Sample outputs

$ python3 quiz_2.py
Input a nonnegative integer: 0
The encoded set is: {}
The derived encoded set is: {}
$ python3 quiz_2.py
Input a nonnegative integer: 1
The encoded set is: {0}
The derived encoded set is: {0}
$ python3 quiz_2.py
Input a nonnegative integer: 2
The encoded set is: {-1}
The derived encoded set is: {-1}
$ python3 quiz_2.py
Input a nonnegative integer: 3
The encoded set is: {-1, 0}
The derived encoded set is: {-1}
$ python3 quiz_2.py
Input a nonnegative integer: 4
The encoded set is: {1}
The derived encoded set is: {1}
$ python3 quiz_2.py
Input a nonnegative integer: 5
The encoded set is: {0, 1}
The derived encoded set is: {0, 1}
$ python3 quiz_2.py
Input a nonnegative integer: 6
The encoded set is: {-1, 1}
The derived encoded set is: {-1, 0}
Input a nonnegative integer: 7
The encoded set is: {-1, 0, 1}
The derived encoded set is: {-1, 0}
Input a nonnegative integer: 100
The encoded set is: {-3, 1, 3}
The derived encoded set is: {-3, -2, 1}
$ python3 quiz_2.py
Input a nonnegative integer: 123
The encoded set is: {-3, -2, -1, 0, 2, 3}
The derived encoded set is: {-6, -5, -4, -3, -1}
Input a nonnegative integer: 1234
The encoded set is: {-4, -1, 2, 3, 5}
The derived encoded set is: {-5, -4, -3, 0, 5}