Basecamp Challenge Treasure Hunt

Part I

1. Try to find the ‘system’ in this number series and calculate the sum of the first 100 numbers:

1,2,4,6,7,8,9,10,11,12,14,16,17,….,49,60,61,62,64,………

1. Alice, Bob, Chris and Diana are participating in the New York Marathon. Alice (a nerd) remarks: “look, all our registration numbers are perfect squares!”. Bob (even more nerdish): “And when you increase the numbers with 105, it will be squares again!”. Chris (a prime nerd): “My number has 2 different prime divisors”. What is the registration number of Chris?
2. 1F04E, 1F03A, ?, 1F059, 1F05A, 1F05B
3. Alice is in a very strange elevator: when you press UP, the elevator goes from x to 3x+1 and when you press DOWN and the number is even, it goes to x//2 otherwise the lift goes to x+1. So if you are at 13 and press UP, DOWN, DOWN you are at 10. After UP, DOWN you are at 32. Alice starts at 1 and presses:

UUUUUUUUUUUUDDDDDDDDDDDDDDDDDDDDDDDDUDUDUDUDUDUDUDUDUDUDDDD  
DDDDDDDDDDDDDUDUDUDUDUDDDUUUUUUDDDDUDUDUDUDUDDDDDDDDDUUDDDU  
DDDDDDDDDDDDDDDDDDDDDDDDDDDDDDD

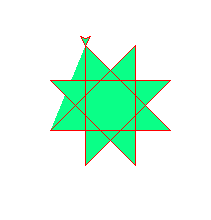
Where is she now? (we must admit: it is a very large building)

1. Alice and Bob are playing a kind of binary mastermind. They have to guess a secret 8 digit code. With every try the number of correct digits (location AND value must be correct) is given:

guesses = [  
("00000000", 5),  
("01011010", 5),  
("01111000", 5),  
("00111100", 5),  
("11101011", 5),  
]

  What is the hidden code?

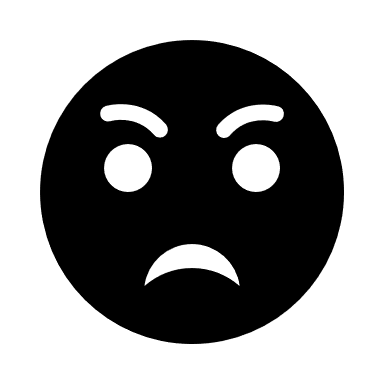
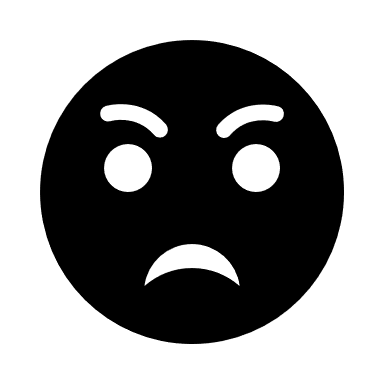
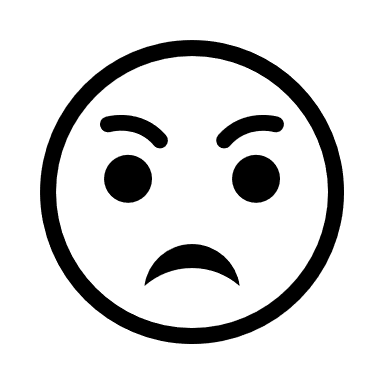
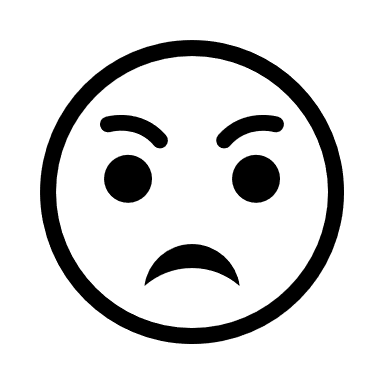
1. If a, b and c are chosen correctly, this program produces this picture:

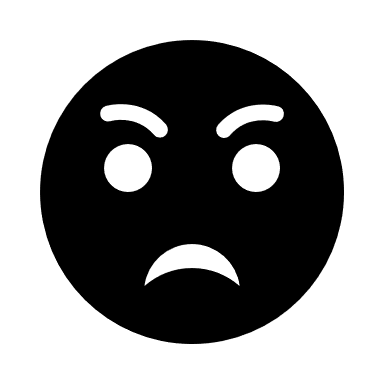
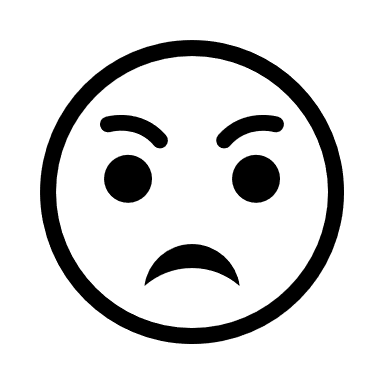
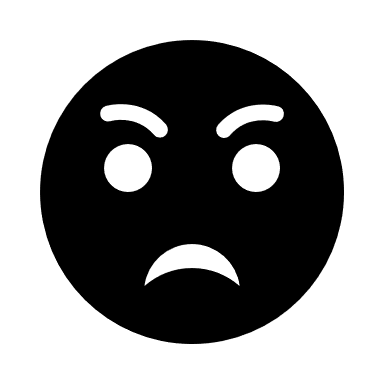
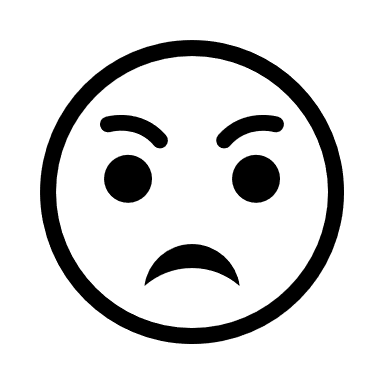
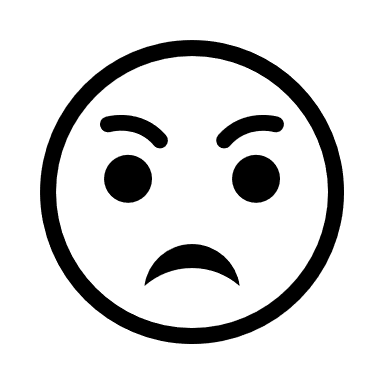
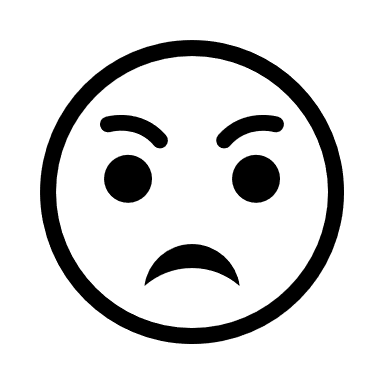


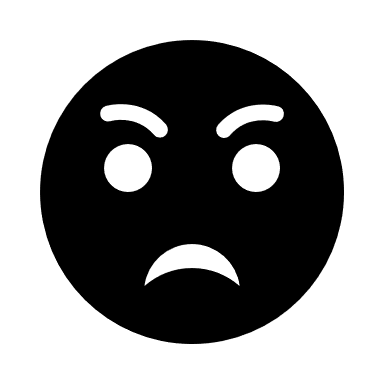
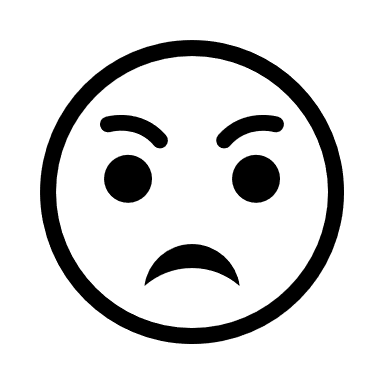
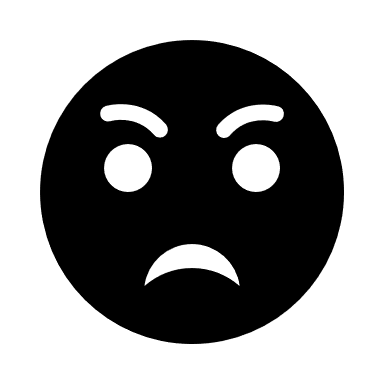
**import** turtle  
  
  
a =   
b =   
c =   
  
t = turtle.Turtle()  
turtle.colormode(b)  
t.fillcolor((a,b,c))  
t.pencolor(**"red"**)  
  
t.begin\_fill()  
**for** i **in** range(a):  
 t.forward(b%c)  
 t.left(c)  
t.end\_fill()  
  
  
turtle.done()  
  
print(a\*b\*c)

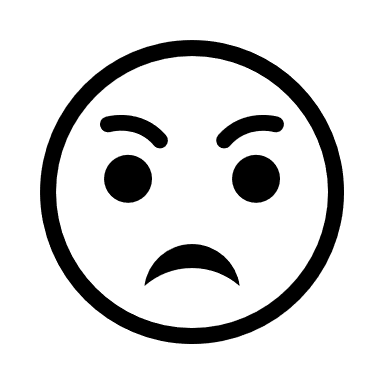
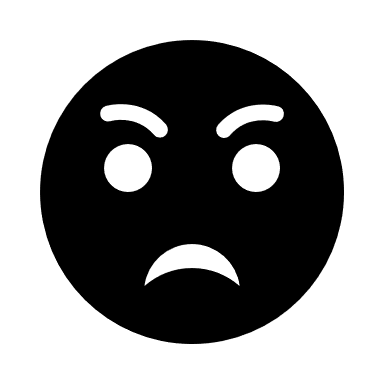
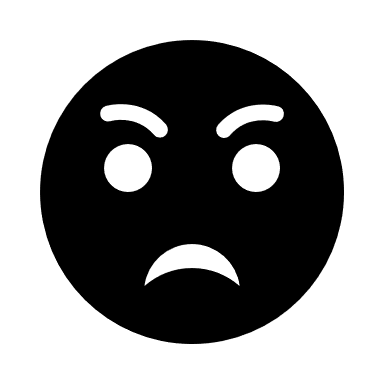
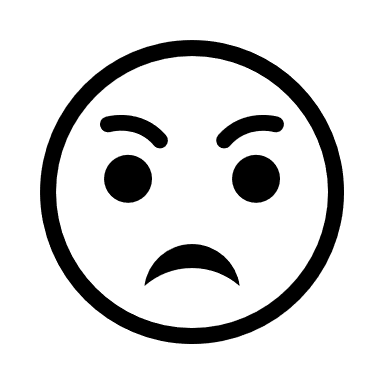
What is the product of a, b and c?

1. **"IF YOU COPY THIS SENTENCE TWO HUNDRED TIMES AND REMOVE ALL WORDS WITH EXACTLY ONE LETTER E IN IT WHAT WILL BE THE THOUSANDTH WORD FOLLOWED BY THE HUNDREDTH WORD "**









1. How many different sets are printed with this code?

for i in range(1,10000):  
 s = set([i\*x\*x%1729 for x in range(1,10000) ])

print(s)

1. Only solvable with hints….. (unless you are an experienced cryptologist)

