

Show all work clearly and in order, and circle your final answers. Justify your answers.

1) Explain what the following Python code does, and run a hand written simulation of the code:

```
kmh = int(raw_input("Enter km/h: "))
mph = 0.6214 * kmh
print "Speed:", kmh, "KM/H = ", mph, "MPH"
```

2) Explain what the following Python code does, and run a hand written simulation of the code for a student who has received a 87, 91, and 78 on their three midterms:

```
round1 = int(raw_input("Enter score for round 1: "))
round2 = int(raw_input("Enter score for round 2: "))
round3 = int(raw_input("Enter score for round 3: "))

# Calculate the average
average = (round1 + round2 + round3) / 3

# Print out the test score
print "the average score is: ", average
```

3) Explain what each line of the following code does and run a simulation of the code for $a = 2$ and $b = 6$.

```
a = int(input(Please input a lower bound: ))
b = int(input(Please input a upper bound: ))
count = 0
F = 0
G = 1
while count <= b:
    F = F + G
    G = F - G
    if count >= a:
        print (F, count, is , G)
        count = count + 1
    else:
        count = count + 1
```

4) Handwrite a Python code which will add the cubes of multiples of 3 starting at 6 up to $3n$. I.e., if you choose $n = 12$, the program should compute

$$6^3 + 9^3 + \cdots + 36^3.$$