

Name: \_\_\_\_\_

## EMSE 4571 / 6571: Quiz 5 (Q)

### Rules:

- Work alone; no outside help of any kind is allowed.
- No calculators, no notes, no books, no computers, no phones.

### 1. TRUE / FALSE: 30 points (15 each)

For each of the following statements, circle whether the statement is TRUE or FALSE:

a) **TRUE or FALSE:** The code below will print to the console the number 5

```
x <- 0
while(x < 5) {
  x <- x + 1
  if (x == 3) {
    next
  }
}
cat(x)
```

TRUE

b) **TRUE or FALSE:** When using `break` in a nested loops (e.g., a `for` loop inside another `for` loop), it will exit all loops simultaneously.

FALSE

### 2. Short answers: 40 points (20 each)

a) Write a while loop that will run infinitely.

```
while (TRUE) {}
```

b) Describe when you should use a `for` loop instead of a `while` loop.

When you know the number of iterations.

(Turn over for the remaining quiz questions)

### 3. Code tracing: 30 points

Consider the following function:

```
f <- function(x) {  
  total <- 0  
  for (i in seq(1, x)) {  
    if (i %% 2 == 0) {  
      cat('skip i =', i, '\n')  
      next  
    }  
    total <- total + i  
    if (total > 3) {  
      cat('break at i =', i, '\n')  
      break  
    }  
  }  
  cat('total =', total)  
}
```

After running the code below in R, write in the space below what will print in the console. Be careful to write any potential line breaks on new lines.

f(3)

```
skip i = 2  
break at i = 3  
total = 4
```