Group #:
Name:

EOSC 211 – Week 6 – Practice with loops (3)

Write MATLAB code to solve the following problems

EXERCISE 1: The following code snippet is intended to cumulatively sum the values of some unspecified vector `y` (which contains integers) until the sum reaches 100. What might go wrong? *Hint: I found 2-3 problems or possible problems*.

```
i=1;
mysum=y(i);
while (mysum < 100)
    mysum = mysum + y(i)
    i=i+1;
end
disp(mysum)
```

EXERCISE 2: Evaluate the following series, ignoring all terms that are smaller than 0.0001. Include the value of the sum in the variable `total` and the number of terms in the variable `num`.

$$\frac{\pi}{8} \approx 1 + \sum_{i=1}^{\infty} \frac{1}{(1+2i)^2}$$

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EXERCISE 3: Given that `y=[19 23 6 15 32 17 29]` describe the difference between the three algorithms shown below. For each, what does `ynew` look like after the loop executes.

```
for i=1:length(y),
    if (y(i) > 20)
        ynew=y(i);
    end
end
```

```
for i=1:length(y),
    if (y(i) > 20)
        ynew(i)=y(i);
    end
end
```

```
j = 0;
for i=1:length(y),
    if (y(i) > 20
        j = j+1;
        ynew(j)=y(i);
    end
end
```

EXERCISE 4: Use a loop to evaluate the following series, including `N` terms:

`1 – 1/2 + 1/4 – 1/8 + 1/16 – 1/32 + ...`