

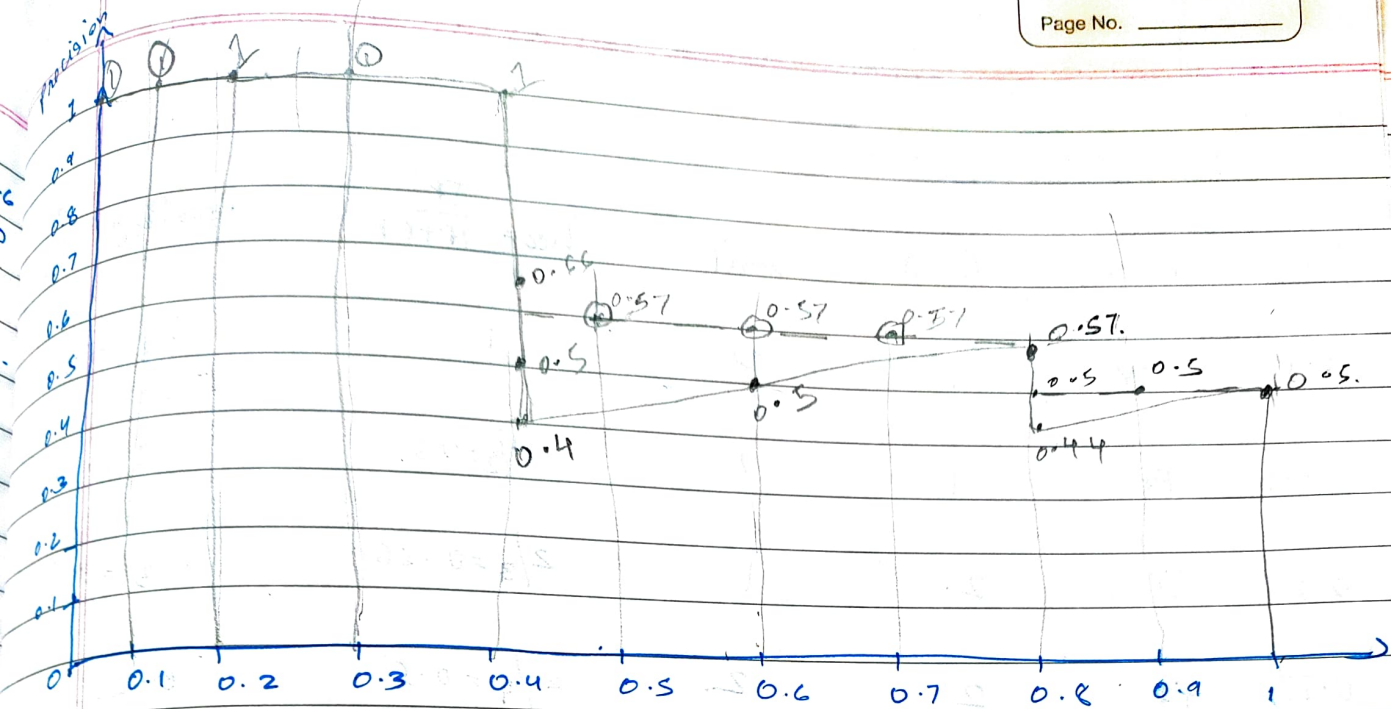
TP + FN = ground truth.

MAPE

Q1]

Prob:	0.97	0.92	0.88	0.79	0.75	0.7	0.7	0.69	0.61
	TP	TP	FP	FP	FP	TP	TP	FP	FP

Probability	Match	Cum. TP	Cum FP	Precision = $\frac{TP}{TP+FP}$	Recall = $\frac{TP}{TP+FP}$
0.97	TP	1	0	$\frac{1}{1+0} = 1$	$\frac{1}{5} = 0.2$
0.92	TP	2	0	$\frac{2}{2} = 1$	$\frac{2}{5} = 0.4$
0.88	FP	2	1	$\frac{2}{3} = 0.66$	$\frac{2}{5} = 0.4$
0.79	FP	2	2	$\frac{2}{4} = 0.5$	$\frac{2}{5} = 0.4$
0.75	FP	2	3	$\frac{2}{5} = 0.4$	0.4
0.7	TP	3	3	$\frac{3}{6} = 0.5$	$\frac{3}{5} = 0.6$
0.7	TP	4	3	$\frac{4}{7} = 0.57$	$\frac{4}{5} = 0.8$
0.7	FP				
0.69	FP	4	4	$\frac{4}{8} = 0.5$	$\frac{4}{5} = 0.8$
0.61	FP	4	5	$\frac{4}{9} = 0.44$	$\frac{4}{5} = 0.8$
0.60	TP	5	5	$\frac{5}{10} = 0.5$	$\frac{5}{5} = 1$



Recall

$$\text{Interpolation} = 0 = 1 \times 1 + (4 \times 0.57) + (2 \times 0.5)$$

$$\text{Precision} = 8.28$$

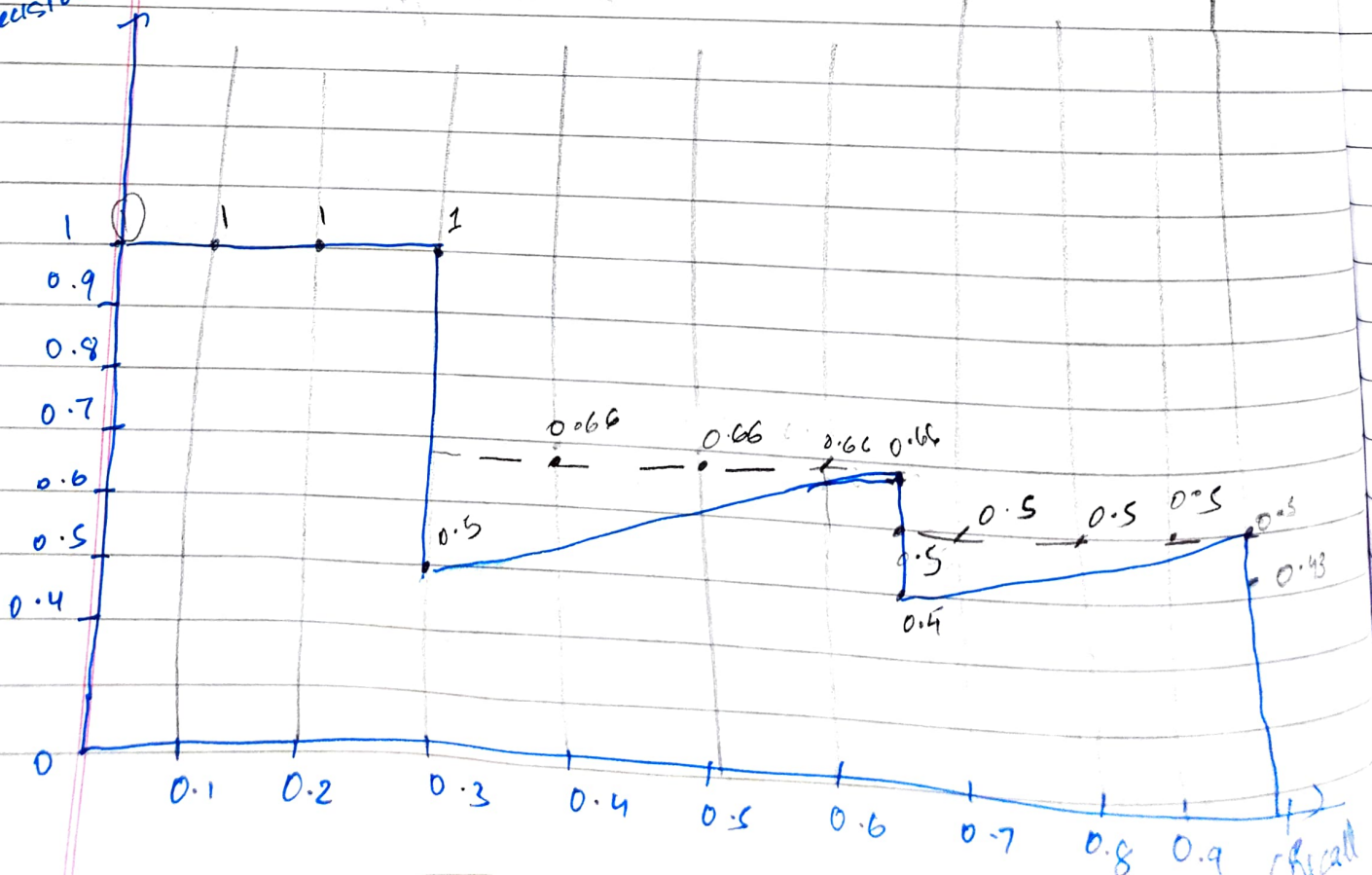
$$\text{Avg. Precision} = \frac{8.28}{11} = 0.7527$$

$$= 75.27\%$$

Q2.]

Prob.	Matches	Cum.TP	Cum.FP	Prec = $\frac{TP}{TP+FP}$	Recall = $\frac{TP}{\text{Total}}$
0.95	TP	1	0	1	$\frac{1}{3} = 0.3$
0.89	FP	1	1	$\frac{1}{2} = 0.5$	$\frac{1}{3} = 0.3$
0.8	TP	2	1	$\frac{2}{3} = 0.66$	$\frac{2}{3} = 0.66$
0.77	FP	2	2	$\frac{2}{4} = 0.5$	0.66
0.7	FP	2	3	$\frac{2}{5} = 0.4$	0.66
0.69	TP	3	3	$\frac{3}{6} = 0.5$	1
0.61	FP	3	4	$\frac{3}{7} = 0.43$	1

Precision



$$\text{Area Intupolation} = (4 \times 1) + (8 \times 0.66) + (4 \times 0.5)$$

Precision

$$= 7.98$$

$$\text{Avg Precision} = \frac{7.98}{11} = 72.54\%$$

Category	(0.0)	(0.2)	(0.4)	(0.6)	(0.8)	(1.0)
A	0	0	1	1.0	1.0	5.0
B	0	1	0	1.0	1.0	2.0
C	0	0	1	20.0	2.0	20.0
D	1	0	0	20.0	5.0	20.0
E	0	1	0	1.0	5.0	2.0
F	0	1	0	20.0	5.0	20.0