

1) R4.1

a) *
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b) =====
*=====
**=====
***=====
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c) Infinitely outputs *****

2) R4.4

a) `int n = 100;
int i = 0;
while(i * i < n){
 System.out.print(i * i + " ");
 i++;
}
System.out.println();`

b) `int n = 100;
int i = 0;
while(i < n){
 if(i % 10 == 0){
 System.out.print(i + " ");
 }
 i++;
}
System.out.println();`

c) `int n = 100;
int i = 1;

while(i < n){
 System.out.print(i + " ");
 i *= 2;
}
System.out.println();`

3) R4.8

a) An infinite loop is a loop that never reaches its terminating condition. It can be terminated usually by pressing CTR-C or CTRL-Z or closing the terminal

4) R4.10

a) An error in a program that occurs when an index is unintentionally one off. I have had an off-by-one error while iterating through an array

5) R4.11

- a) A sentinel value is a variable that determines the condition when a loop ends. An example would be having a boolean variable that is true when a game is in progress and false when its not.

6) R4.19

- a) $s = 1.0 / (1 + n * n);$
while($s > 0.01$) {
 $n++;$
 $x = x + 5;$
}