

# Test of the Stars -- The CS 120 Final

0) Is your name on the test?

- a) Yes it is.
- b) Yes it will be.
- c) No I don't want credit for this test.
- d) I'm so nervous I forgot my name.

1) How many times does this loop draw a rectangle?

```
int i = 1;
while (i < 10) {
    g.drawRect(10*i, 10*i, 3, 3);
    i=i*4 - 1;
}
```

2) Does the loop above draw rectangles ...

- a) Horizontally
- b) Vertically
- c) Diagonally
- d) None of the above

3 and 4) Assume  $x = 100$  and  $y = 200$ . Which of these Boolean expressions is true?

Circle all that apply

- a)  $(x < 100)$
- b)  $(x \leq 100 \ \&\& \ y > 9000)$
- c)  $(x < 1000000 \ \|\ y < 1000)$
- d)  $(y > 1)$
- e)  $(y < 100-200+300)$
- f)  $(x == 100 \ \|\ (x == 200 \ \&\& \ y == 200))$

5) How many times does this loop draw a circle?

```
int i = 100;
for(i = 1; i < 10; i++) {
    g.drawOval(i*10, i*20, 3, 3);
}
```

6) What is the value of 'j' when this code is finished?

```
int i = 0, j = 0;
for(i = 0; i < 3; i++) {
    j = j + 10;
}
```

7) How many times does this code say "hi"?

```
for(int i = 10; i > 1; i++) {
    g.drawString("Hi", 100, i+10);
}
```

8) Does the loop above place the words "Hi" ...

- a) Horizontally in a line
- b) Vertically in a line
- c) Diagonally in a line
- d) None of the above

9) I'm writing the class Worm. Which of these might be it's constructor? (Circle all that could work.)

- a) public void Worm(int x, int y) { ..code..}
- b) public boolean Worm() { ..code..}
- c) public constructor(int x, int y, Color newColor)
- d) None of these lousy answers

10) What is the second argument to drawOval()?

- a) The graphic 'g'.
- b) The height
- c) The width
- d) The error code
- e) None of these lousy answers

11) Which of these prints the value of the integer variable 'i'?

- a) g.drawString("i", 10, 10);
- b) g.drawString("" , i, 10);
- c) g.drawString(""+i, 10, 10);
- d) g.drawString( i, 10, 10);
- e) None of these lame answers

12) How many circles does this code draw?

```
for(int i = 0; i < 5; i++) {  
    for(j = 0; j < 6; j++) {  
        g.fillOval(i*20, j*20, 6, 6);  
    }  
}
```

13) Where is the **center** of the first circle drawn by the code above?

14) Which method runs first? (Choose exactly one.)

- The init of the main class
- The paint of the main class.
- The mouseClicked of the main class.

15) Except for the US, Canada and England, name any country that speaks English.

16) Suppose I allocate an array as shown below. How many elements does it have?

```
question16 = new int[10];
```

- a) 1
- b) 2
- c) 200
- d) 20
- e) 10
- f) None of the above

Choose either program 1 or 2, and show me it running.  
Choose either program 3 or 4, and show me it running.

**Program 1: The Number Line (5 points)**

Shows a number line: 2 points  
Tells you "hot if you're within 3, or cold otherwise": 2 points  
Tells when you find the magic spot: 1 point

**Program 2: The Keyboard (6 points)**

Tells the last key pressed: 2 point  
Tells the last and the previous key pressed: 1 point  
Tells the number of keystrokes ever pressed: 1 point  
Resets the count when you press the '0' (zero) key: 2 point

**Program 3: Star Burst (8 points)**

Draws eight boxes on the screen (1 point)  
Keeps track in an array of how many clicks in each (3 points)  
Says "The Smallest box is = XXX" (2 points)  
Can clear the boxes to zero somehow (2 points)

**Program 4: Grades (6 points)**

Write a program that has an array containing the grades 42,63,97,12,45,91: 2 points  
Draw the array on the screen: 1 point  
Write code to determine the number of 'A's: 1 point  
Write code to determine the number of 'B's: 2 points