QUE 1

```
import re

def is_valid_string(input_string):
    pattern = r'^[a-zA-Z0-9]+$'
    return re.match(pattern, input_string) is not None

test_strings = ["Hello123", "AbCdEf", "12345", "Hello_World", "Special$Chars"]
for test_string in test_strings:
    if is_valid_string(test_string):
        print(f"'{test_string}' is valid.")
    else:
        print(f"'{test_string}' is not valid.")
```

QUE 2

```
import re

pattern = r'ab*'

test_strings = ["a", "ab", "abb", "abbb", "ac", "b", "abc"]
for test_string in test_strings:
    if re.match(pattern, test_string):
        print(f"'{test_string}' matches the pattern.")
    else:
        print(f"'{test_string}' does not match the pattern.")
```

QUE 3

```
import re

pattern = r'ab*'

test_strings = ["a", "ab", "abb", "abbb", "ac", "b", "abc"]
for test_string in test_strings:
    if re.match(pattern, test_string):
        print(f"'{test_string}' matches the pattern.")
    else:
        print(f"'{test_string}' does not match the pattern.")
```

QUE 5

```
import re

pattern = r'ab+'

test_strings = ["a", "ab", "abb", "abbb", "ac", "b", "abc"]
for test_string in test_strings:
    if re.match(pattern, test_string):
        print(f"'{test_string}' matches the pattern.")
    else:
        print(f"'{test_string}' does not match the pattern.")
```

QUE 4

```
import re

pattern = r'abbb'

test_strings = ["abbb", "aabb", "aaabbb", "abb", "abc"]
for test_string in test_strings:
    if re.search(pattern, test_string):
        print(f"'{test_string}' matches the pattern.")
    else:
        print(f"'{test_string}' does not match the pattern.")
```

QUE 6

```
import re

pattern = r'ab?'

test_strings = ["a", "ab", "abb", "ac", "abc"]
for test_string in test_strings:
    if re.search(pattern, test_string):
        print(f"'{test_string}' matches the pattern.")
    else:
        print(f"'{test_string}' does not match the pattern.")
```

QUE 7

```
import re

pattern = r'ab{2,3}'

test_strings = ["abb", "abbb", "aabb", "abbbb", "a", "abc"]
for test_string in test_strings:
    if re.search(pattern, test_string):
        print(f"'{test_string}' matches the pattern.")
    else:
        print(f"'{test_string}' does not match the pattern.")
```

QUE 8

```
import re

pattern = r'^a.*b$'

test_strings = ["a", "ab", "acdb", "abcd", "axby", "acb", "bb"]
for test_string in test_strings:
    if re.match(pattern, test_string):
        print(f"'{test_string}' matches the pattern.")
    else:
        print(f"'{test_string}' does not match the pattern.")
```

QUE 9

```
import re

word_to_match = "banana"
pattern = fr'{re.escape(word_to_match)}$'

test_strings = ["banana", "bananabread", "splitbanana", "applebanana"]
for test_string in test_strings:
    if re.search(pattern, test_string):
        print(f"'{test_string}' matches the pattern.")
    else:
        print(f"'{test_string}' does not match the pattern.")
```

QUE 10

```
import re

sample_text = '01 0132 231875 1458 301 2725.'
pattern = r'\b\d{4}\b'

matches = re.findall(pattern, sample_text)
print(matches)
```