# CSE142 Final Exam Cheat Sheet

| Math Method | Description |
| --- | --- |
| Math.abs(n) | absolute value of n |
| Math.max(x, y) | maximum of x and y |
| Math.min(x, y) | minimum of x and y |

| Scanner Method | Description |
| --- | --- |
| next() | returns the next token as a string |
| nextInt() | returns the next token as an integer |
| nextDouble() | returns the next token as a double |
| nextLine() | returns the next line (does not include newline character) |
| hasNext(), hasNextInt(), hasNextDouble(), hasNextLine() | returns whether the stream has left a String, integer, double, or line respectively |

| Random Method | Description |
| --- | --- |
| nextInt(n) | returns a random number between 0 (inclusive) and n (exclusive) |

| String Method | Description |
| --- | --- |
| charAt(index) | character at a specific index |
| endsWith(String) | whether the string ends with the parameter string |
| equals(String) | whether the string is equal to the parameter string |
| equalsIgnoreCase(String) | like equals(String) but ignores case-sensitivity |
| indexOf(text) | index of a particular string (-1 if not found) |
| length() | number of characters in the string |
| startsWith(String) | whether the string starts with the parameter string |
| substring(start, stop) | characters from start (inclusive) to stop (exclusive) |
| substring(start) | characters from start (inclusive) to end of string |
| toLowerCase() | lowercase version of string |
| toUpperCase() | uppercase version of string |

| Critter Method | Description |
| --- | --- |
| Action getMove(CritterInfo info) | this Critter's next move (one of Action.HOP, Action.LEFT Action.RIGHT, Action.INFECT) |
| String toString() | text to display for this critter |
| Color getColor() | color to use for this critter (e.g., Color.BLUE) |

| CritterInfo Method | Description |
| --- | --- |
| getFront(), getBack(), getLeft(), getRight() | returns what kind of critters are around a critter (one of Neighbor.WALL, Neighbor.EMPTY, Neighbor.SAME, Neighbor.OTHER) |
| getDirection() | returns what direction a critter is facing (one of Direction.NORTH, Direction.SOUTH, Direction.EAST, Direction.WEST) |

| Arrays Method | Description |
| --- | --- |
| Arrays.equals(array1, array2) | returns true if the two arrays contain same elements in the same order |
| Arrays.sort(array) | arranges the elements into sorted order |
| Arrays.toString(array) | returns a String representation the array, such as "[10, 30, -25]" |

**Syntax Examples:**

```
for (int i = 1; i <= n; i++) {
    System.out.println("****");
}

if (n < 0) {
    System.out.print("negative");
} else {
    System.out.print("not negative");
}
```

```
if (n < 0) {
    System.out.print("negative");
}

while (n < 200) {
    n = n * 2;
}
```