Section 8: Loops

Exercise Solutions:

1) Describe what the while-loop below does. Then rewrite the code segment using a for-loop.

```
int pos = 0;
while( pos < min(width,height) ) {
   rect(pos, pos, 50, 50);
   pos = pos + 50;
}
```

This code draws a diagonal line of squares of size 50 across the drawing canvas starting from the upper-left corner.

```
for(int pos = 0; pos < min(width,height); pos = pos + 50) {
   rect(pos, pos, 50, 50);
}
```

2) Complete the while-loop below to find the **smallest power of 3 greater than 100**. Your answer should be stored in the variable `answer` *after* the loop has executed:

```
int answer = 1;    // 1 is 3 to the zeroth power

while( answer <= 100 ) {

   answer = answer * 3;

}
```

3) Complete the for-loop below that calculates the **sum of all *even* integers from 50 to 100, inclusive**. Your answer should be stored in the variable `sum` *after* the loop has executed:

```
int sum = 0;

for( int i = 50; i <= 100; i = i + 2 ) {

   sum = sum + i;

}
```