SQUARE ROOT

import java.util.Scanner;

class square{

public static int sqrt(int x) {

if (x < 0) {

throw new IllegalArgumentException("Cannot calculate square root of negative number.");

}

if (x == 0) {

return 0;

}

int left = 1;

int right = x;

while (left <= right) {

int mid = left + (right - left) / 2;

if (mid > x / mid) {

right = mid - 1;

} else {

left = mid + 1;

}

}

return right;

}