These questions similar to those that might appear on a CMPT 166 midterm or final.

## **If-statements**

- 1. (5 marks) Assume that a and b are both variables of type float that have already been assigned values (but you don't know what those values are). For each of the following questions, write a boolean expression in the box that makes the if-statement do what is requested.
  - a) Draws a circle just when a and b have the same value.

b) Draws a circle just when a and b have different values.

c) Draws a circle just when a is one more than b.

d) Draws a circle just when a is 2, and b is greater than a.

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e) Draws a circle just when a is 7 or b is 5.

```
if ( a == 7 | b == 5 ) {
   ellipse(250, 250, 100, 100);
}
```

2. (5 marks) In the following questions, assume that x is 3 and y is 4. For each question, write in the box the word that gets printed (either "frog" or "tiger").

```
a) if (x == 3 \&\& y != 4) {
                                 frog
    print("tiger");
  } else {
    print("frog");
  }
b) if (x \le 3 | | y != 4) {
    print("tiger");
                                 tiger
  } else {
    print("frog");
  }
c) if (!(x < 3 \&\& y > 4)) {
    print("tiger");
                                 tiger
  } else {
    print("frog");
  }
d) if (!(x != y)) {
    print("tiger");
                                frog
  } else {
    print("frog");
  }
e) if (!!(x < y)) {
    print("tiger");
                                tiger
  } else {
    print("frog");
  }
```

## **Color Mapping**

(5 marks) Suppose the screen is 400-by-400 pixels. Write a call to Processing's map function that maps mousex to the range [100, 300].

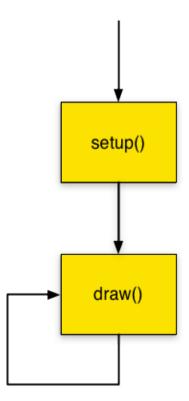
Solution map(mouseX, 0, 399, 100, 300)

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## **Processing Flow Chart**

Draw a flow chart that shows when Processing's setup() and draw() functions are called. Draw it as neatly as possible, and be sure that all the arrows and boxes are clear.

## **Solution**



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