$L = 2^6 = 2^3 = 8$

$\text{Step}(\Delta) = \frac{20 + 20}{8} = 5$

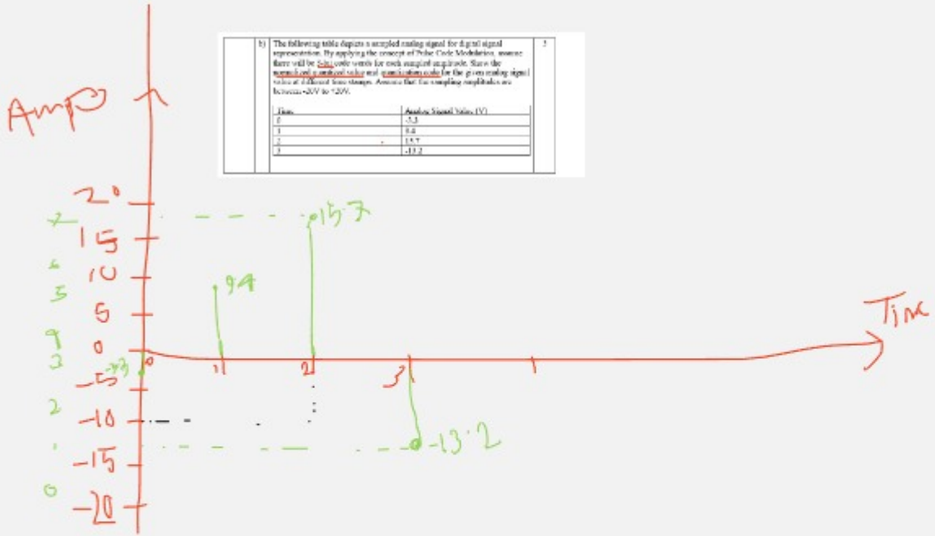
interval

[-20, -15), [-15, -10), [-10, -5), [-5, 0), [0, 5), [5, 10), [10, 15), [15, 20]

0 1 2 3 4 5 6 7

b) The following table depicts a sampled analog signal for digital signal representation. By applying the concept of Pulse Code Modulation, assume there will be 3-bit code words for each sampled amplitude. Show the normalized amplitude value and quantization code for the given analog signal value at different time stamps. Assume that the sampling amplitudes are between -20V to +20V.

Time	Analog Signal Value (V)
0	-3.3
1	9.4
2	15.7
3	-13.2



time	PAM	NORM PAM	NORM QUAN	Norm error	Qun code	Encoded code
0	-3.3	-0.06	$-2.5/5 = -0.5$	0.16	3	011
1	9.4	1.88	$7.5/5$		5	101
2	15.7	3.14	$12.5/5$		7	111
3	-13.2	2.64	$-12.5/5$		1	001