1) (6 points)
```
Scanner scan = new Scanner(System.in);
System.out.println("Enter an integer:");
x = scan.nextInt();
```

2) (5 points)
```
System.out.println(Math.sqrt(2));
```

3) (6 points)
```
int[] a = {17, 17, 17, 17};
```

4) (6 points)
```
for (int i=a.length-1; i>=0; i--)
  System.out.println(a[i]);
```

5) (5 points)
```
Random rand = new Random();
System.out.println(rand.nextInt(10) + 1);
```

6) (12 points)
```
Random rand = new Random();
int x = rand.nextInt(10) + 1;
int y = rand.nextInt(10) + 1;
if (y > x)
  x = y;
y = rand.nextInt(10) + 1;
if (y > x)
  x = y;
System.out.println(x);
```

7) (4 points each)
   a) if (x >= 10 && x <= 20)
      System.out.println("x is in the interval");
   else
      System.out.println("x is not in the interval");
   b) if (x >= 10 && x <= 20)
      System.out.println("x is in the interval");
   c) if (x < 10 || x > 20)
      System.out.println("x is not in the interval");

8) (6 points)
```
int sum = 0;
if (a.length == 0)
  System.out.println("The array is empty");
else {
  for (int i=0; i<a.length; i++)
    sum = sum + a[i];
  System.out.println((double)sum/a.length);
}
```

9) (2 points each)
   a) 4   b) 2.6   c) 10.67   d) 4 + 19.0/3 = 10.33   e) 1   f) 2 + 3.8 = 5.8

10) public static double lightBulbCpst(int watts) {
    if (watts < 40)
      return 1.35;
    if (watts < 60)
      return 0.85;
    if (watts <= 100)
      return 1.50;
    return 2.00;
}

11) (5 points) If the array has length 0, return -1. Otherwise return a position of the smallest value stored in the array.

12) (10 points)
   a) public static int readSome() {
      Scanner scan = new Scanner(System.in);
      int last = scan.nextInt();
      int next;
      if (last < 0)
        return -1;
      next = scan.nextInt();
      while (next >= 0) {
        last = next;
        next = scan.nextInt();
      }
      return last;
   }
   b) It would crash with an exception thrown. To solve the problem, before reading an integer execute:
      while (!scan.hasNextInt())
        scan.next();