Extra Practice Q - T2

Q1 Phone number detection

Create a regex that finds phone number in both formats:

1. 123-456-7890
2. (123) 456 7890

Q2 Password Generator 2

Define a function `password_gen_2()` that produces a valid password of length 10. A valid password must:

- Be created at random
- Consist of the following elements:
  1. at least one vowel letter `"a, e, i, o, u"` in lower case
  2. at least one letter in `"X, Y, Z"` in upper case
  3. at least 4 numbers between 0 and 9 (both inclusive)
  4. exactly two special characters in `"_$!?"`
- Comply with the following additional rules:
  1. every vowel letter in lower case must be immediately followed by an upper case letter
  2. at least one of the numbers must be preceded by a special character
  3. the total of all digits in the password should sum up to a perfect square

In two separate cells, run the function and create two valid passwords.

Note: remember to use `random` and `string`

Q3 Fraction to Decimal

Define a function `fraction_to_decimal(s)` which takes a string of fractions separated by comma as input, and return the decimal representation of the fraction in a list, rounded to 2 decimal places.

Examples:
`fraction = "1/2,1/3,2/5"`: `answer = [0.5, 0.33, 0.4]`
`fraction = "-1/4,3/-7,2/10"`: `answer = [-0.25, -0.43, 0.2]`

In three seperate cells, run the function on the following strings:

1. `"2/7,3/11,1/1"`
2. `"-16/3,5/3.5"`
3. `"72/7,123/374,66/-9,0.25/4.375"`

Note: beware of the negative sign and decimals