

Examples:

| if a is | return | reason |
|------------------|--------|--|
| {9, 0, 2, -5, 7} | 2 | The square pairs are <2, 7> and <7, 9>. Note that <-5, 9> and <0, 9> are not square pairs, even though they sum to perfect squares, because both members of a square pair have to be greater than 0. Also <7,2> and <9,7> are not square pairs because the first number has to be less than the second number. |
| {9} | 0 | The array must have at least 2 elements |

2. A **prime number** is an integer that is divisible only by 1 and itself. A **porcupine number** is a prime number whose last digit is 9 and the next prime number that follows it also ends with the digit 9. For example 139 is a porcupine number because:

a. it is prime

b. it ends in a 9

c. The next prime number after it is 149 which also ends in 9. Note that 140, 141, 142, 143, 144, 145, 146, 147 and 148 are **not** prime so 149 is the next prime number after 139.

Write a method named *findPorcupineNumber* which takes an integer argument *n* and returns the first porcupine number **that is greater than *n***. So *findPorcupineNumber*(0) would return 139 (because 139 happens to be the first porcupine number) and so would *findPorcupineNumber*(138). But *findPorcupineNumber*(139) would return 409 which is the second porcupine number.

The function signature is

```
int findPorcupineNumber(int n)
```

You may assume that a porcupine number greater than *n* exists.

You may assume that a function *isPrime* exists that returns 1 if its argument is prime, otherwise it returns 0. E.G., *isPrime*(7) returns 1 and *isPrime*(8) returns 0.

Hint: Use modulo base 10 arithmetic to get last digit of a number.

3. Consider the following algorithm

*Start with a positive number *n**

*if *n* is even then divide by 2*