# CMSC 131

Fall 2018

# Announcements

- Project #1 (Orioles Baseball) due Sunday

# Computers are Fast!

FastArithmetic.java

# Stopping an Infinite Loop!

Eclipse Demo…

# Nested Loops

Examples:
   GuessingGame.java
   Rectangle.java
   Stripes.java

# One Example, 3 Techniques

User enters a size.  For size 5, print:

```
XOOOO
XXOOO
XXXOO
XXXXO
XXXXX
```

1. Using a "formula" to compute number of O's on current row
2. Maintaining a variable for number of O's on current row
3. Using a comparison to decide whether to print X or O

# Increment Operator

- Some expressions carry a "value"
- Some expressions have "side effect(s)"

- These three expressions have the same *side effect:*

  ```
  x = x + 1
  x++
  ++x
  ```

- x++ and ++x carry different *values.*

# Self-Test

```
int a = 7;
int b = a++ + 4;
int c = ++a - 3;
```

After this code runs, what are the values of `a`, `b`, and `c`?

# Decrement Operator

- These three expressions have the same *side effect:*

```
x = x - 1
x--
--x
```

- `x--` and `--x` carry different *values.*