Section 2.2©

Writing algebraic expressions
Writing an expression for consecutive integers

- If \(x\) is the first of three consecutive integers, express the sum in terms of \(x\).
- Three consecutive integers are three whole numbers, such as 7, 8, & 9
- The second integer is one more than the first, and the third is always two more than the first
- So if the first integer is \(x\), then the second would be \(x + 1\), and the third would be \(x + 2\)
- Summing all three up would be: \(x + (x + 1) + (x + 2)\)
- This can be simplified to \(x + x + x + 1 + 2 = 3x + 3\)
Three consecutive odd integers

- The first odd integer is \( y \), so what is the second consecutive odd integer?
- An example would be 3, 5, & 7
- The second consecutive odd integer would be \( y + 2 \), and the third would be \( y + 4 \)
- Even though all values are odd, it would still be \( y, y + 2, \) and \( y + 4 \)
- Summing the three consecutive odd integers
- Would be: \( y + (y + 2) + (y + 4) = 3y + 6 \)
- Check: \( 3 + 5 + 7 = 15; \ 3(3) + 6 = 15; \) check.
Write each algebraic expression described

- If $z$ represents the first of two consecutive even integers, express the sum of the two integers in terms of $z$

- If $x$ represents the first of three consecutive even integers, express the sum of the 1st and 3rd in terms of $x$

- Houses on one side of a street are numbered using consecutive odd numbers. If the first house is numbered $x$, write the expression of the sum of the first 5 numbers in a row
Math Study Skills – Chapter 8

- Class time and Note taking
- Do you work out in a gym? Are you bored? Most people are not
- But most people are bored in a math class
- Think of math class as an intense mental workout
- Please take five minutes and reflect on your typical mindset during math class. Are you bored; overwhelmed; or just darn happy to be here? Describe your activities as well as your thoughts
Before class

- Your success in class, of course, starts before class
- Have you done the homework, reading, and other preparations for class?
- Like any intense workout, it requires a warm-up
- You can:
  - Review your notes from last class
  - Survey the section in the textbook to be covered
  - Preparing questions for the instructor
  - Working on previous material
Punctuality

- So far this has not been much of a problem in here
- When the time arrives for class to start, be prepared for it
- Stop conversations, ready yourself for note-taking and listening
- Getting a good seat – you really do feel more of a ‘part’ of class sitting closer, rather than in the back
- Also try to get a center seat rather than against one of the walls
During class

- How do you prevent boredom? By listening more attentively
- You can listen more actively – by asking questions or thinking of questions to ask
- Many of us remember the ‘dexter’ in our classes who asked all sorts of lame questions, and try to avoid looking like him
- As a result, you may miss out on asking a good question that may help yourself, as well as others in the class who were afraid to ask
Note taking

- Note taking is an individual activity – different techniques work according to your learning style

- You should:
  - Begin each class with a clean sheet of paper
  - Space notes out – do not cram them together
  - Copy all steps shown – don’t skip, it may bite you later
  - Notice the instructor’s body language and voice – it will tip you off on what material is most important
  - If you get confused during note-taking, then ASK
The column system for taking notes

- Most professional documentation procedures employ the column system
- It eliminates much of the confusion that may result from hurried note taking
- Divide your page into 2 or three columns, one for notes, one for vocabulary, and/or one for examples
- Some columns may then have large white areas – that’s fine, it will be easier later to relate a vocabulary word to the concept it refers to, for example.
- Yes, it will end up in much more paper being used
- But it will help isolate ideas for easier studying later
Trying the column system

- On the top of page 59, please take five and indicate whether you wish to try the Column System to take notes. If so, then describe why. If not, then describe your own system, and why it works for you.
Asking questions

- It is true that most (good) instructors build time into each lesson plan for questions and answers.
- Questions from you are expected, and in fact shows the instructor that you are engaged in the subject.
- It is not always possible to frame your questions in the best possible manner, especially when you have just been presented with something confusing.
- But, on the top of pg. 60, there is a list of question starters if you feel self conscious about asking.

**THIS IS THE MOST IMPORTANT POINT IN MATH STUDY SKILLS** – class is your time; you paid for it; make the most of it by asking questions to eliminate confusion.
After class

- Like any workout, you need a cool-down
- The stretching part is vital in a physical workout
- One way to cool down is (if time allows) asking the instructor a question as you leave
- If that is not possible, then review your notes immediately after class – do a few practice problems, or start your homework
- The longer the gap between class and the next time you sit down to study, the more likely you will forget what you have learned
Using notes outside of class

- Leaving some ‘white space’ in your notes will allow you to add to them later, after you have re-read them.
- Some notes you take during class will not seem clear to you later; you may have to ask someone about what was said at the time.
- Once again, make sure your notes are orderly and manageable; I have seen at least one example of unorganized notes, and unorganized notes are darn near useless.
The best you can be

- Please take five minutes to reflect and then write down what part of the classtime habits from Chapter 8 may do you the most good.
Chapter 9 – Retention strategies

- You see an example on the board, and at the time, it made sense to you
- You take notes on it, and go back to it three days later
- Will it still make sense, or will it be confusing?
- There is actually a physical action that occurs in your brain when you learn a new piece of information
- Repeating the action will strengthen that connection in your brain
- This is why the key to success in math is not “intelligence”, but in the approach you take to it
- Your brain nearly always makes the initial connection; but if it is not reinforced, it is likely the brain will lose it
Short term vs. Long term memory

- Many students like the ‘cramming’ method of studying hard immediately before an exam.
- Your short term memory, however, lasts for only 30 seconds.
- So, unless you can study up until the second the test is handed to you, and finish in 30 seconds or less, cramming is almost useless.
- What is available to you on a test is due to your long-term memory, which is only built by repetition.
Retention techniques

- Building good information retention techniques is the best solution for test anxiety
- The book gives examples of several memorization techniques and exercises of how they work
Note cards

- Build yourself a set of math note cards
- One subject per card
- On one side, write out the name of the theory; principle; property; etc. (ex. “Associative Property of Addition”)
- On the other side, write out the algebraic expression illustrating the concept (ex. \( a + (b + c) = (a + b) + c \))
- Not only does this organize your material, but it makes it easier for you to quiz yourself
- Do not overload the note card – only enter one small concept on each one (see pg. 66)
- Note cards meet the needs of all three learning styles
For next time

- Make 10 note cards based on the material in Chapter 2.1 and 2.2.
Learning maps

- This takes a big sheet of paper, like the kind you have on a easel
- First, make a rectangle in the middle of the paper with the title of the section on it
- Then, go to each sub-section, and put the title of each in a rectangle close to the center, and connect each to the center with a line
- Then, for each sub-section, draw new rectangles for each new formula, vocabulary word, and key concept, connecting them to the subsection rectangle
Work together in class

- Help me make a learning map for Section 2.2 on the whiteboard
In one of my classes, the teacher allowed us to have one small ‘cheat sheet’ for each test.

Of course, I would cram everything I possibly could think of onto this sheet.

BUT, the act of making this cheat sheet actually helped me learn the material, so by the time the test came, I didn’t have to use the sheet that much.

For next test, I will allow you to make one cheat sheet on one notecard (both sides). See if it doesn’t help you retain the material.
General study tips

- Tutoring centers – ask around, see if someone you know has been helped by a tutor, then find out who, where, and when they are available.

- Study groups – once again, I believe strongly in groups, they helped me in college more than anything else.

- Comprehensive approach – taking a course involves many things – homework, tests, online, getting to class.

- Pg. 73 – quote by Muhammad Ali – suffer now and live the rest of your life as a champion.
Word problems

- Translating English into Math is what stumps most people
- You may have to read it out loud
- You may have to draw a picture, line graph, or diagram
- It will most likely require more than one step; if so, you may have to outline those steps
- The old saying “It isn’t the destination, but the journey?”
- Yes, the point is to come up with an answer to the problem, but here in school, you are not getting paid for the answers
- You are here to practice the techniques, so pay close attention to the steps needed to solve word problems