

Advice From Students

"I wish I hadn't taken this class while ...

- ... taking organic chemistry."
- ... running 3 businesses."
- ... working full time."
- ... struggling with a drug problem."
- ... not having time for office hours, appointments, or tutoring."

This class is a commitment.

Plan wisely.

Advice From Students

"I had no idea ...

- ... finishing HW early helps with understanding the material."

Advice From Students

"I had no idea ...

- ... finishing HW early helps with understanding the material."

Your brain needs time to settle and absorb the math.

Advice From Students

"I had no idea ...

- ... finishing HW early helps with understanding the material."

Your brain needs time to settle and absorb the math.

- ... making study sheets helps with understanding the concepts."

Advice From Students

"I had no idea ...

- ... finishing HW early helps with understanding the material."

Your brain needs time to settle and absorb the math.

- ... making study sheets helps with understanding the concepts."

Quick summaries help to reduce cognitive load.

- ... working in peer groups is actually helpful ."

Students explain math different than the Prof.!

You will realize your questions are NOT stupid!

Helping others increases math confidence!

Five Stages of Learning

- 1 **Novice:** technically knows the rules but has little or no situational understanding and cannot adapt quickly

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

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
- ③ **Proficient:** focuses is on long term goals (relating math to your major) rather than difficulties of individual math problems

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
- ③ **Proficient:** focuses is on long term goals (relating math to your major) rather than difficulties of individual math problems
- ④ **Expert:** rules are instinctual & automatic, student has practiced so much they not surprised by exam questions

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
- ③ **Proficient:** focuses is on long term goals (relating math to your major) rather than difficulties of individual math problems
- ④ **Expert:** rules are instinctual & automatic, student has practiced so much they not surprised by exam questions
- ⑤ **Mastery:** (rare) mental energy no longer needed to produce nearly perfect results

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

- 1 **(fail) Novice:** technically knows the rules but has little or no situational understanding and cannot adapt quickly

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

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

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

- 1 **(fail) Novice:** technically knows the rules but has little or no situational understanding and cannot adapt quickly
- 2 **(fail) Competent:** understands different situations, exceptions, or deviations from the rules
- 3 **(possible pass) Proficient:** focuses is on long term goals (relating math to your major) rather than difficulties of individual math problems

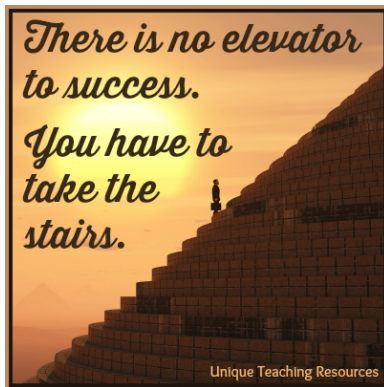
Five Stages of Learning: **GOALS** for exams

- ① **(fail) Novice:** technically knows the rules but has little or no situational understanding and cannot adapt quickly
- ② **(fail) Competent:** understands different situations, exceptions, or deviations from the rules
- ③ **(possible pass) Proficient:** focuses is on long term goals (relating math to your major) rather than difficulties of individual math problems
- ④ **(decent outcome: A or B) Expert:** rules are instinctual & automatic, student has practiced so much they not surprised by exam questions

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

- ① **(fail) Novice:** technically knows the rules but has little or no situational understanding and cannot adapt quickly
- ② **(fail) Competent:** understands different situations, exceptions, or deviations from the rules
- ③ **(possible pass) Proficient:** focuses is on long term goals (relating math to your major) rather than difficulties of individual math problems
- 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.

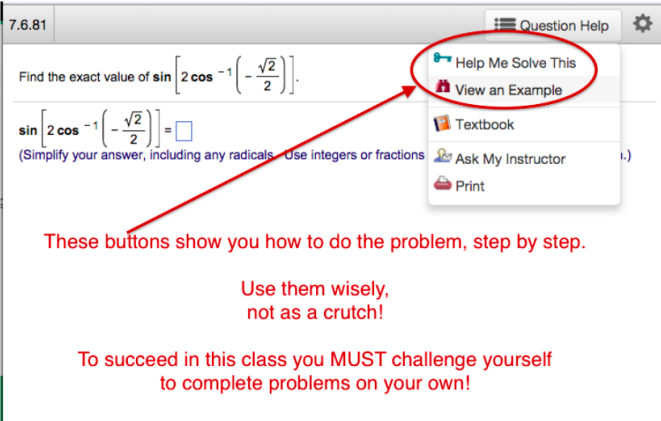
$$(\backslash_ /)$$

$$(\='.\' =)$$

$$(\")_(\")$$

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 is the problem ID '7.6.81'. At the top right is a 'Question Help' button with a gear icon. The main problem text is 'Find the exact value of $\sin \left[2 \cos^{-1} \left(-\frac{\sqrt{2}}{2} \right) \right]$.' Below this is an input field containing $\sin \left[2 \cos^{-1} \left(-\frac{\sqrt{2}}{2} \right) \right] = \square$. Below the input field is a hint: '(Simplify your answer, including any radicals. Use integers or fractions.)'. A red circle highlights the 'Question Help' button, and a red arrow points from this circle to the text 'These buttons show you how to do the problem, step by step.' The 'Question Help' menu is open, showing options: 'Help Me Solve This' (with a key icon), 'View an Example' (with a book icon), 'Textbook' (with a book icon), 'Ask My Instructor' (with a person icon), and 'Print' (with a printer icon). Below the screenshot, there is red text: 'Use them wisely, not as a crutch!' and 'To succeed in this class you MUST challenge yourself to complete problems on your own!'.

7.6.81

Question Help

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.)

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!

To succeed in this class you MUST challenge yourself
to complete problems on your own!

You cannot surpass the competence level
if you don't test yourself frequently.

The screenshot shows a math problem interface. At the top left, the problem number "7.6.81" is circled in red. A red arrow points from this number to the problem text. The problem text asks to find the exact value of $\sin \left[2 \cos^{-1} \left(-\frac{\sqrt{3}}{2} \right) \right]$. Below the problem, the same expression is shown with an equals sign and a blue square box for the answer. A red arrow points from the problem number to the expression. Below the expression, there is a note in parentheses: "(Simplify your answer, including any radicals. Use integers or fractions for any numbers in the expression.)". Two red arrows point from the problem number to the expression and the note. Below the note, there are two red annotations: "Seek out MORE than just the assigned HW!" and "Look for the book section reference and go find more problems in the book." A red arrow points from the problem number to the expression. Below the expression, there is another red annotation: "Take the initiative and quiz yourself regularly using extra book problems!"

7.6.81

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!

In Problems 81–92, find the exact value of each expression.

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