Main_5

Part a.

The lengths of the squares are 39, 93 inclusive.

To find the area of these numbers we must use the equation a^2.

$b = 39, 40, 41...92, 93$

let B = the sum of positive EVEN integers from 39, 93 inclusive.

b =sum of **positive EVEN** integers between 39, 93 inclusive

$b = 40, 42, 44...90, 92$

$b = (39, 40, 41...92, 93) - 2(20, 22, 24...45, 46)$

$B = 2[(1 + 2 + 3 + ... + 45 + 46) - (1 + 2 + 3 + ... + 18 + 19)]$

$b = 2\left[\frac{46 \times 47}{2} - \frac{19 \times 20}{2}\right]$

$b = 2[(23 \times 47) - (19 \times 10)]$

$b = 2[(47 \times (20 + 3)) - 190]$

$b = 2[(940 + 141)) - 190]$

$b = 2[1081 - 190]$

$b = 2[1081 - 190]$

$b = 2[891]$

$b = 1782$

The above is the sum of one LENGTH of each square.

To find the total length of wire used for all even squares we must multiply this by 4(a square has 4 equal sides)

$totalLength = 1782 \times 4 = 7128$

Part b.

```
PROGRAM SUM_SQUARES
BEGIN

control <- 39
sum <- 0

WHILE control <= 93 DO
  IF control MOD 2 != 0
    sum <- sum + control
  END IF
  control <- control + 1
END WHILE

PRINT "The sum of the lengths of the discarded square wires (odd lengths from 39 to 93 inclusive) is: " sum *4
END
```