

(1) (5 pts) Determine whether each of the following codes is a Huffman code or not. Explain why or why not.

$X$	$\Pr\{X = a_i\}$	$\alpha_1(a_i)$	$\alpha_2(a_i)$
$a_0$	0.30	10	00
$a_1$	0.19	01	10
$a_2$	0.18	00	010
$a_3$	0.15	111	011
$a_4$	0.13	1100	110
$a_5$	0.05	1101	111

(2) (5 pts) Use the variable-length Ziv-Lempel Algorithm discussed in class to encode the following 34-bit sequence. Determine the compression rate of the Ziv-Lempel Algorithm for this sequence.

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