

Révisions

```
1  '''Revisions entre le chapitre 7 et le chapitre 8'''
2
3  '''Exercice 1'''
4
5  def U(u0,n):
6      u = u0
7      L = [u0]
8      for k in range(1,n+1):
9          u = 1+(u/k)
10         L.append(u)
11     return L
12
13  '''Exercice 2'''
14
15  test_u = [1,2]
16  test_v = [2,4]
17  test_w = [2,7]
18
19  def colineaires_plan(u,v):
20      if u[0]*v[1] - u[1]*v[0] == 0:
21          return True
22      return False
23
24  '''Exercice 3'''
25
26  def test(liste):
27      S = 0
28      for a in liste:
29          S += 1/(a**2)
30      for a in liste:
31          if (a**2)*S < 2:
32              return False
33      return True
34
35  '''Exercice 4'''
36
37  import matplotlib.pyplot as plt
38  from math import *
39
40  def suite_u(n,u1):
41      u = u1
42      Y = [u]
43      for k in range(2,n+1):
44          u = (1+(1/k))*sin(u)
45          Y.append(u)
46      return Y
47
48  liste_u1 = [0.5,1,1.5,2,2.5,3]
49
50  def graphes_u(n,liste_u1):
51      X = [k for k in range(1,n+1)]
52      for initial in liste_u1:
53          Y = suite_u(n,initial)
54          plt.plot(X,Y,'.')
55      plt.show()
```

```
1  '''Exercice 5'''
2
3  def u_rec(n,u0,u1,u2):
4      if n==0:
5          return u0
6      elif n==1:
7          return u1
8      elif n==2:
9          return u2
10     else:
11         return (1/3)*(u_rec(n-1,u0,u1,u2)+u_rec(n-2,u0,u1,u2)+u_rec(n-3,u0,u1,u2))
12
13  '''Exercice 6'''
14
15  u1 = [0,0,0]
16  u2 = [1,2,3]
17  u3 = [1,2,0]
18  u4 = [2,4,6]
19  u5 = [2,4,0]
20
21  def colineaires_espace(v1,v2):
22      x1 = v1[0]
23      y1 = v1[1]
24      z1 = v1[2]
25      x2 = v2[0]
26      y2 = v2[1]
27      z2 = v2[2]
28      if z1==0 and z2==0:
29          return x1*y2 - x2*y1 == 0
30      elif z1==0:
31          return x1==0 and y1==0
32      elif z2==0:
33          return x2==0 and y2==0
34      else :
35          k=z2/z1
36          return k*x1==x2 and k*y1==y2
```