

These tools are practical, simple, and directly tied to real-world use cases that can be built using **Math module**, **Strings**, **Simulation of do-while loop**, and **Simple Games**

Math Module (Tools)	String (Tools)	Simulation of Do-While Loop (Tools)	Simple Games
1. Square Root Calculator - Find square root of a number.	1. Word Counter - Count words in a given text.	1. Number Entry Validation - Keep asking for input until a valid number is entered.	1. Caesar Cipher - Encrypt and decrypt text using a simple shift cipher.
2. Area and Volume Calculator - Use <code>math.pi</code> for circles/spheres.	2. Reverse String Tool - Reverse any input string.	2. Password Input - Keep prompting for a correct password before proceeding.	2. Guess the Number Game - Guess a random number generated by the system.
3. Pythagorean Calculator - Find the hypotenuse of a triangle.	3. Palindrome Checker - Check if a string is a palindrome.	3. Menu Repeater - Keep displaying a menu until a user chooses "Exit".	3. Rock-Paper-Scissors - Play against the computer using random choices.
4. Logarithm Calculator - Calculate log base 10 and natural log.	4. Sentence Capitalizer - Convert input text to sentence case.	4. Retry Login Attempts - Allow user multiple login attempts.	4. Hangman Game - Guess letters of a word before running out of attempts.
5. Trigonometry Tool - Find sin, cos, and tan values.	5. Substring Finder - Check if a word exists in a sentence.	5. Shopping Cart Tool - Keep asking for items until "done" is typed.	5. Word Scramble - Scramble a word and ask the user to guess the original word.
6. Factorial Calculator - Calculate factorial using <code>math.factorial()</code> .	6. Character Counter - Count characters in a string.	6. Game Menu Simulation - Repeat game options until "quit" is selected.	6. Tic-Tac-Toe - Simple two-player version of the game using conditionals.
7. Power Calculator - Calculate exponentials (<code>math.pow</code>).	7. Vowel and Consonant Counter - Count vowels and consonants in a string.	7. Name Validator - Keep asking for a non-empty name input.	7. Snake Ladder Simulation - Use conditionals and random dice rolls to simulate progress.
8. Random Angles Generator - Generate random angles and find trig values.	8. Duplicate Remover - Remove duplicate words from a sentence.	8. Fuel Tracker - Prompt for fuel input until it exceeds a certain value.	8. Number Pyramid Game - Build a pyramid pattern with numbers or symbols.
9. Distance Between Two Points - Use <code>math.sqrt</code> for calculations.	9. Word Replacer - Replace one word with another in a string.	9. User Choice Validator - Keep asking for valid menu input (e.g., "y/n").	9. Maze Navigation - Simulate a simple maze where the user inputs directions.
10. Rounding Tool - Use <code>math.ceil()</code> and <code>math.floor()</code> to round numbers.	10. Name Initials Generator - Extract initials from a full name.	10. Score Entry System - Keep adding scores until a user types "stop".	10. Treasure Hunt - Follow clues with loops and conditions to find the treasure.
11. Random Triangle Generator - Create random triangle sides and validate using trigonometry.	11. Find Longest Word - Find the longest word in a sentence.	11. Order Confirmation - Confirm a purchase with "yes/no" until valid input is provided.	11. Anagram Checker - Verify if two words are anagrams of each other.
12. Degrees to Radians Converter - Convert between degrees and radians.	12. Word Frequency Counter - Count frequency of each word in text.	12. Food Order System - Repeat food selection until the user finishes.	12. Guess the Word - Reveal letters of a word one at a time until guessed correctly.
13. Temperature Conversion Tool - Use <code>math</code> for precise rounding.	13. Pangram Checker - Verify if a sentence contains all alphabets.	13. Shopping Cart Updater - Add/remove items until "finish" is selected.	13. Memory Game - Memorize and match pairs of words or numbers.
14. Statistics Tool - Calculate mean, median, or standard deviation.	14. Count Specific Characters - Count specific letters (e.g., "a") in a string.	14. Basic ATM Simulation - Keep asking for valid withdrawal amounts.	14. Simple Quiz Game - Ask questions and score correct answers.
15. Exponentiation Calculator - Use <code>math.exp()</code> for natural exponentials.	15. Remove Whitespace - Trim whitespace from input text.	15. Energy Consumption Logger - Keep entering values until a limit is reached.	15. Simon Says Game - Follow commands, fail if a wrong input is entered.
16. Random Shape Generator - Calculate area of random shapes (circle, square).	16. Acronym Generator - Generate acronyms from input phrases.	16. Number Adder - Keep asking for numbers until "done" is entered.	16. Simple Countdown Game - Count backward and stop when a condition is met.

Math Module (Tools)	String (Tools)	Simulation of Do-While Loop (Tools)	Simple Games
17. Financial Calculator - Use <code>math.log</code> for loan repayment time.	17. Find and Replace Tool - Find and replace multiple words in text.	17. Repeated Greeting - Keep printing a greeting until stopped.	17. Simple Typing Speed Game - Measure time taken to type a sentence.
18. Triangle Validator - Validate angles using trigonometric rules.	18. Title Case Converter - Convert text into title case.	18. Dice Roller Until Target - Roll dice until a target number appears.	18. Math Quiz Game - Ask arithmetic questions and check answers.
19. Scientific Calculator - Provide advanced calculations (<code>log</code> , <code>sqrt</code> , <code>sin</code>).	19. Letter Position Tool - Find the position of a letter in the alphabet.	19. Bank Account Tracker - Keep prompting until balance reaches a threshold.	19. Reverse Guess Game - The user thinks of a number; the system guesses.
20. Percentage Calculator - Calculate percentages of values.	20. Sentence Formatter - Format input text into paragraphs.	20. Temperature Logger - Keep entering temperature until a safe range is reached.	20. Text-Based Adventure - Navigate through a story with user input decisions.

Explanation:

- 1. **Math Module:** Tools involve mathematical operations such as square root calculations, trigonometric functions, and advanced calculations using `math` functions.
- 2. **String:** Tools focus on text manipulation tasks like reversing strings, counting characters, and formatting text.
- 3. **Simulation of Do-While Loop:** Tools involve repeating processes until a condition is met, mimicking a do-while loop behavior in Python.
- 4. **Simple Games:** These are basic games or activities built using **conditionals, loops, and strings** to teach interactive programming.