

Name: _____ Date: _____

Pizza Party Logic: Coding Concepts for 8th Grade

Build sharper algorithmic thinking by analyzing how variables, loops, and logic control real-world systems like digital kitchens and space probes.

1. A weather station uses the logic: 'IF high_wind AND heavy_rain THEN trigger_alarm'. Which condition would cause the alarm to sound?

- A. It is raining heavily but there is no wind.
- B. There are high winds but the sky is clear.
- C. Both high winds and heavy rain are detected.
- D. The temperature drops below freezing.

2. Imagine a variable 'fuelLevel' starts at 100. A function 'flyRocket()' subtracts 10 each time it is used. If 'flyRocket()' is called 4 times, what is the current value of 'fuelLevel'?

- A. 90
- B. 40
- C. 60
- D. 100

3. In programming, a function can only be used once per program execution.

- A. True
- B. False

4. Which of these is the most efficient way for a music app to display every song in a playlist of 500 tracks?

- A. Writing a unique 'print' line for every song title individually.
- B. Using a loop to iterate through the list of songs.
- C. Creating a separate function for every song name.
- D. Manually updating a variable for each track.

5. A smart thermostat is programmed to turn on the heater if 'temp < 68'. Which programming concept is being used here to make this decision?

- A. Initialization
- B. A conditional statement
- C. A constant
- D. Data typing

6. If you change the value of a variable halfway through a program, the program will still remember the original value it started with without being told to store it elsewhere.

- A. True
- B. False

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7. Why would a programmer use a 'parameter' inside a function, such as 'calculateTax(totalPrice)'?

- A. To hide the code from users.
- B. To make the function stop running immediately.
- C. To allow the function to use external data to perform its task.
- D. To rename the entire program.

8. You are building a game where a player jumps 10 times. To avoid writing 'jump()' ten times, you should use a _____.

- A. Variable
- B. Boolean
- C. For loop
- D. String

9. In an 'if-else' block, both the 'if' code and the 'else' code can execute at the exact same time for the same condition.

- A. True
- B. False

10. A robot vacuum cleaner continues to move until its 'batteryLow' sensor returns TRUE. This is an example of what kind of control structure?

- A. A while loop
- B. A constant variable
- C. An array
- D. A comment block