goals, etc.
- and more!

Math is vast!

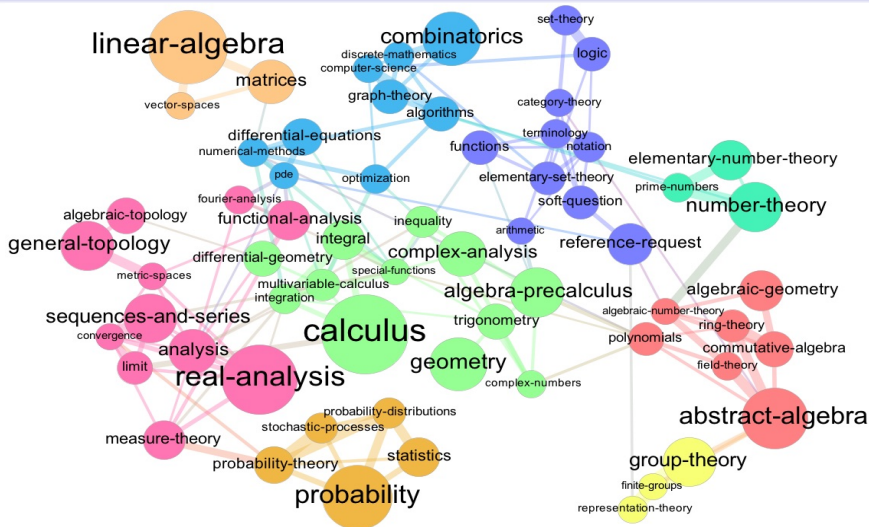


Image from Stack Exchange: <http://meta.math.stackexchange.com/questions/6479/a-graph-map-of-math-se>

Warning on outside resources

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can cause *confusion and failure!*

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If you use outside resources you must follow up with
reading the book, coming to office hours,
and interacting with *our* course material.

Only your Prof. can tell you what WE focus on in THIS class!

Harmful Math Stereotypes

- "I am not a math person."

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Math is a SKILL not a talent.

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It's a vicious cycle:

*if you believe you cannot do math,
then you won't work hard enough & you won't do well,
then your false belief that you can't do it will be
verified!*

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*BREAK THE CYCLE
by working hard
and learning to communicate & ask for help.*

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*Don't handicap yourself by adopting
false beliefs about your abilities.*

Work hard and LEARN HOW to read a math textbook.

*Tips: Skipping around is recommended for math!
(math textbook \neq novel)*

*Be persistent, ask questions, take notes.
Actively engage, don't be passive.*

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- Math is an Inborn Talent

False.

*Math is an acquired skill that takes
hard work and dedication.*

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*Don't handicap yourself by
shutting out peers, the prof., tutors, etc..*

Communication is essential to learning math!

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FALSE!

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*There are NO dumb questions in this class!
Students asking questions are showing initiative!
The Prof. loves working one-on-one for the best result!*

Mentality for Success

Too proud to get help?

Too scared to get help?

Too busy to get help?

Mentality for Success

Too proud to get help?

Too scared to get help?

Too busy to get help?

You're at risk for failure.

Advice From Students

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- ... struggling with a drug problem."
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This class is a commitment.

Plan wisely.

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Higher math is conceptual.

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WHY?

There is A LOT of information in this class.

Quick summaries help to reduce the cognitive load.

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Other students can help when you don't understand.

Helping others will increase your math confidence!

You'll see other students have the same questions.

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WHY?

After over a decade of teaching, the Prof. has seen many many students struggle and succeed past the same issues you are dealing with !

Five Stages of Learning

- ① **Novice:** technically knows the rules but has little or no situational understanding and cannot adapt quickly
- ② **Competent:** understands different situations, exceptions, or deviations from the rules

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- 5 **Mastery:** (rare) mental energy no longer needed to produce nearly perfect results

Five Stages of Learning: **GOALS** for exams

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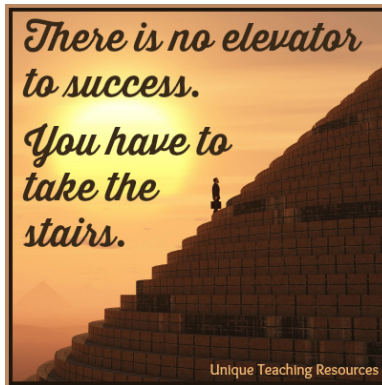
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- ④ **(decent outcome: A or B) Expert:** rules are instinctual & automatic, student has practiced so much they not surprised by exam questions
- ⑤ **(decent outcome: A or B) Mastery:** (rare) mental energy no longer needed to produce nearly perfect results

Memes



Everyday

**I WILL TRY HARDER
THAN I DID BEFORE!**



imgflip.com

The next few pages are designed for courses with online HW.

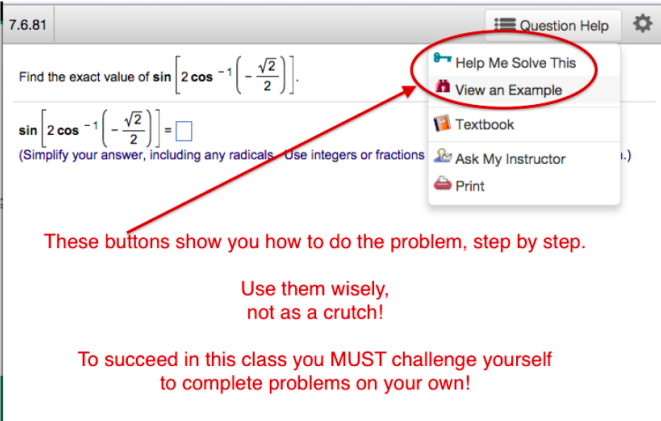
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The next few pages are designed for courses with online HW.

You cannot surpass novice level
if you rely too heavily on provided instructions.



The screenshot shows a math problem interface. At the top left, the problem ID '7.6.81' is displayed. The problem text asks to find the exact value of $\sin \left[2 \cos^{-1} \left(-\frac{\sqrt{2}}{2} \right) \right]$. Below the problem, the same expression is shown with an equals sign followed by a blue square input box. A note in parentheses says '(Simplify your answer, including any radicals. Use integers or fractions)'. On the right side, there is a 'Question Help' button with a gear icon. A red circle highlights the 'Question Help' button and the first two options in the dropdown menu: 'Help Me Solve This' (with a key icon) and 'View an Example' (with a book icon). A red arrow points from the text 'These buttons show you how to do the problem, step by step.' to the 'Help Me Solve This' button. Below this, another red arrow points from the text 'Use them wisely, not as a crutch!' to the same button. At the bottom, red text states: 'To succeed in this class you MUST challenge yourself to complete problems on your own!'.

7.6.81

Find the exact value of $\sin \left[2 \cos^{-1} \left(-\frac{\sqrt{2}}{2} \right) \right]$.

$\sin \left[2 \cos^{-1} \left(-\frac{\sqrt{2}}{2} \right) \right] = \square$

(Simplify your answer, including any radicals. Use integers or fractions.)

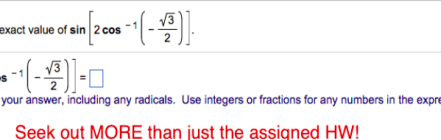
Question Help

- Help Me Solve This
- View an Example
- Textbook
- Ask My Instructor
- Print

These buttons show you how to do the problem, step by step.

Use them wisely,
not as a crutch!

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7.6.81

Question Help

Find the exact value of $\sin \left[2 \cos^{-1} \left(-\frac{\sqrt{3}}{2} \right) \right]$.

$\sin \left[2 \cos^{-1} \left(-\frac{\sqrt{3}}{2} \right) \right] = \square$

(Simplify your answer, including any radicals. Use integers or fractions for any numbers in the expression.)

Seek out MORE than just the assigned HW!

Look for the book section reference and go find more problems in the book.

Take the initiative and quiz yourself regularly using extra book problems!

81. $\sin\left(2 \sin^{-1} \frac{1}{2}\right)$

82. $\sin\left[2 \sin^{-1} \frac{\sqrt{3}}{2}\right]$

83. $\cos\left(2 \sin^{-1} \frac{3}{5}\right)$

84. $\cos\left(2 \cos^{-1} \frac{4}{5}\right)$