# 💻 Challenge Worksheet

## Project: Math Quiz Tournament

### Project Brief

You will design a **Math Quiz Tournament** in Python.

* The **user chooses** how many questions to try.
* For each question:
  + A math question is shown.
  + The user must keep guessing until they are correct.
  + If the user types **0**, that question ends immediately.
* At the end of the quiz, the program should show how many questions were answered correctly.

### Starter Scaffold Code (fill in the blanks)

print("Welcome to the Math Quiz Tournament")  
  
# Step 1: Ask how many questions  
rounds = int(input("How many questions would you like to try? "))  
  
score = 0  
  
# Step 2: For loop to go through each question  
for i in range(rounds):  
 print("Question number " + str(i+1))  
   
 # TODO: Write a maths question here (e.g. 3 + 4)  
 # TODO: Set the correct\_answer variable  
  
 answer = -1  
   
 # Step 3: While loop for repeated guesses  
 while answer != correct\_answer:  
 answer = int(input("Your answer (or 0 to quit): "))  
   
 # Step 4: Decisions with if / elif / else  
 if answer == correct\_answer:  
 print("Correct!")  
 score = score + 1  
 elif answer == 0:  
 print("Exiting this question")  
 break  
 else:  
 print("Try again")  
  
# Step 5: Summary  
print("Tournament over")  
print("Total questions: " + str(rounds))  
print("Correct answers: " + str(score))

### ✅ Success Criteria

* Uses a **for loop** to run multiple questions.
* Uses a **while loop** so the user repeats until correct.
* Uses **if / elif / else** to handle correct, incorrect, and quit.
* Prints a **summary** of results at the end.

### Reflection Questions

1. What part of the program uses a **for loop**, and why?
2. Why do we need a **while loop** for each question?
3. How does the **if / elif / else** give meaningful feedback?
4. If the user types 0 but there was no elif answer == 0, what would happen?

## ✅ Marking Rubric (24 Marks)

| Criteria | Excellent (4) | Good (3) | Satisfactory (2) | Needs Improvement (1) |
| --- | --- | --- | --- | --- |
| **For Loop** | Correctly controls number of questions | Mostly correct | Attempted but flawed | Absent |
| **While Loop** | Fully repeats until answer is correct | Works with small issues | Attempted but partly wrong | Missing |
| **If/Elif/Else** | Clear feedback for all cases | Most cases handled | Basic or limited feedback | Very limited/none |
| **Summary Output** | Complete and accurate | Includes most details | Partially shown | Missing |
| **Code Clarity** | Clear, indented, easy to follow | Mostly clear readable code | Understandable but messy | Very messy/unreadable |
| **Reflection** | Complete thoughtful answers | Mostly correct answers | Partial answers given | Little/no effort |

**Total: /24**

### ⚡ Extensions

* Add extra questions (subtraction, multiplication).
* Count how many **attempts** it takes per question.
* Give extra points for correct **on the first try**.