CPE390 Floating Point

Email if you have any questions!

I pledge my honor that I have abided by the Stevens Honor System

Turn audio ON

Time Remaining:

-1:57 Submit Quiz

1. Exact/Inexact (1 points) Click to report a problem

Which of the following numbers are exactly representable in floating point?

```
4.2                    inexact
.03125                 inexact
45.0 / 80              inexact
.09375                 inexact
523                    exact
double x = 3.0 / 9.0;  inexact
double y = 4 / 32.0;   inexact
double z = 20 / 100.0; inexact
```

2. Which of the following are true? (1 points) Click to report a problem

```
float x = 2.0f, y = 0.0002, z = 0.000002;
x + z + z  == z + z + x                    false
x + y == y + x                             true
x + y + y + y + y == y + y + y + y + x     false
bool b1 = 1.0f + 1.0e-9f == 1.0f;          true
bool b2 = 1.0 + 5.96e-15 > 1.0;            true
bool b3 = 1.0 + 9.0-20 > 1.0;              false
```

3. Which of the following are infinite loops? (1 points) Click to report a problem

```
for (float f = 1e8; f < 1e9; f++)
  ;                                        finite

for (float f = 0; f < 1e8; f *= 2)
  ;                                        infinite

for (float f = 1e5; f > 0; f -= 1e4)
  ;                                        finite

bool bisection(double a, double b, double target) {
  int count = 0;
  do {
    double guess = (a + b) / 2;
    if (guess > target)
      b = guess;
```

```
      else if (guess < target)
        a = guess;
      count++;
    while (guess != target);
    return count;
}
```

infinite

```
Example bisection (1.0, 3.5, .000071927)
---
```

Time Remaining: -1:57 Submit Quiz