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Final DMA

Q3:

1) $S = \frac{1}{1.3} + \frac{1}{3.5} + \frac{1}{5.7} + \dots + n^{th}\ term$

$$S = \sum_{r=1}^{n} \frac{1}{r(r+2)}$$

$$S = \sum_{r=1}^{n} \left(\frac{r+2-r}{r(r+2)} \right)$$

$$S = \frac{1}{2} \left\{ \sum_{r=1}^{n} \left(\frac{1}{r} - \frac{1}{r+2} \right) \right\}$$

$$S = \frac{1}{2} \left\{ 1 + \frac{1}{2} - \frac{1}{n+1} - \frac{11}{n+2} \right\}$$

Q7:

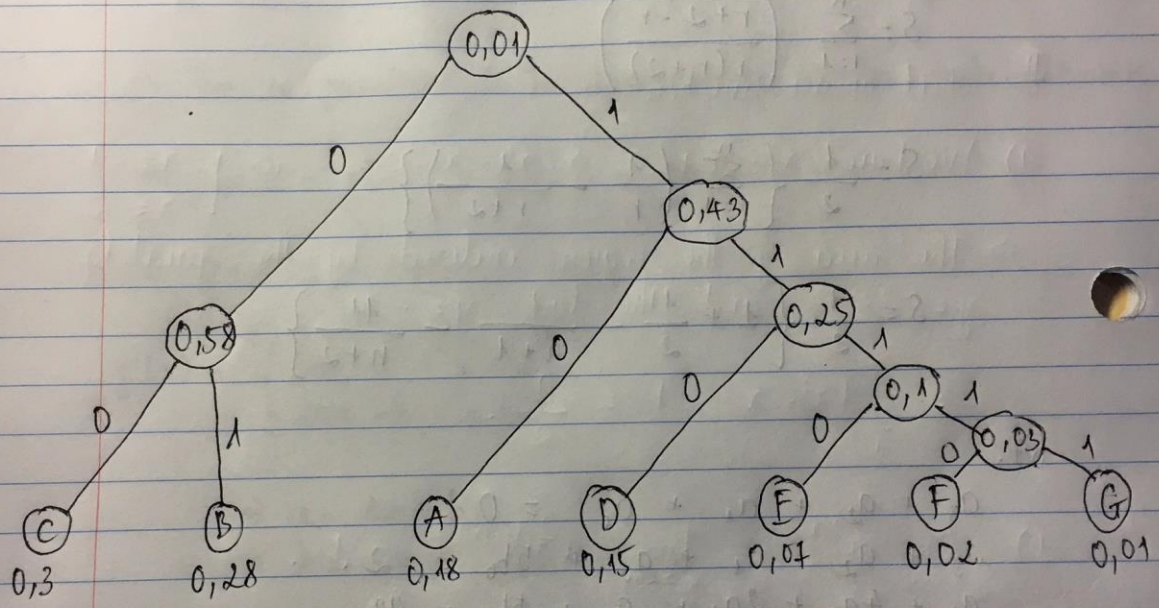
$$a_3 + a_2 + a_1 + a_0 = 0.$$
$$a_3 + a_2 + a_1 + a_0 + 5b_0 = 2.$$
$$a_3 + 4a_2 + 2a_1 + a_0 + 5b_0 = 4$$
$$6a_3 + 2a_2 + 3a_1 + a_0 + 5b_0 = 6$$
$$a_3 + 2a_2 + 4a_1 + a_0 + 2b_0 = 6$$
$$6a_3 + 4a_2 + 5a_1 + a_0 + 4b_0 = 1.$$

Q9:

Round	A	B	C	D
1	0, -	∞, -	∞, -	∞, -
2		4, A	-2, A	∞, -
3		-5, C		0, C
4				-6, B

Q 11:

		Code
A	0,18	10
B	0,28	01
C	0,3	00
D	0,15	110
E	0,07	1110
F	0,02	11110
G	0,01	11111



Q 8: