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1.

```
fun countdown(n: Int): List<Int>{
if (n < 1) return listOf()
return (n downTo 1).toList()
}
fun main() {
println(countdown(10))
println(countdown(0))
}
```

2.

```
fun generatePyramid(n: Int) {
if (n <= 0){
println("Количество уровней должно быть положительным")
return
}
val maxW = 2 * n - 1
for (level in 1..n) {
val numH = 2*level-1
val hashStr = "#".repeat(numH)
val padding = (maxW - numH)/2
val levelStr = " ".repeat(padding) +hashStr
println(levelStr)
}
}
```

```
fun main() {
generatePyramid(5)
generatePyramid(10)
generatePyramid(1)
generatePyramid(0)
generatePyramid(-1)
}
```

3.

```
fun caesarCipher(text: String, shift:Int): String {
val effShift = shift % 26
return text.map {char ->
when (char){
in 'A'..'Z' -> {
val shifted = 'A' + (char - 'A' + effShift + 26) % 26
shifted
}
in 'a'..'z' -> {
val shifted = 'a' + (char - 'a' + effShift + 26) % 26
shifted
}
else -> char
}
}.joinToString("")
}
}
```

```
fun main() {

val text = "Hello, World! 123"

val shift = 3

val negShift = -1

println("Оригинал: $text")

println("Сдвиг $shift:'${caesarCipher(text, shift)}'")

println("Сдвиг $negShift: '${caesarCipher(text, negShift)}'")
```

4.

```
fun fizzBuzz(n: Int): List<String>{

if (n < 1) return listOf()

return (1..n).map { num ->

when{

num % 3 == 0 && num % 5 == 0 -> "ВизллБизлл"

num % 3 == 0 -> "Физллл"

num % 5 == 0 -> "Бизлллл"

else -> num.toString()

}

}

}

fun main() {

println(fizzBuzz(15))

println(fizzBuzz(0))

}
```