```python
import math
import random
from textblob import TextBlob
from colorama import Fore
from
getkey import getkey, key
from replit import audio
import time

name =
"Stranger"

open=[
  "Good day mate! What's up?",
  'Hi, how are you
today?',
  "Yo what's up bro?",
  'Hello, how is everything
going?',
]
bro=['bro', 'mate', 'my friend',]
gadj=['epic', 'cool', 'cool', 'cute',
'sweet']
blank=[' ', '!', '?']
vowels=['a', 'e', 'i', 'o', 'u']
good = ['n amazing', '
great', 'n awesome', ' good', '
fine']

b=Fore.BLUE
w=Fore.WHITE
r=Fore.RED
lg=Fore.LIGHTGREEN_EX
lr=Fore.LIGHTMAGENTA_EX


#-------------------------Loading----------------------------

print(lr +
'Loading...')
source = audio.play_tone(1, 600, 1)
time.sleep(3)
print(lr +
"\nLoaded")
source = audio.play_tone(0.25, 1500,
1)
time.sleep(1)
print('\n')

#-------------------------Opening--------------------------
-----

while True:
  print(b + random.choice(open), (lr + " (Type 'skip' to skip
greeting)") )
  openans = TextBlob((input(w)).lower())
  if ('hi' in openans and
'nothing' not in openans) or 'hello' in openans or 'hey' in openans:
    continue
  else:

 break

openansblob = openans.polarity

if openans.lower() == 'skip':
  solve = 'yes'

pass
else:
  if ' and you' in openans or 'about you' in openans or 'you?' in openans or 'are
you' in openans or 'hbu' in openans or 'wbu' in openans:
    print(b + "Oh, I am having
a" + random.choice(good) + " day so far! Thank you for asking!\n\nSo, what's your
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name?")
  elif openansblob > 0:
    print(b+"\nThat's amazing",
random.choice(bro), "\b! \nSo What's your name?")
  elif openansblob == 0:

print(b+"\nNice, anyways.\nWhat's your name", random.choice(bro), "\b?")

else:
    print(b+"\nOh, that's fine, don't worry, you'll feel much better soon since you
are chating with me heheeh, anyways.")
    print("So what's your name my
friend?")

  name = (input(w)).lower()

  if "my name is " in name or
"i'm " in name or "i am " in name:
    name = name.replace('my name is ',
'')
    name = name.replace("i'm ", '')
    name = name.replace("i am ",
'')

  while True:
    if "don't" in name or "no" in name or
"not" in name:
      print(b + "Oh, that's fine, I'm sorry for any offense, I
swear didn't mean that \U0001F622")
      name = 'no'
      break
    if
len(name.split()) > 1:
      print(b + "\nWow, I'm sorry but I am really bad at
memorising, your name is sooooo long \U0001F635. Just give me your first name please
=.=")
      name = input(w)
      if len(name.split()) == 1:
        break
    if
len(name.split()) < 1:
      print(b + "Oh come on, don't kill our chat ?")

    print(b + "What's your first name?")
      name = input(w)
      if
len(name.split()) == 1:
        break
    else:
      break

  for x in blank:

if x in name:
      name = name.replace(x, '')

  name = name.capitalize()

bro.append(name)
  bro=random.choice(bro)
  #----------------------Intro +
Choose--------------------------
  gadj=random.choice(gadj)

  if gadj[0] == 'a' or
gadj[0] == 'e' or gadj[0] == 'i' or gadj[0] == 'o' or gadj[0] == 'u':
    gadj = 'n ' + gadj

 else:
    gadj = ' ' + gadj

  if name.lower() == 'no':
    pass
  else:
    name =
```

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name.capitalize()
    print(b + 'Awww', name, "That's such a"+gadj, "name!
?*:.o(???)o.:*?")

  print(b + "\nAnyways, I am Cici, a math problem
solving robot. \nDo you know why I'm called Cici?")
  ans=input(w)

  davinci="y
name actually came from the last syllable of Da Vinci! \nThis is because the person who created
me admires Da Vinci a lot as he is good at nearly everything. Therefore, she wishes I can be
similar minded to him as I was created to solve math problems, so she named me Cici. \nAnyways,
so do you have any mathematical questions for me?"

  if 'da vinci' in ans.lower():

  print(b+f"Oh my god! \n\nYes you are right, m{davinci}")
  elif ans.lower() ==
'yes':
    print(b+"Wow, tell me your thought!")
    ans = input(w)
    if 'da
vinci' in ans.lower():
      print(b+f"Oh my god! \n\nYes you are right,
m{davinci}")
    else:
      print(b+f"Haha, good guess! But nah, I know it's hard
to guess. \n\nM{davinci}")
  else:
    print(b+f"Haha, I know it's hard to guess.
\nM{davinci}")
  solve=input(w)

#--------------------Choose question
type-----------------------

p1='1. Arithmetic & Geometric Sequences - Finding numbers,
Sums and Terms in sequences'
p2='2. Simple calculations - Additions, Subtractions,
Multiplications, Divisions, Exponentials, Logarithms...'
p3='3. Complex Number - Additions,
Subtractions, Multiplications, Divisions...'
p4='4. Geometry - Finding Areas, Volumes,
Perimeters, Surface Areas...'
p5='5. Trigonometry - Sin, Cos, Tan...'
p6='6. Pythagoras -
Finding lengths of sides of right triangles'
problemtypes=[p1, p2, p3, p4, p5,p6]


while
True:
  solve=solve.lower()
  if 'ye' in solve or 'yes' in solve or 'yea' in solve or 'yup'
in solve or 'sure' in solve:
    print(b+"\nThat's great! Solving more questions helps my
developer to improve me.")
    print(b+"Which type of question would you like me to
solve for you? \nAs I am still a developing program and my developer is only in Year 10, I can
only solve the following types of problems:")
    for y in problemtypes:
      print(lg
+ y)
    print(b+'\nPlease type down the number of choice you want to choose and we can start
solving your question!')
  else:
      if openansblob < 0:

print(b+f"\nAlright then, it looks like you don't really need me right now. \nI guess I'll
just leave for now and wish we can talk in the fulture. Also, Hope you'll feel better, {name}.
Cya~")
        source = audio.play_file('bgm.mp3')
        time.sleep(9)

print(Fore.RED + "\nCici left the chat..."+w)
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            break
        else:

print(b+f"Alright then, I wish we can talk again in the future, {name}. Cya~")

    source = audio.play_file('bgm.mp3')
        time.sleep(9)
        print(Fore.RED +
"\nCici left the chat..." +w)
        break


    #===================== Problem
Solving!!! ======================


    gadj=['epic', 'cool', 'cool', 'cute', 'sweet']

gadj=random.choice(gadj)

    p1ty = ['1. Arithmetic Sequences', '2. Geometric Sequences']

p11 = ['1. Finding the nth term (tn)', '2. Finding the first term and difference (a and d)',
'3. Finding the sum of the nth term (Sn)']
    p12 = ['1. Finding the nth term (tn)', '2.
Finding the first term and common ratio (a and d)', '3. Finding the sum of the nth term (Sn)',
'4. Finding the sum to infinity']

    p2ty = ['1. Additions', '2. Subtractions', '3.
Multiplications', '4. Divisions', '5. Exponentials', '6. Logarithms', '7. Square Root', '8.
Root of x']

    p3ty = ['1. Additions', '2. Subtractions', '3. Multiplications', '4.
Divisions']

    p4ty = ['1. Finding Area', '2. Finding Volume', '3. Finding Perimeters &
Circumferences', '4. Surface Areas']
    p41 = ['1. Circles', '2. Quadrilaterals', '3. Squares',
'4. Triangles']
    p42 = ['1. Spheres', '2. Rectangular Prisms', '3. Cubes', '4. Pyramids', '5.
Triangular Pyramids', '6. Cylinders', '7. Cones']
    p43 = ['1. Circles', '2. Polygons']
    p44
= ['1. Spheres', '2. Rectangular Prisms', '3. Cubes', '4. Pyramids', '5. Cylinders', '6.
Cones']

    p5ty = ['1. Finding Angles', '2. Finding Side Lengths']
    p5dr = ['1. Degrees',
'2. Radians']
    p51 = ['1. Opposite & Hypotenuse Given (Sin)', '2. Adjacent &
Hypotenuse Given (Cos)', '3. Opposite & Adjacent Given (Tan)']
    p52 = ['1. Finding
Opposite', '2. Finding Adjacent', '3. Finding Hypotenuse']

    p6ty = ['1. Finding The Length
of the Hypotenuse side', '2. Finding the Length of a side that is not hypotenuse']

    num=
Fore.YELLOW + "\u26A0" + Fore.RED+" Number Error: 1) Please just insert the
NUMBER of the type of question you want to solve. 2) Please just type the NUMBER required in
the question."
    unit = "(Don't type the unit)"
    comnum = Fore.RED +
"Please just insert the complex number ONLY, make sure you typed in an actual COMPLEX
NUMBER with the right format."

    while True:
        try:
            ans=input(w)

ans=int(ans)
        break
        except:
        print(num)
```

```python
    #=============== 1.
Arithmetic & Geometric Sequences =============

   if ans == 1:

print("\n\n")
    print(lr + p1)
    print(b+gadj.capitalize(), "\b! Let's
start from Arithmetic and Geometric Sequences first then!")
    print(b+'So whcih
sequence are we particularly looking at?')
    for y in p1ty:
       print(lg+y)


while True:
      try:
         p1ty1ans=int(input(w))
         if p1ty1ans > 2 or
p1ty1ans <= 0:
           print(r+"I'm afraid there's not such an option. Please check
the list and let's choose again!")
           if p1ty1ans <= 2 and p1ty1ans > 0:

         break
         else:
           break
      except:
        print(num)


   #-------------------1.1. Arithmetic Sequences------------------

    if p1ty1ans ==
1:
      print(b+"And what are we finding?")
      for x in p11:

print(lg+x)
      while True:
        try:
          p1ty1ans1=int(input(w))
          if
p1ty1ans1 > 3 or p1ty1ans1 <= 0:
            print(r+"I'm afraid there's not such
an option. Please check the list and let's choose again!")
            if p1ty1ans1 <=
3 and p1ty1ans1 > 0:
               break
          else:
            break

except:
          print(num)
      #-------------------1.1.1. nth term
(tn)---------------------
      if p1ty1ans1 == 1:
        while True:

print(b+"Great! Let's start then!")
          try:
            print(b+'What is the
value of the first term?')
            a=float(input(w+'a = '))
            break

except:
            print(num)
        while True:
          try:
            print(b+'What
is the difference between terms?')
            d=float(input(w+'d = '))
            break
```

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        except:
            print(num)
          while True:
            try:

print(b+'Finally, what is the number of term we looking for?')
            n=float(input(w+'tn
= '))
            break
          except:
            print(num)

        tn =
lr + str(a+((n-1)*d))
        rule = lr + str(f"tn = {a} + ((n - 1) * {d})")

 print(b+"The number of the", n, "\bth term in this arithmetic sequence
is:", tn)
        print(b+"The rule for this arithmetic sequence is:", rule)


        print(b+"\nDo you have any more questions?")
        solve =
input(w)
      #--------1.1.2. first term and difference (a and d)------------
      if
p1ty1ans1 == 2:
        while True:
          print(b+"Great! Let's start then!")

         try:
            print(b+'What is the value of the smaller term given?')

s=float(input(w+'s = '))
            break
          except:
            print(num)

while True:
          try:
            print(b+'And which number of term is this number?')

            ts=float(input(w+'ts = '))
            break
          except:

print(num)
        while True:
          try:
            print(b+'What is the value of the
lareger term given?')
            l=float(input(w+'l = '))
            break

except:
            print(num)
        while True:
          try:
            print(b+'And
finally, which number of term is this larger number?')
            tl=float(input(w+'tl =
'))
            break
          except:
            print(num)

        if (tl-ts) == 0:

          d = lr + 'Undefined'
          a = lr + 'Undefined'
          rule = lr +
'Undefined'
        else:
          d = (l-s)/(tl-ts)
          a = lr + str(s-((ts-1)*d))
```

```
          d = lr + str(d)
           rule = lr + str(f'tn = {a} + (n - 1) * {d}')

print(b+"The first term for this arithmetic sequence is:", a)
        print(b+'The
difference between terms in this arithmetic sequence is:', d)
        print(b+'The rule for
this arithmetic sequence is:', rule)


        print(b+"\nDo you have any more
questions?")
        solve = input(w)
       #--------------1.1.3 sum of the nth term
(Sn)----------------
      if p1ty1ans1 == 3:
          while True:
            try:

  print(b+'What is the first term of the range in the sequence?')

a=float(input(w+'a = '))
              break
           except:
             print(num)


while True:
           try:
             print(b+'What is the number of the last term of the
range in the sequence?')
             n=float(input(w+'n = '))
             break

except:
             print(num)
         while True:
           try:

print(b+'Finally, what is the difference between the terms in the sequence?')

d=float(input(w+'d = '))
             break
           except:
             print(num)


  Sn = lr + str((n/2)*(2*a+(n-1)*d))
        rule = lr + str(f'Sn = ({n} * ((2 * {a}) + (n -
1) * {d})) / 2')
        print(b+'The sum of this range in this arithmetic sequence is', Sn)

       print(b+'The rule for this arithmetic sequence is: ', rule)


print(b+"\nDo you have any more questions?")
        solve = input(w)


#-------------------1.2. Geometric Sequences--------------------

    if p1ty1ans ==
2:
      print(b+"And what are we finding?")
      for x in p12:
        print(lg
+ x)
      while True:
        try:
          p1ty1ans2=int(input(w))
          if
p1ty1ans2 > 4 or p1ty1ans2 <= 0:
            print(r+"I'm afraid there's not such
an option. Please check the list and let's choose again!")
            if p1ty1ans2 <=
4 and p1ty1ans2 > 0:
```

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                break
            else:
               break

except:
          print(num)
       #--------------------1.2.1. nth term
(tn)-------------------
       if p1ty1ans2 == 1:
          while True:

print(b+"Great! Let's start then!")
            try:
               print(b+'What is the
first term?')
               a=float(input(w+'a = '))
               break
            except:

        print(num)
         while True:
            try:
               print(b+'What is the common
ratio between terms?')
               ratio=float(input(w+'r = '))
               break

except:
               print(num)
          while True:
            try:

print(b+'Finally, what number of term are we looking for?')
               n=float(input(w+'tn =
'))
               break
            except:
               print(num)

         p11ans
= lr + str(a*pow(ratio,(n-1)))
         rule = lr + str(f'tn = {a} * {ratio}^(n-1)')

print(b+"The number of the", n, "\bth term in this geometric sequence is:",
p11ans)
         print(b+"The rule for this geometric sequence is:", rule)


         print(b+"\nDo you have any more questions?")
         solve = input(w)

  #---------1.2.2. first term and difference (a and r)-----------
       if p1ty1ans2 == 2:

      while True:
            print(b+"Great! Let's start then!")
            try:

        print(b+'What is the value of the smaller term given? (smaller term)')

s=float(input(w+'s = '))
               break
            except:
               print(num)

while True:
            try:
               print(b+'And which number of term is this number?')

            ts=float(input(w+'ts = '))
               break
            except:

print(num)
         while True:
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            try:
                print(b+'What is the second term
given? (larger term)')
                l=float(input(w+'l = '))
                break

except:
                print(num)
        while True:
          try:
                print(b+'And
finally, which number of term is this second number?')
                tl=float(input(w+'tl =
'))
                break
          except:
            print(num)

        if (tl-ts) == 0:

         d = lr + 'Undefined'
          a = lr + 'Undefined'
          rule = lr +
'Undefined'
        else:
          r = lr + str(pow(l/s, 1/(tl-ts)))
          a = lr +
str(pow(s, 1/ts))
          rule = lr + str(f'tn = {a} + {r} ^ (n-1)')

print(b+"The first term for this geometric sequence is:", a)
        print(b+'The
the common ratio of this geometric sequence is:', r)
        print(b+'The rule for this
geometric sequence is:', rule)

        print(b+"\nDo you have any more
questions?")
        solve = input(w)
      #------------1.2.3. sum of the nth term
(Sn)-------------------
      if p1ty1ans2 == 3:
         while True:

print(b+"Great! Let's start then!")
            try:
                print(b+'What is the
value of the first term?')
                a=float(input(w+'a = '))
                break

except:
                print(num)
        while True:
          try:
                print(b+'And
what is the common ratio of this geometric sequence?')
                ratio=float(input(w+'r =
'))
                break
          except:
            print(num)
        while True:

   try:
                print(b+'And finally, what is the number of the last number of this
sequence?')
                n=float(input(w+'n = '))
                break
          except:

      print(num)

        if (r-1) == 0:
          Sn = lr + 'Undefined'
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            rule = lr
+ 'Undefined'
        else:
            Sn = lr + str((a*(pow(ratio,n)-1))/(r-1))

rule = lr + str(f'({a} * (({r} ^ n) - 1))/({ratio} - 1)')


print(b+"The sum of this geometric sequence is:", Sn)
        print(b+'The rule for
this geometric sequence is:', rule)

        print(b+"\nDo you have any more
questions?")
        solve = input(w)
       #------------1.2.4. sum to
infinity(Si)------------------
        if p1ty1ans2 == 4:
           while True:

print(b+"Great! Let's start then!")
           try:
               print(b+'What is the
value of the first term?')
               a=float(input(w+'a = '))
               break

except:
               print(num)
          while True:
            try:
               print(b+'And
what is the common ratio of this geometric sequence?')
               ratio=float(input(w+'r =
'))
               break
           except:
              print(num)

          if abs(r) >
1:
            Sn = lr + 'Undefined. To calculate the sum to infinity, the absolute value of the
geometric sequence can ONLY be LESS than 0!'
            rule = lr + 'Undefined'
         elif
(1-r) == 0:
            Sn = lr + 'Undefined'
            rule = lr + 'Undefined'

else:
            Sn = lr + str(a/(1-ratio))
            rule = lr + str(f'Si = {a} / (1 -
{ratio})')

        print(b+"The sum to infinity for this geometric sequence
is:", Sn)
        print(b+'The rule for this geometric sequence is:', rule)


      print(b+"\nDo you have any more questions?")
        solve = input(w)


#=================== 2. Simple Calculations =====================

  if ans == 2:

print("\n\n")
    print(lr + p2)
    print(b+gadj.capitalize(), "\b! Let's
start from Simple Calculations then!")
    print(b+'So which type of calculation are we
particularly looking at?')
    for y in p2ty:
       print(lg+y)
```

```
    while True:

  try:
        simpcal=int(input(w))
        if simpcal > 8 or simpcal <= 0:

 print(r+"I'm afraid there's not such an option. Please check the list and let's choose
again!")
        if simpcal <= 8 and simpcal > 0:
          break

else:
        break
      except:
        print(num)
    #-----------------------2.1.
Additions-------------------------
    if simpcal == 1:
      sum = 0

print(b+"Great! Let's start then!")
      print(b+'Insert all the addends in the
question. (Press Enter once to insert one value, press Enter three times to end)', unit)

while True:
        try:
          x=float(input(w))
          sum += x
        except:

        entkey = getkey(x)
          if entkey == key.ENTER:
            sum = lr + str(sum)

            break
          else:
            print(num)


print(Fore.BLUE+"Sum:", sum)

      print(Fore.BLUE+"\nDo you have any
more questions?")
      solve = input(w)
    #---------------------2.2.
Subtractions------------------------
    if simpcal == 2:
      while True:

print(b+"Great! Let's start then!")
        try:
          print(b+'What is the
minuend?')
          a=float(input(w))
          break
        except:

print(num)

      while True:
        try:
          print(b+'What is the first
subtrahend?')
          d=float(input(w+f'{a} - '))
          break
        except:

  print(num)

      c=a-d

      while True:
        print(b + 'Is there any
more subtrahend?')
```

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            add=input(w)
            if 'yes' in add or 'ye' in add or 'sure' in
add or 'yea' in add or 'yup' in add:
            try:
                print(b+"Other
subtrahend?")
                x=float(input(w + f"{c} - "))
                c -= x

        except:
                print(num)
            else:
                difference=lr + str(c)


    break

        print(Fore.BLUE+"Difference:", difference)


print(Fore.BLUE+"\nDo you have any more questions?")
        solve = input(w)

#---------------------2.3. Multiplications---------------------
    if simpcal == 3:

while True:
        print(b+"Great! Let's start then!")
        try:

print(b+'What is the first multiplier?')
            a=float(input(w))
            break

except:
            print(num)
        while True:
          try:
            print(b+'What is the
second multiplier?')
            d=float(input(w+f'{a} * '))
            break
          except:

            print(num)

        c=a*d

        while True:
          print(b + 'Is
there any more multipliers?')
          add=input(w)
          if 'yes' in add or 'ye' in add or
'sure' in add or 'yea' in add or 'yup' in add:
            try:
              print(b+"Other
multipliers?")
              x=float(input(w + f"{c} * "))
              c *= x

          except:
              print(num)
          else:
            product=lr + str(c)

 break

        print(Fore.BLUE+"Product:", product)


print(Fore.BLUE+"\nDo you have any more questions?")
        solve = input(w)

#-----------------------2.4. Division--------------------------
    if simpcal == 4:
```

```python
while True:
        print(b+"Great! Let's start then!")
        try:

print(b+'What is the dividend?')
            a=float(input(w))
            break

except:
            print(num)
        while True:
          try:
            print(b+'What is the
first divisor?')
            d=float(input(w+f'{a} / '))
            break
          except:

    print(num)

      c=a/d

      while True:
        print(b + 'Is there
any more divisors?')
        add=input(w)
        if 'yes' in add or 'ye' in add or 'sure' in
add or 'yea' in add or 'yup' in add:
          try:
            print(b+"Other
divisors?")
            x=float(input(w + f"{c} / "))
            c /= x

    except:
            print(num)
        else:
          quotient=lr + str(c)

break

      print(Fore.BLUE+"Quotient:", quotient)


print(Fore.BLUE+"\nDo you have any more questions?")
      solve = input(w)

#---------------------2.5. Exponentials------------------------
    if simpcal == 5:

while True:
        print(b+"Great! Let's start then!")
        try:

print(b+'What is the base?')
            a=float(input(w + 'Base = '))
            break

except:
            print(num)
      while True:
        try:
            print(b+'What is the
exponent of power?')
            d=float(input(w + 'Exponent of power = '))
            break

      except:
          print(num)

      res=lr + str(pow(a,d))


print(Fore.BLUE+f"{a} ^ {d}:", res)
```

```python
        print(Fore.BLUE+"\nDo you
have any more questions?")
        solve = input(w)
    #---------------------2.6.
Logarithms------------------------
    if simpcal == 6:
      while True:

print(b+"Great! Let's start then!")
        try:
          print(b+'What is the
base?')
          a=float(input(w + 'Base = '))
          break
        except:

print(num)
      while True:
        try:
          print(b+'And...')

d=float(input(w + f'log {a} to '))
          break
        except:
          print(num)


    if abs(a) != a or abs(d) != d:
        res = lr + 'Undefined'
      elif a == 10:

 res=lr + str(math.log10(d))
      else:
        res=lr + str(math.log(d,a))


print(Fore.BLUE+f"log {a} to {d}:", res)

        print(Fore.BLUE+"\nDo
you have any more questions?")
        solve = input(w)
    #---------------------2.7.
Square Root------------------------
    if simpcal == 7:
      while True:

print(b+"Great! Let's start then!")
        try:
          print(b+"What
number's square root are we looking for?")
          a=float(input(w + 'Square root of
'))
          break
        except:
          print(num)

        res = lr +
str(math.sqrt(a))

        print(Fore.BLUE+f"Square root of {a} is:", res)


        print(Fore.BLUE+"\nDo you have any more questions?")
        solve =
input(w)
    #---------------------2.8. Cube Root--------------------------
    if simpcal
== 8:
      while True:
        print(b+"Great! Let's start then!")
        try:

         print(b+"What is the root number?")
          a=float(input(w))
```

```
break
        except:
            print(num)
      while True:
          print(b+"Great!
Let's start then!")
          try:
            print(b+f"What number is in {a}
root?")
            d=float(input(w+f"{a} root of "))
            break

except:
            print(num)

        res = lr + str(pow(a,1/d))


print(Fore.BLUE+f"{a} root of {d} is:", res)


print(Fore.BLUE+"\nDo you have any more questions?")
        solve = input(w)


#==================== 3. Complex Numbers ========================

  if ans == 3:
    com
= b + "(Please insert the imaginary as 'j', without spaces!)"

print("\n\n")
    print(lr + p3)
    print(b+gadj.capitalize(), "\b! Let's
start from complex numbers then!")
    print(b+'So which type of complex number
calculation are we particularly looking at?')
    for y in p3ty:
      print(lg+y)


  while True:
      try:
        compcal=int(input(w))
        if compcal > 4 or compcal
<= 0:
          print(r+"I'm afraid there's not such an option. Please check the list
and let's choose again!")
          if compcal <= 4 and compcal > 0:

break
        else:
          break
      except:
        print(num)

#----------------------3.1. Additions------------------------
    if compcal == 1:

while True:
        print(b+"Great! Let's start then!")
        try:

print(b+"What is the first complex number that needs to be added?", com)

a=complex(input(w))
          break
        except:
          print(comnum)
      while
True:
        try:
          print(b+"What is the second complex number that needs to be
added?", com)
          d=complex(input(w+f'{a} + '))
```

```python
                break
            except:

                print(comnum)

        c=d+a

        while True:
           print(b +
'Is there any more addends?')
           add=input(w)
           if 'yes' in add or 'ye' in add or
'sure' in add or 'yea' in add or 'yup' in add:
              try:
                 print(b+"Other
addends?", com)
                 x=complex(input(w + f"{c} + "))
                 c +=
x
              except:
                 print(comnum)
              else:
                 sum=lr + str(c)

      break

       print(Fore.BLUE+"Sum:", sum)


print(Fore.BLUE+"\nDo you have any more questions?")
       solve = input(w)

#--------------------3.2. Subtractions------------------------
    if compcal == 2:

while True:
        print(b+"Great! Let's start then!")
        try:

print(b+'What is the minuend?', com)
           a=complex(input(w))
           break

except:
           print(comnum)
       while True:
         try:
           print(b+'What is
the first subtrahend?', com)
           d=complex(input(w+f'{a} - '))
           break

except:
           print(comnum)

      c=a-d

      while True:

print(b + 'Is there any more subtrahend?')
        add=input(w)
        if 'yes' in add or
'ye' in add or 'sure' in add or 'yea' in add or 'yup' in add:
           try:

print(b+"Other subtrahend?", com)
           x=complex(input(w + f"{c} -
"))
             c -= x
           except:
              print(comnum)
         else:

    difference=lr + str(c)
         break
```

```python
print(Fore.BLUE+"Difference:", difference)

        print(Fore.BLUE+"\nDo
you have any more questions?")
        solve = input(w)
    #----------------------3.3.
Multiplications---------------------
    if compcal == 3:
      while True:

print(b+"Great! Let's start then!")
          try:
            print(b+'What is the
first multiplier?', com)
            a=complex(input(w))
            break
          except:

      print(comnum)
        while True:
          try:
            print(b+'What is the second
multiplier?', com)
            d=complex(input(w+f'{a} * '))
            break
          except:

            print(comnum)

        c=a*d

        while True:
          print(b + 'Is
there any more multipliers?')
          add=input(w)
          if 'yes' in add or 'ye' in add or
'sure' in add or 'yea' in add or 'yup' in add:
            try:
              print(b+"Other
multipliers?", com)
              x=complex(input(w + f"{c} * "))
              c
*= x
            except:
              print(comnum)
          else:
            product=lr +
str(c)
            break

        print(Fore.BLUE+"Product:", product)


      print(Fore.BLUE+"\nDo you have any more questions?")
        solve = input(w)

  #----------------------2.4. Division---------------------------
    if compcal == 4:

while True:
        print(b+"Great! Let's start then!")
        try:

print(b+'What is the dividend?', com)
          a=complex(input(w))
          break

except:
          print(comnum)
        while True:
          try:
            print(b+'What is
the first divisor?', com)
```

```python
            d=complex(input(w+f'{a} / '))
            break

except:
            print(comnum)

        c=a/d

        while True:

print(b + 'Is there any more divisors?')
            add=input(w)
            if 'yes' in add or 'ye'
in add or 'sure' in add or 'yea' in add or 'yup' in add:
            try:

print(b+"Other divisors?", com)
                x=complex(input(w + f"{c} /
"))
                c /= x
            except:
                print(comnum)
            else:

        quotient=lr + str(c)
            break


print(Fore.BLUE+"Quotient:", quotient)

        print(Fore.BLUE+"\nDo you
have any more questions?")
        solve = input(w)

   #======================== 4.
Geometry ===========================

   if ans == 4:
     print("\n\n")

print(lr + p4)
     print(b+gadj.capitalize(), "\b! Let's start from Simple Calculations
then!")
     print(b+'So which part of geometry are we particularly looking at?')
     for
y in p4ty:
        print(lg+y)

     while True:
        try:

p4ty1ans=int(input(w))
         if p4ty1ans > 4 or p4ty1ans <= 0:

print(r+"I'm afraid there's not such an option. Please check the list and let's choose
again!")
            if p4ty1ans <= 4 and p4ty1ans > 0:
                break

else:
            break
        except:
          print(num)


     #----------------------4.1.
Areas----------------------------

     if p4ty1ans == 1:
        print(b+"And what
are we finding?")
        for x in p41:
          print(lg+x)
        while True:

try:
```

```
            p4ty1ans1=int(input(w))
            if p4ty1ans1 > 4 or p4ty1ans1 <= 0:

             print(r+"I'm afraid there's not such an option. Please check the list and let's
choose again!")
            if p4ty1ans1 <= 4 and p4ty1ans1 > 0:

break
            else:
                break
        except:
            print(num)

#--------------------4.1.1. Circles--------------------------
       if p4ty1ans1 == 1:

    while True:
            print(b+"Great! Let's start then!")
            try:

       print(b+'What is the radius of the circle? (If the diameter is given then divide it by
2)')
                radius=float(input(w+'r = '))
                break
            except:

    print(num)

        area = lr + str(math.pi*radius**2)
        rule = lr +
str(f"A = ({radius}^2) * \u03C0")
        print(b+"The area of this circle
is:", area, "unit^2")
        print(b+"The equation for finding this
circle's area is:", rule)
        print(b+"\nDo you have any more
questions?")
        solve = input(w)
      #--------------------4.1.2.
Quadrilaterals-------------------
       if p4ty1ans1 == 2:
          while True:

print(b+"Great! Let's start then!")
            try:
                print(b+"What
is the base given?", unit)
                base=float(input(w+'b = '))
                break

        except:
            print(num)
         while True:
            try:

print(b+'And what is the height given?', unit)
            height=float(input(w+'h = '))

        break
            except:
              print(num)

        area = lr +
str(base*height)
        rule = lr + str(f'A = {base} * {height}')
        print(b+"The
area of this quadrilateral is:", area, "unit^2")
        print(b+"The
equation for finding this quadrilateral's area is:", rule)


print(b+"\nDo you have any more questions?")
        solve = input(w)

#------------------------4.1.3. Squares-----------------------
```

```
            if p4ty1ans1 == 3:

    while True:
            print(b+"Great! Let's start then!")
            try:

        print(b+"What is the length of one side of the squre?", unit)

side=float(input(w+'s = '))
            break
           except:
            print(num)


        area = lr + str(side**2)
           rule = lr + str(f'A = {side}^2')

print(b+"The area of this squre is:", area, "unit^2")

print(b+"The equation for finding this quadrilateral's area is:", rule)


        print(b+"\nDo you have any more questions?")
           solve = input(w)

#----------------------4.1.4. Triangles----------------------
        if p4ty1ans1 == 4:

    while True:
            print(b+"Great! Let's start then!")
            try:

        print(b+"What is the base given?", unit)
            base=float(input(w+'b =
'))
            break
           except:
            print(num)
          while True:

   try:
            print(b+'And what is the height given?', unit)

height=float(input(w+'h = '))
            break
           except:
            print(num)


          area = lr + str(base*height/2)
           rule = lr + str(f'A = {base} * {height} / 2')

       print(b+"The area of this triangle is:", area, "unit^2")

print(b+"The equation for finding this quadrilateral's area is:", rule)


        print(b+"\nDo you have any more questions?")
           solve = input(w)


#----------------------4.2. Volume----------------------------

     if p4ty1ans ==
2:
        print(b+"And what are we finding?")
        for x in p42:

print(lg+x)
        while True:
          try:
            p4ty1ans1=int(input(w))
            if
p4ty1ans1 > 7 or p4ty1ans1 <= 0:
            print(r+"I'm afraid there's not such
```

```
an option. Please check the list and let's choose again!")
            if p4ty1ans1 <=
7 and p4ty1ans1 > 0:
                break
          else:
            break

except:
          print(num)
      #----------------------4.2.1.
Spheres--------------------------
      if p4ty1ans1 == 1:
        while True:

print(b+"Great! Let's start then!")
          try:
            print(b+'What is the
radius of the sphere? (If the diameter is given then divide it by 2)', unit)

radius=float(input(w+'r = '))
            break
          except:
            print(num)


        volume = lr + str((4/3)*math.pi*radius**3)
        rule = lr + str(f"V
= (4/3) * ({radius}^3) * \u03C0")
        print(b+"The volume of this sphere
is:", volume, "unit^3")
        print(b+"The equation for finding this
sphere's volume is:", rule)
        print(b+"\nDo you have any more
questions?")
        solve = input(w)
      #--------------------4.2.2. Quadril
Prisms-------------------
      if p4ty1ans1 == 2:
        while True:

print(b+"Great! Let's start then!")
          try:
            print(b+"What
is the length given?", unit)
            length=float(input(w+'l = '))

break
          except:
            print(num)
        while True:
          try:

    print(b+'And what is the width given?', unit)
            width=float(input(w+'w = '))

        break
          except:
            print(num)
        while True:
          try:

           print(b+'And what is the height given?', unit)
            height=float(input(w+'h
= '))
            break
          except:
            print(num)

        volume = lr +
str(length*width*height)
        rule = lr + str(f'V = {length} * {width} * {height}')

 print(b+"The volume of this quadrilateral prism is:", volume, "unit^3")

      print(b+"The equation for finding this rectangular prism's volume is:", rule)
```

```python
        print(b+"\nDo you have any more questions?")
        solve =
input(w)
        #----------------------4.2.3. Cubes-------------------------
        if
p4ty1ans1 == 3:
        while True:
            print(b+"Great! Let's start then!")

            try:
                print(b+"What is the length of one side of the cube
given?", unit)
                length=float(input(w+'l = '))
                break

except:
                print(num)

        volume = lr + str(length**3)
        rule =
lr + str(f'V = {length}^3')
        print(b+"The volume of this cube is:", volume,
"unit^3")
        print(b+"The equation for finding this cube's volume
is:", rule)

        print(b+"\nDo you have any more questions?")

    solve = input(w)
        #----------------------4.2.4. Pyramids-----------------------

    if p4ty1ans1 == 4:
        while True:
            print(b+"Great! Let's start
then!")
            try:
                print(b+"What is the base length given?",
unit)
                length=float(input(w+'l = '))
                break
            except:

    print(num)
        while True:
            try:
                print(b+'And what is the base
width given?', unit)
                width=float(input(w+'w = '))
                break

except:
                print(num)
        while True:
            try:
                print(b+'And
what is the height given?', unit)
                height=float(input(w+'h = '))

break
            except:
                print(num)

        volume = lr +
str(length*width*height/3)
        rule = lr + str(f'V = ({length} * {width} * {height}) /
3')
        print(b+"The volume of this pyramid is:", volume, "unit^3")

        print(b+"The equation for finding this pyramid's volume is:", rule)


        print(b+"\nDo you have any more questions?")
        solve = input(w)
```

```
#-----------------4.2.5. Triangular Pyramids------------------
        if p4ty1ans1 == 5:

    while True:
            print(b+"Great! Let's start then!")
            try:

      print(b+"What is the length of the base's base given?", unit)

base=float(input(w+'bb = '))
            break
          except:
            print(num)

     while True:
            try:
            print(b+"And what is the base's height
given?", unit)
            baseheight=float(input(w+'bh = '))
            break

   except:
            print(num)
         while True:
           try:

print(b+'And what is the height of this triangular based pyramid given?', unit)

height=float(input(w+'h = '))
            break
          except:
            print(num)


        volume = lr + str(((base*baseheight)/2*height)/3)
         rule = lr + str(f'V =
(({base} * {baseheight}) / 2 * {height}) / 3')
        print(b+"The volume of this
triangular based pyramid is:", volume, "unit^3")
        print(b+"The
equation for finding this triangle based pyramid's volume is:", rule)


print(b+"\nDo you have any more questions?")
        solve = input(w)

#---------------------4.2.6. Cylinders----------------------
        if p4ty1ans1 == 6:

    while True:
            print(b+"Great! Let's start then!")
            try:

      print(b+"What is the radius of the circle base of the cylinder? (If the diameter is
given then divide it by 2)", unit)
            radius=float(input(w+'r = '))

break
            except:
            print(num)
         while True:
           try:

   print(b+'And what is the height of the cylinder given?', unit)

height=float(input(w+'h = '))
            break
          except:
            print(num)


        volume = lr + str(math.pi*height*radius**2)
         rule = lr + str(f'V = ({radius}^2)
* \u03C0 * {height}')
```

```python
        print(b+"The volume of this cylinder is:", volume,
"unit^3")
        print(b+"The equation for finding this cylinder's volume
is:", rule)

        print(b+"\nDo you have any more questions?")

    solve = input(w)
      #----------------------4.2.7. Cones--------------------------

   if p4ty1ans1 == 7:
        while True:
           print(b+"Great! Let's start
then!")
           try:
              print(b+"What is the radius of the circle base
of this cone? (If the diameter is given then divide it by 2)", unit)

radius=float(input(w+'r = '))
              break
           except:
             print(num)

     while True:
          try:
             print(b+'And what is the height of this cone
given?', unit)
             height=float(input(w+'h = '))
             break

except:
             print(num)

        volume = lr + str((math.pi*height*radius**2)/3)

    rule = lr + str(f'V = (\u03C0 * {height} * {radius}^2) / 3')
        print(b+"The
volume of this cone is:", volume, "unit^3")
        print(b+"The equation
for finding this cone's volume is:", rule)

        print(b+"\nDo you have
any more questions?")
        solve = input(w)

    #----------------4.3. Perimeters
& Circumefrences----------------

    if p4ty1ans == 3:
       print(b+"And what
are we finding?")
       for x in p43:
          print(lg+x)
       while True:

try:
          p4ty1ans1=int(input(w))
          if p4ty1ans1 > 2 or p4ty1ans1 <= 0:

           print(r+"I'm afraid there's not such an option. Please check the list and let's
choose again!")
             if p4ty1ans1 <= 2 and p4ty1ans1 > 0:

break
          else:
             break
        except:
          print(num)

#---------------------4.3.1. Circles--------------------------
       if p4ty1ans1 == 1:

    while True:
          print(b+"Great! Let's start then!")
          try:
```

```
      print(b+'What is the radius of the circle? (If the diameter is given then divide it by
2)', unit)
            radius=float(input(w+'r = '))
            break
         except:

         print(num)

       ccf = lr + str(2*radius*math.pi)
       rule = lr
+ str(f"V = 2 * {radius} * \u03C0")
       print(b+"The circumference of this
circle is:", ccf, "unit")
       print(b+"The equation for finding this
circle's circumference is:", rule)

       print(b+"\nDo you have any more
questions?")
       solve = input(w)
     #---------------------4.3.2.
Polygon------------------------
     if p4ty1ans1 == 2:
        perimeter = 0

print(b+'Insert lengths of all the sides of this polygon. (Press Enter once to insert one
value, press Enter three times to end)', unit)
        while True:
          try:

 x=float(input(w))
            perimeter += x
          except:
            entkey =
getkey(x)
            if entkey == key.ENTER:
              perimeter = lr + str(perimeter)

             break
            else:
              print(num)
        print(b+"The
perimeter of this polygon is:", perimeter, "unit")


print(b+"\nDo you have any more questions?")
        solve = input(w)


#----------------------4.4. Surface Areas-----------------------

    if p4ty1ans ==
4:
      print(b+"And what are we finding?")
      for x in p44:

print(lg+x)
      while True:
        try:
          p4ty1ans1=int(input(w))
          if
p4ty1ans1 > 7 or p4ty1ans1 <= 0:
            print(r+"I'm afraid there's not such
an option. Please check the list and let's choose again!")
            if p4ty1ans1 <=
7 and p4ty1ans1 > 0:
              break
          else:
            break

except:
          print(num)


      #--------------------4.4.1.
Spheres------------------------
```

```python
        if p4ty1ans1 == 1:
          while True:

print(b+"Great! Let's start then!")
            try:
              print(b+'What is the
radius of the sphere? (If the diameter is given then divide it by 2)', unit)

radius=float(input(w+'r = '))
              break
            except:
              print(num)


        sa = lr + str(4*math.pi*radius**2)
        rule = lr + str(f"SA = 4 *
({radius}^2) * \u03C0")
        print(b+"The surface area of this sphere is:",
sa, "unit^2")
        print(b+"The equation for finding this sphere's surface
area is:", rule)
        print(b+"\nDo you have any more questions?")

solve = input(w)
      #--------------------4.4.2. Quadril Prisms--------------------

if p4ty1ans1 == 2:
        while True:
          print(b+"Great! Let's start
then!")
          try:
            print(b+"What is the length given?",
unit)
            length=float(input(w+'l = '))
            break
          except:

    print(num)
        while True:
          try:
            print(b+'And what is the width
given?', unit)
            width=float(input(w+'w = '))
            break

except:
            print(num)
        while True:
          try:
            print(b+'And
what is the height given?', unit)
            height=float(input(w+'h = '))

break
          except:
            print(num)

        sa = lr +
str(2*(length*width+length*height+width*height))
        rule = lr + str(f'SA = 2 * ({length}
* {width} + {length} * {height} + {width} * {height })')
        print(b+"The surface
area of this quadrilateral prism is:", sa, "unit^2")
        print(b+"The
equation for finding this rectangular prism's surface area is:", rule)

print(b+"\nDo you have any more questions?")
        solve = input(w)

#----------------------4.4.3. Cubes--------------------------
      if p4ty1ans1 == 3:

    while True:
          print(b+"Great! Let's start then!")
          try:
```

```python
        print(b+"What is the length of one side of the cube given?", unit)

length=float(input(w+'l = '))
            break
          except:
            print(num)


        sa = lr + str(6*length**2)
        rule = lr + str(f'SA = 6 * {length}^2')

     print(b+"The surface area of this cube is:", sa, "unit^2")

print(b+"The equation for finding this cube's surface area is:", rule)


     print(b+"\nDo you have any more questions?")
        solve = input(w)

#----------------------4.4.4. Pyramids----------------------
        if p4ty1ans1 == 4:

   while True:
          print(b+"Great! Let's start then!")
          try:

      print(b+"What is the base length given?", unit)

length=float(input(w+'l = '))
            break
          except:
            print(num)

     while True:
          try:
            print(b+'And what is the base width given?',
unit)
            width=float(input(w+'w = '))
            break
          except:

   print(num)
        while True:
          try:
            print(b+'And what is the height
given?', unit)
            height=float(input(w+'h = '))
            break

except:
            print(num)

        sa = lr + str(length*width +
length*math.sqrt(pow(width/2,2) + height**2) + width*math.sqrt(pow(length/2, 2) + height**2))

        rule = lr + str(f'SA = {length} * {width} + {length} * (({width}/2)^2 + {height}^2) ^
(1/2) + {width} * (({length}/2)^2 + {height}^2) ^ (1/2)')
        print(b+"The surface
area of this pyramid is:", sa, "unit^2")
        print(b+"The equation for
finding this pyramid's surface area is:", rule)


        print(b+"\nDo you
have any more questions?")
        solve = input(w)
      #----------------------4.4.5.
Cylinders--------------------
        if p4ty1ans1 == 5:
        while True:

print(b+"Great! Let's start then!")
          try:
            print(b+"What
is the radius of the circle base of the cylinder? (If the diameter is given then divide it by
```

```python
2)", unit)
            radius=float(input(w+'r = '))
            break

except:
            print(num)
        while True:
          try:
            print(b+'And
what is the height of the cylinder given?', unit)
            height=float(input(w+'h = '))

          break
          except:
            print(num)

        sa = lr +
str(2*math.pi*radius*height + 2*math.pi*radius**2)
        rule = lr + str(f'SA = (2 * \u03C0
* {radius} * {height}) + (2 * \u03C0 * {radius}^2)')
        print(b+"The surface area of
this cylinder is:", sa, "unit^2")
        print(b+"The equation for
finding this cylinder's surface area is:", rule)

        print(b+"\nDo you
have any more questions?")
        solve = input(w)

#-----------------------4.4.7. Cones--------------------------
      if p4ty1ans1 == 7:

    while True:
          print(b+"Great! Let's start then!")
          try:

      print(b+"What is the radius of the circle base of this cone? (If the diameter is
given then divide it by 2)", unit)
            radius=float(input(w+'r = '))

break
          except:
            print(num)
        while True:
          try:

    print(b+'And what is the height of this cone given?', unit)

height=float(input(w+'h = '))
            break
          except:
            print(num)


        sa = lr + str(math.pi*radius*(radius+math.sqrt(pow(height,2)+pow(radius,2))))

rule = lr + str(f'V = \u03C0 * {radius} * {radius} + (({height}^2) + ({radius}^2)) ^ (1/2)')

      print(b+"The surface area of this cone is:", sa, "unit^3")

print(b+"The equation for finding this cone's surface area is:", rule)


    print(b+"\nDo you have any more questions?")
        solve = input(w)


#===================== 5. Trigonometry =========================

  if ans == 5:

print("\n\n")
    print(lr + p5)
    print(b+gadj.capitalize(), "\b! Let's
start from Trigonometry then!")
```

```python
    print(b+'So which part of trigonometry are we
particularly looking at?')

    for y in p5ty:
       print(lg+y)
    while True:

try:
        p5ty1ans=int(input(w))
        if p5ty1ans > 6 or p5ty1ans <= 0:

  print(r+"I'm afraid there's not such an option. Please check the list and let's choose
again!")
        if p5ty1ans <= 6 and p5ty1ans > 0:
           break

else:
        break
      except:
        print(num)


    #------------------------5.1.
Angles----------------------------

    if p5ty1ans == 1:
       print(b+"And
what are we finding?")
       for x in p51:
          print(lg+x)
       while True:

  try:
          p5ty1ans=int(input(w))
          if p5ty1ans > 3 or p5ty1ans <= 0:

          print(r+"I'm afraid there's not such an option. Please check the list and let's
choose again!")
           if p5ty1ans <= 3 and p5ty1ans > 0:

break
          else:
             break
        except:
          print(num)


print(b+"And are we finding the answer in degrees or radians?")
       for x in
p5dr:
          print(lg+x)
       while True:
          try:
            dr=int(input(w))

    if dr > 2 or dr <= 0:
            print(r+"I'm afraid there's not such an
option. Please check the list and let's choose again!")
            if dr <= 2 and dr
> 0:
               break
          else:
             break
        except:

print(num)

       if p5ty1ans == 1:
         x,xs,y,ys='opposite','O','hypotenuse','H'

if p5ty1ans == 2:
        x,xs,y,ys='adjacent','A','hypotenuse','H'
       if p5ty1ans == 3:

        x,xs,y,ys='opposite','O','adjacent','A'
       while True:
```

```python
        print(b+"Great!
Let's start then!")
        try:
            print(b+f'What is the length of the side {x}
given to the angle we are finding?', unit)
            x=float(input(w+f'{xs} = '))

break
        except:
            print(num)
        while True:
          try:

print(b+f'And what is the length of the {y} side given?', unit)

y=float(input(w+f'{ys} = '))
            if x > y:
                if p5ty1ans == 3:

    break
                else:
                    print(r + "This triangle is impossible! (note
the hypotenuse is always the longest side of a right traingle) Try again.")

else:
                break
          except:
            print(num)

        if p5ty1ans == 1:

    rule = lr + str(f"\u03B8 = arcsin({x} / {y})")
            theta = lr +
str(math.degrees(math.asin(x/y))) if dr == 2 else lr + str(math.asin(x/y))
        if p5ty1ans
== 2:
            rule = lr + str(f"\u03B8 = arccos({x} / {y})")
            theta = lr +
str(math.degrees(math.acos(x/y))) if dr == 2 else lr + str(math.acos(x/y))
        if p5ty1ans
== 3:
            rule = lr + str(f"\u03B8 = arctan({x} / {y})")
            theta = lr +
str(math.degrees(math.atan(x/y))) if dr == 2 else lr + str(math.atan(x/y))
        if p5dr ==
1:
            print(b+"\u03B8:", theta, "\b\u00B0")
        else:

print(b+"\u03B8:", theta)
        print(b+"The equation for finding this angle of
this triangle is:", rule)
        print(b+"\nDo you have any more questions?")

    solve = input(w)

    #---------------------5.2. Side
Length-------------------------

    if p5ty1ans == 2:
      print(b+"And what
are we finding?")
      for x in p52:
        print(lg+x)
      while True:

try:
            p5ty1ans=int(input(w))
            if p5ty1ans > 3 or p5ty1ans <= 0:

        print(r+"I'm afraid there's not such an option. Please check the list and let's
choose again!")
            if p5ty1ans <= 3 and p5ty1ans > 0:

break
```

```python
                else:
                    break
            except:
                print(num)

        if
p5ty1ans == 1:
            x,xs,y,ys='adjacent','A','hypotenuse','H'
        if p5ty1ans == 2:

    x,xs,y,ys='opposite','A','hypotenuse','H'
        if p5ty1ans == 3:

x,xs,y,ys='opposite','O','adjacent','A'

        print(b+'Great! So which side is given?')

   print(lg+f"1. {x}" + "\n" + f"2. {y}")
        while True:

    try:
            side=int(input(w))
            if side > 2 or side <= 0:

print(r+"I'm afraid there's not such an option. Please check the list and let's choose
again!")
                if side <= 2 and side > 0:
                    break

else:
            break
        except:
            print(num)

        known=xs if
side == 1 else ys
        knownf=x if side == 1 else y
        unknown=ys if side == 1 else xs

    unknownf=y if side == 1 else x
        while True:
          print(b+"Great! Let's start
then!")
          try:
            print(b+f'What is the length of the {knownf}?', unit)

          knownnum=float(input(w+f'{known} = '))
            break
          except:

print(num)
        while True:
          try:
            print(b+'And angle given? (please give
your answer in degrees', unit)
            theta=float(input(w+'\u03B8 = '))
            break

      except:
            print(num,'3) Please give your answer in DEGREES')

        theta =
math.radians(theta)
        if p5ty1ans == 1:

          answer = lr +
str(knownnum*math.tan(theta)) if side == 1 else lr + str(knownnum*math.sin(theta))
        if
p5ty1ans == 2:
          answer = lr + str(knownnum/math.tan(theta)) if side == 1 else lr +
str(knownnum*math.cos(theta))
        if p5ty1ans == 3:
          answer = lr +
str(knownnum/math.sin(theta)) if side == 1 else lr + str(knownnum/math.cos(theta))
```

```python
thetaword = str(math.degrees(theta)) + '\u00B0'
        if p5ty1ans == 1:
            rule = lr +
str(f"{unknown} = {knownnum} * tan({thetaword})") if side == 1 else lr +
str(f"{unknown} = {knownnum} * sin({thetaword})")
        if p5ty1ans == 2:

rule = lr + str(f"{unknown} = {knownnum} / tan({thetaword})") if side == 1 else lr +
str(f"{unknown} = {knownnum} * cos({thetaword})")
        if p5ty1ans == 3:

rule = lr + str(f"{unknown} = {knownnum} / sin({thetaword})") if side == 1 else lr +
str(f"{unknown} = {knownnum} * cos({thetaword})")

        print(b+f"The length
of {unknownf} is:", answer, 'unit')
        print(b+"The equation for finding the
length of this side is:", rule)

        print(b+"\nDo you have any more
questions?")
        solve = input(w)

  #======================== 6. Pythagoras
==========================

  if ans == 6:
    print("\n\n")
    print(lr + p6)

    print(b+gadj.capitalize(), "\b! Let's start from Pythagoras then!")

print(b+'So which side of the right triangle are we finding?')
    for y in p6ty:

print(lg+y)
    while True:
      try:
        p6ty1ans=int(input(w))
        if p6ty1ans
> 2 or p6ty1ans <= 0:
          print(r+"I'm afraid there's not such an option.
Please check the list and let's choose again!")
          if p6ty1ans <= 2 and
p6ty1ans > 0:
            break
        else:
          break
      except:

print(num)

    #----------------------6.1. Find Hypotenuse----------------------


    if p6ty1ans == 1:
      while True:
        print(b+"Great! Let's start
then!")
        try:
          print(b+'What is the length of the first known side
given?', unit)
          aside=float(input(w+'a = '))
          break
        except:

    print(num)

      while True:
        try:
          print(b+'And what is the length of
the second known side given?', unit)
          bside=float(input(w+'b='))
          break
```

```python
        except:
            print(num)
        c=lr + str(math.sqrt((aside**2)+(bside**2)))

rule=lr + f'(({aside}^2) + ({bside}^2))^(1/2) = {c}'
        print(b+'The length of the
hypotenuse is:', c, 'unit')
        print(b+'The equation for finding the hypothenuse is:',
rule)

        print(b+"\nDo you have any more questions?")
        solve = input(w)


    #--------------------6.2. Find Non-hypotenuse--------------------

    if
p6ty1ans == 2:
        while True:
            print(b+"Great! Let's start then!")

    try:
            print(b+'What is the length of the known non-hypotenuse side given?', unit)

             bside=float(input(w+'b = '))
              break
            except:

print(num)

        while True:
            try:
              print(b+'And what is the length of the
second known side given?', unit)
              cside=float(input(w+'c='))
              break

 except:
            print(num)
        a=lr + str(math.sqrt((cside**2)-(bside**2)))

rule=lr + f'(({cside}^2) - ({bside}^2))^(1/2) = {a}'
        print(b+'The length of the unknown
side is:', a, 'unit')
        print(b+'The equation for finding this unknown side is:',
rule)

        print(b+"\nDo you have any more questions?")
        solve = input(w)
```