

- 1: 1) Loops are used to repeat blocks of code.
- 2: 2) We have for loops and while loops.
- 3: 3) The following code repeatedly asks the user for input until the user provides a number
- 4: greater than 0.

5: 4)

```
6:      a      x      k
7:      0      0      0
8:      2      20     40
9:      4      40     80
10:     6      60    120
11:     8      80    160
```

12:
13: It draws a set of rectangles that are 5px in width, with the starting
14: points 10px apart. The length of each bar increases.

- 15: 5)
- 16: Initially this was suppose to draw a checkerboard,
 - 17: But I forgot the brackets in xIdx+yIdx%2. So, it draws a 2 blue squares
 - 18: and blacks squares everywhere else.
 - 19: Note: I will accept both answers, answers for both version is shown below.

20:
21: The the Code:

```
22:
23: var color;
24: for(var yIdx = 0; yIdx < 4; yIdx = yIdx + 1){
25:     for(var xIdx = 0; xIdx < 4; xIdx = xIdx + 1){
26:         if(xIdx+yIdx % 2 ===0){
27:             color = "blue";
28:         } else {
29:             color = "black";
30:         }
31:         var xoffset = xIdx *10;
32:         var yoffset = yIdx *10;
33:         ctx.fillStyle = color;
34:         ctx.fillRect(xoffset,yoffset,10,10);
35:     }
36: }
```

37: The correct version

```
38:     xIdx yIdx xoffset yoffset color
39:     0    0    0        0    blue
40:     1    0    10       0    black
41:     2    0    20       0    black
42:     3    0    30       0    black
43:     0    1    0        10   black
44:     1    1    10       10   black
45:     2    1    20       10   black
46:     3    1    30       10   black
47:     0    2    0        20   blue
48:     1    2    10       20   black
```


97: //loop through the code to examine how the code changes.

98:

99: It will display as a pyramid in HTML:

100: *

101: **

102: ***

103: ****

104: *****

105: *****

106: *****

107: *****

108: *****

109: *****