For each problem, please write the output in the margin.

**Problem 1: counting**

countdown = 5

while countdown > 1:

 print(countdown)

 countdown -= 1

**Problem 2: loops inside loops**

i = 1

while i <= 3: # i = 1, 2, 3

 j = 1

 while j <= i:

 print(i)

 j += 1

 print('END')

 i += 1

**Problem 3: can we have a *break*, please?**

num = 0

while num < 500:

 num += 100

 print(str(num) + "?")

 if num == 300:

 break

 print('YES')

**Problem 4: we must *continue* practicing loops!**

num = 0

while num < 500:

 num += 100

 print(str(num) + "?")

 if num == 300:

 continue

 print('YES')

**Problem 5: nested loops with a break**

num = 3

while num <= 5:

 is\_prime = True

 potential\_factor = 2

 while potential\_factor < num:

 if num % potential\_factor == 0:

 is\_prime = False

 break

 potential\_factor += 1

 if is\_prime:

 print(str(num) + ' is prime')

 else:

 print(str(num) + ' is not')

 num += 1

**Problem 6: iterating over input**

# assume next() returns 3 the first time it is called,

# 2 the 2nd time, 0 (3rd), 5 (4th), and -1 (5th and beyond)

total = 1

while True:

 num = next()

 if num < 0:

 break

 elif num == 0:

 continue

 total \*= num

print(total)

**Problem 7: heat map**

y = 0

# loop over rows

while y <= 3:

 x = 0

 # loop over columns

 while x <= 3:

 print(x+y, end='')

 x += 1

 print()

 y += 1