_____ 1. For what range of values of the variable x would the body of this Processing for statement be executed?

```
for (int x = 0; x < 20; x++) {
     println(x);
}
```

A) 0 to 20
B) 1 to 20
C) 0 to 19
D) 0 to 21
E) None of these

_____ 1. For what range of values of the variable x would the body of this Processing for statement be executed?

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     println(x);
}
```

A) 0 to 20
B) 1 to 20
C) 0 to 19
D) 0 to 21
E) None of these

x starts at 0 but must be less than 20, so the answer is C.

_____ 2. How many circles are drawn by this code?

```
for (int x = 90; x <= 10; x = x - 10) {
     ellipse( x, 100, 5, 5);
}
```

A) 0
B) 1
C) 9
D) 10
E) None of these

_____ 2. How many circles are drawn by this code?

```
for (int x = 90; x <= 10; x = x - 10) {
    ellipse( x, 100, 5, 5);
}
```

A) 0
B) 1
C) 9
D) 10
E) None of these

x starts at 90, but the condition is that x must be less than or equal to 10. No circles are drawn! Answer is A.

1. Write a `for` loop in Processing that prints all of the multiples of 7 from 49 up to 777 on separate lines in the Console. /* 4 points */

1. Write a `for` loop in Processing that prints all of the multiples of 7 from 49 up to 777 on separate lines in the Console. /* 4 points */

```
for (int i = 49; i <= 777; i += 7) {
  println(i);
}
```

```
49
56
63
70
77
84
91
98
105
112
119
126
133
140
147
```

2. Explain, on each given line, what Processing is doing in the following code. /*3 points*/

```
for (int k = 1; k <= 3; k++) {  ____________________________________
     println("hi"); ____________________________________
     println("bye"); ____________________________________
}
println( "done" ); ____________________________
```

2. Explain, on each given line, what Processing is doing in the following code. /*3 points*/

```
for (int k = 1; k <= 3; k++) {  _____________________________________
    println("hi"); _____________________________________
    println("bye"); _____________________________________
}
println( "done" ); _____________________________
```

Blank 1: starts k at 1, tests to make sure k is less than or equal to 3, adds 1 to k

Blank 2: prints out “hi” each time the loop runs and forces a new line afterwards

Blank 3: prints out “bye” each time the loop runs and forces a new line afterwards

Blank 4: prints out “done” once the for loop has completed and forces a new line afterwards

3. Fill in the blanks in this Processing code so that it prints the following table in the Console: /* 5 points */ Hints: "\t" is the tab character – it's how we can get the inches column to line up after printing yards. Your code will include every row, not the ". . ."

Yards	Inches
1	36
2	72
3	108
.	
.	
.	
10	360

```
int yards, inches;
println("Yards \t Inches");
for (_____________ ; _____________;_____________) {
_____________________________________________;
print( yards );
print( "\t");
println(inches);
}
```

sketch_220202a

```
1 int yards, inches;
2 println("Yards \t Inches");
3 for(yards=1; yards <= 10; yards++) {
4   inches = yards * 36;
5   print(yards);
6   print("\t");
7   println(inches);
8 }
```

```
Yards   Inches
1       36
2       72
3       108
4       144
5       180
6       216
7       252
8       288
9       324
10      360
```

4. Explain, on each given line, what Processing is doing in the following code. /*9 points*/

```
size(300, 300);
background(255);
stroke(0);


  int x = 0; _____________________________________________

  for (int c = 255; c > 0; c -= 15) { _____________________________________

   fill(c);_____________________________________

   rect(x, height/2, 10, 10); _____________________________________

   x = x + 10;_____________________________________

  } _____________________________________
```

```
int x = 0; // initializes integer variable x to 0

for (int c = 255; c > 0; c -= 15) { /* initializes int variable c to 255, tests if
c is greater than 0, and updates the value of c to c-15 */

fill(c); /* sets the fill color to the value of c (recall that codes between 0-255
are grayscale, 0 being black and 255 being white) */

rect(x, height/2, 10, 10); /* draws a rectangle starting at (x, height/2) with
width and height of 10 */

x = x + 10; // updates the value of x to x + 10 each time the loop runs

} // closes the for loop
```