Strings to Integer (atoi)

The algorithm for myAtoi(string s)

① Read in and ignore any leading whitespace (use replace)

② Check if the next character is '-' or '+'

③ Read in next the characters until the next non-digit character or the end of the input is reached. The rest of the string is ignored

④ Convert these digits into an integer ("0032" → 32)

⑤ If the integer is out of the 32-bit signed integer range $[-2^{31}, 2^{31}-1]$, then clamp the integer.

My solution:

```
                    6              6          0                4
                    ↓              ↓          ↓                ↓                 ↓
ex) s = "words and 987",  "      -42"      "42"  ,  "      +0  123   "  ,  "+-12"
         012345678910                       01          01234                    012
```

① Get index where digit begins (use re, i = re.search(r"\d", s) : Time : O(n)

② check if i == None : return 0

③ else i = i.start()

```
④ if i ≠ 0 and s[i-1] not in ['-', '+'] : return 0
  elif i ≠ 0 and s[i-1] in ['-', '+'] : sign = -1 if s[i-1] == '-' else +1

⑤ for ind in range(i, len(s)):
       if s[ind].isdigit():
           res += s[ind]
       else:
           break
```

Answer:

① i, sign, res = 0, 1, ""

② find where " " stops.

```
   for i in range(0, len(s)):
       if s[i] == " ": i+=1
       else break
```

③ check s[i] is + or -, if yes i = i+1

④ check in while loop.