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Homework 2

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```
//1a
int count = 0;
while (count * count < n) {
    System.out.println(count * count);
    count++;
}

//1b
int divByTen = 1;
while (divByTen < n) {
    if (divByTen % 10 == 0) {
        System.out.println(divByTen);
    }
    divByTen++;
}

//1c
int powTwo = 0;
while (Math.pow(2, powTwo) < n) {
    System.out.println((int) Math.pow(2, powTwo));
    powTwo++;
}
```

1)

2) a)

Statement	Variable values
	$i=0$ $j=10$ $n=0$
$while(i < j)$	$i=0$ 1 2 3 4 $j=10$ 9 8 7 6 $n=0$ 1 2 3 4
$i++$	$i=1$ 2 3 4 5 $j=10$ 9 8 7 6 $n=0$ 1 2 3 4
$j--$	$i=$ $j=9$ 8 7 6 5 $n=0$ 1 2 3 4
$n++$	$i=1$ 2 3 4 5 $j=9$ 8 7 6 5 $n=1$ 2 3 4 5
3	$i=5$ $j=5$ $n=5$

2)

Statement	Variable values
	$i=0$ $j=0$ $n=0$
while( $i < n$ )	$i=0$ 1 2 3 4 5 6 7 8 9 $j=0$ 1 2 3 4 5 6 7 8 9 $n=0$ 1 2 3 4 5 6 7 8 9
$i++$	$i=1$ 2 3 4 5 6 7 8 9 $j=0$ 1 2 3 4 5 6 7 8 $n=0$ 1 2 3 4 5 6 7 8 9
$n = n + i + j$	$i=1$ 2 3 4 5 6 7 8 9 $j=0$ 1 2 3 4 5 6 7 8 $n=1$ 2 3 4 5 6 7 8 9
$j++$	$i=1$ 2 3 4 5 6 7 8 9 $j=1$ 2 3 4 5 6 7 8 9 $n=1$ 2 3 4 5 6 7 8 9
3	$i=9$ $j=9$ $n=8$

Statement	Variable values
	$i = 10$ 9 8 7 6 5 4 3 2 1
	$j = 0$
	$n = 0$
while( $i > 0$ ) {	
	$i = 10$ 9 8 7 6 5 4 3 2 1
	$j = 0$ 1 2 3 4 5 6 7 8
	$n = 0$ 8 14 20 26 32 38 44 50
$i--$	$i = 9$ 8 7 6 5 4 3 2 1
	$j = 0$ 1 2 3 4 5 6 7 8
	$n = 0$ 8 14 20 26 32 38 44 50
$j++$	$i = 9$ 8 7 6 5 4 3 2 1
	$j = 1$ 2 3 4 5 6 7 8 9
	$n = 0$ 8 14 20 26 32 38 44 50
$n = n + i - j$	$i = 9$ 8 7 6 5 4 3 2 1
	$j = 1$ 2 3 4 5 6 7 8 9
	$n = 8$ 14 20 26 32 38 44 50
}	$i = 1$
	$j = 9$
	$n = 2$



statement	variable values
	i=0 j=10 n=0
while(i!=j) {	
	i=2 4 6 8 j=10 8 6 4 2 n=0 1 2 3 4
i=i+2	
	i=2 4 6 8 10 j=10 8 6 4 2 n=0 1 2 3 4
j=j-2	
	i=2 4 6 8 10 j=10 8 6 4 2 0 n=0 1 2 3 4
n++	
	i=2 4 6 8 10 j=10 8 6 4 2 0 n=1 2 3 4 5
}	
3	Infinite Loop

  

e)	i=3 j=4 n=0
while(i!=0) {	
	i=3 2 1 j=4 3 2 n=0 1 2
n+=j	
	i=3 2 1 j=4 3 2 n=4 8 12
i--	
	i=2 1 0 j=4 3 2 n=4 8 12
}	
3	i=0 j=4 n=12

```
//3
int i = 1, s = 0;
while (i<=10) {
    s = s + 1;
    i++;
}
3)
```

```

//4
int count1 = 0;
double temp = 0;
while (count1 < n+1) {
    temp = ((Math.pow(-1, count1)) / (2 * count1 + 1));
}
4) pi = 4 * temp;

```

```

//5
int sum = 0;
for (int i1 = 1; i1 < n+1; i1++) {
    if (i1 * i1 < areaBound) {
        for (int j = 1; j < n+1; j++) {
            if (j * j < areaBound) {
                sum = sum + (i1*i1 + j*j);
            }
        }
    }
}
5) }

```