1 def gcd(x, y):

2 if x < 0:

3 x = -x

4 if y < 0:

5 y = -y

6 if x == 0:

7 return y

8 while y != 0:

9 rem = x % y

10 x = y

11 y = rem

12 return x

1 DIGITS = '0123456789ABCDEF'

2

3 def hex(number):

4 if number == 0:

5 return '0'

6 res = ''

7 while number > 0:

8 digit = number % 16

9 res = DIGITS[digit] + res

10 number = number // 16

11 return res

1 def findmax(items):

2 if len(items) == 0:

3 return None

4 m = items[0]

5 i = 1

6 while i < len(items):

7 if m < items[i]:

8 m = items[i]

9 i = i + 1

10 return m

1 from math import \*

2

3 def square\_equal(a, b, c):

4 if a != 0:

5 D = b\*b - 4\*a\*c

6 if D > 0:

7 x1 = (-b - sqrt(D)) / (2\*a)

8 x2 = (-b + sqrt(D)) / (2\*a)

9 return [x1, x2]

10 elif D == 0:

11 return [-b / (2\*a)]

12 else:

13 return []

14 else:

15 if b != 0:

16 return [-c / b]

17 else:

18 return []

1 def unique(items):

2 res = []

3 i = 0

4 while i < len(items):

5 if len(res) == 0 or res[-1] != items[i]:

6 res = res + [items[i]]

7 i = i + 1

8 return res

1 def join(sep, items):

2 res = ''

3 if len(items) > 0:

4 res = str(items[0])

5 items = items[1:]

6 while len(items) > 0:

7 res = res + sep + str(items[0])

8 items = items[1:]

9 return res