```
for i in range(5):
  my_inp = input('Enter the hexadecimal: ')
  decimal = int(my_inp,16)
  dec_bin = bin(decimal)
  binary = dec_bin[2:]
  binary = (8 - len(binary)) * '0' + binary
  binary = [[int(binary[0]),int(binary[1]),int(binary[2]),int(binary[3])] ,
[int(binary[4]),int(binary[5]),int(binary[6]),int(binary[7])]]
  #print(binary)

  w = binary
  #print(w)
  output = []
  if w == [[1,1,1,1],[1,1,1,1]]:
    print('True')
  if w == [[0,0,0,0],[0,0,0,0]]:
    print('False')
  if w[0][0] + w[0][1] + w[0][2] + w[0][3] == 4:
    print('')
    if True:
      w[0][0] = 0
      w[0][1] = 0
      w[0][2] = 0
      w[0][3] = 0
      output.append('B')
  if w[1][0] + w[1][1] + w[1][2] + w[1][3] == 4:
    print('')
    if True:
      w[1][0] = 0
      w[1][1] = 0
      w[1][2] = 0
      w[1][3] = 0
      output.append('~B')
  if w[0][0] + w[0][1] + w[1][0] + w[1][1] == 4:
    print('')
    if True:
      w[0][0] = 0
      w[0][1] = 0
      w[1][0] = 0
      w[1][1] = 0
      output.append('A')
  if w[0][1] + w[0][2] + w[1][1] + w[1][2] == 4:
    print('')
    if True:
      w[0][1] = 0
      w[0][2] = 0
      w[1][1] = 0
      w[1][2] = 0
      output.append('C')
  if w[0][2] + w[0][3] + w[1][2] + w[1][3] == 4:
```

```
  print('')
  if True:
    w[0][2] = 0
    w[0][3] = 0
    w[1][2] = 0
    w[1][3] = 0
    output.append('~A')
if w[0][0] + w[0][3] + w[1][0] + w[1][3] == 4:
  print('')
  if True:
    w[0][0] = 0
    w[0][3] = 0
    w[1][0] = 0
    w[1][3] = 0
    output.append('~C')
if w[0][0] + w[0][1] == 2:
  print('')
  if True:
    w[0][0] = 0
    w[0][1] = 0
    output.append('AB')
if w[0][1] + w[0][2] == 2:
  print('')
  if True:
    w[0][1] = 0
    w[0][2] = 0
    output.append('BC')
if w[0][2] + w[0][3] == 2:
  print('')
  if True:
    w[0][2] = 0
    w[0][3] = 0
    output.append('~AB')
if w[1][0] + w[1][1] == 2:
  print('')
  if True:
    w[1][0] = 0
    w[1][1] = 0
    output.append('A~B')
if w[1][1] + w[1][2] == 2:
  print('')
  if True:
    w[1][1] = 0
    w[1][2] = 0
    output.append('~BC')
if w[1][2] + w[1][3] == 2:
  print('')
  if True:
    w[1][2] = 0
    w[1][3] = 0
```

```
    output.append('~A~B')
if w[0][0] + w[1][0] == 2:
  print('')
  if True:
    w[0][0] = 0
    w[1][0] = 0
    output.append('A~C')
if w[0][1] + w[1][1] == 2:
  print('')
  if True:
    w[0][1] = 0
    w[1][1] = 0
    output.append('AC')
if w[0][2] + w[1][2] == 2:
  print('')
  if True:
    w[0][2] = 0
    w[1][2] = 0
    output.append('~AC')
if w[0][3] + w[1][3] == 2:
  print('')
  if True:
    w[0][3] = 0
    w[1][3] = 0
    output.append('~A~C')
if w[0][0] + w[0][3] == 2:
  print('')
  if True:
    w[0][0] = 0
    w[0][3] = 0
    output.append('B~C')
if w[1][0] + w[1][3] == 2:
  print('')
  if True:
    w[1][0] = 0
    w[1][3] = 0
    output.append('~B~C')
if w[0][0] == 1:
  print('')
  if True:
    w[0][0] = 0
    output.append('AB~C')
if w[0][1] == 1:
  print('')
  if True:
    w[0][1] = 0
    output.append('ABC')
if w[0][2] == 1:
  print('')
  if True:
```

```
      w[0][2] = 0
      output.append('~ABC')
  if w[0][3] == 1:
    print('')
    if True:
      w[0][3] = 0
      output.append('~AB~C')
  if w[1][0] == 1:
    print('')
    if True:
      w[1][0] = 0
      output.append('A~B~C')
  if w[1][1] == 1:
    print('')
    if True:
      w[1][1] = 0
      output.append('A~BC')
  if w[1][2] == 1:
    print('')
    if True:
      w[1][2] = 0
      output.append('~A~BC')
  if w[1][3] == 1:
    print('')
    if True:
      w[1][3] = 0
      output.append('~A~B~C')
  #print(output)
  if len(output) == 1:
      final = ''
      for i in output:
          final = final + i
          print(final)
  if len(output) == 2:
      print(output[0],'+',output[1])
  if len(output) == 3:
      print(output[0],'+',output[1],'+',output[2])
  if len(output) == 4:
      print(output[0],'+',output[1],'+',output[2],'+',output[3])
  if len(output) == 5:
      print(output[0],'+',output[1],'+',output[2],'+',output[3],'+',output[4])
  if len(output) == 6:

print(output[0],'+',output[1],'+',output[2],'+',output[3],'+',output[4],'+',output[5
])
  if len(output) == 8:

print(output[0],'+',output[1],'+',output[2],'+',output[3],'+',output[4],'+',output[5
],'+',output[6])
  if len(output) == 9:
```

```
print(output[0],'+',output[1],'+',output[2],'+',output[3],'+',output[4],'+',output[5
],'+',output[6],'+',output[7])
  if len(output) == 10:

print(output[0],'+',output[1],'+',output[2],'+',output[3],'+',output[4],'+',output[5
],'+',output[6],'+',output[7],'+',output[8])
  if len(output) == 11:

print(output[0],'+',output[1],'+',output[2],'+',output[3],'+',output[4],'+',output[5
],'+',output[6],'+',output[7],'+',output[8],'+',output[9])
```