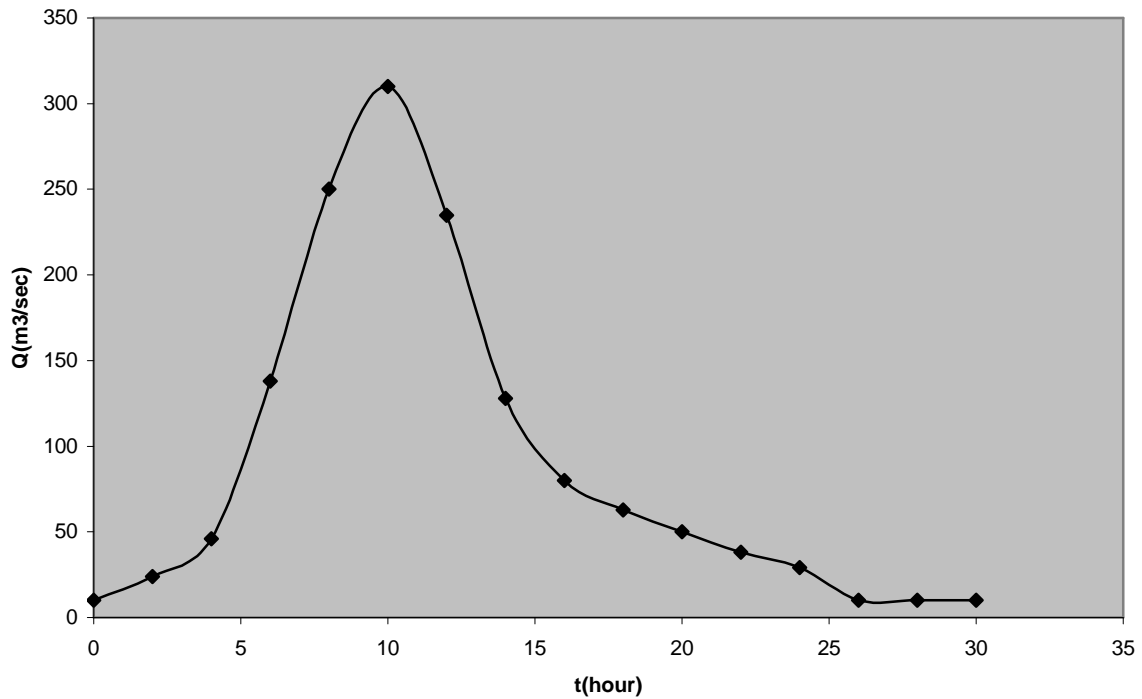


Basin Area = $116\text{km}^2 = 116 \times 10^6 \text{m}^2$

When we draw the hydrograph of our basin according to table, we find the graph below

Total Flow Hydrograph



Our volume of the direct runoff is,

$$V = 9172320.462\text{m}^3$$

so,

$$d_{df} = \frac{V}{A} = 0.079072\text{m} = 7.907\text{cm}$$

After that we make a table according to these information:

we noticed that base flow is about $10 \frac{\text{m}^3}{\text{sec}}$

$$Q_{df} = Q - 10$$

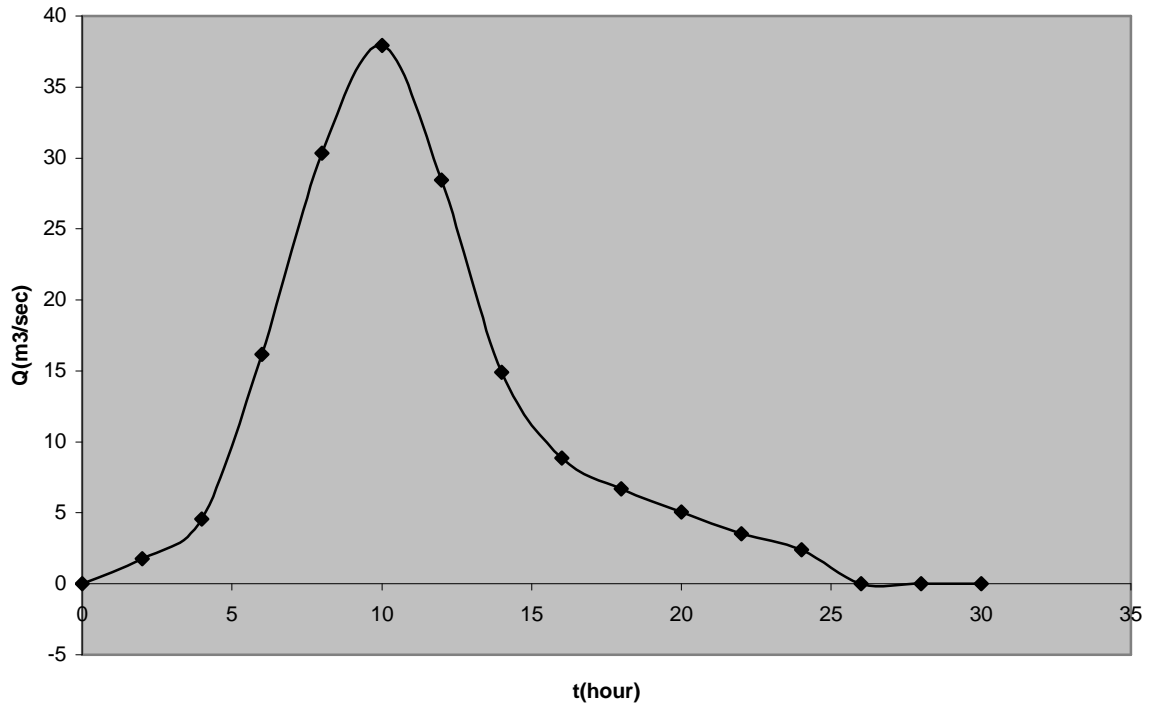
$$Q_{unit} = Q_{df} / 7.907$$

t	Q	Q_{df}	Q_{unit}
0	10	0	0
2	24	14	1.770583
4	46	36	4.552928
6	138	128	16.18819
8	250	240	30.35285
10	310	300	37.94106
12	235	225	28.4558
14	128	118	14.92349
16	80	70	8.852915
18	63	53	6.702921
20	50	40	5.058809
22	38	28	3.541166

24	29	19	2.402934
26	10	0	0
28	10	0	0
30	10	0	0

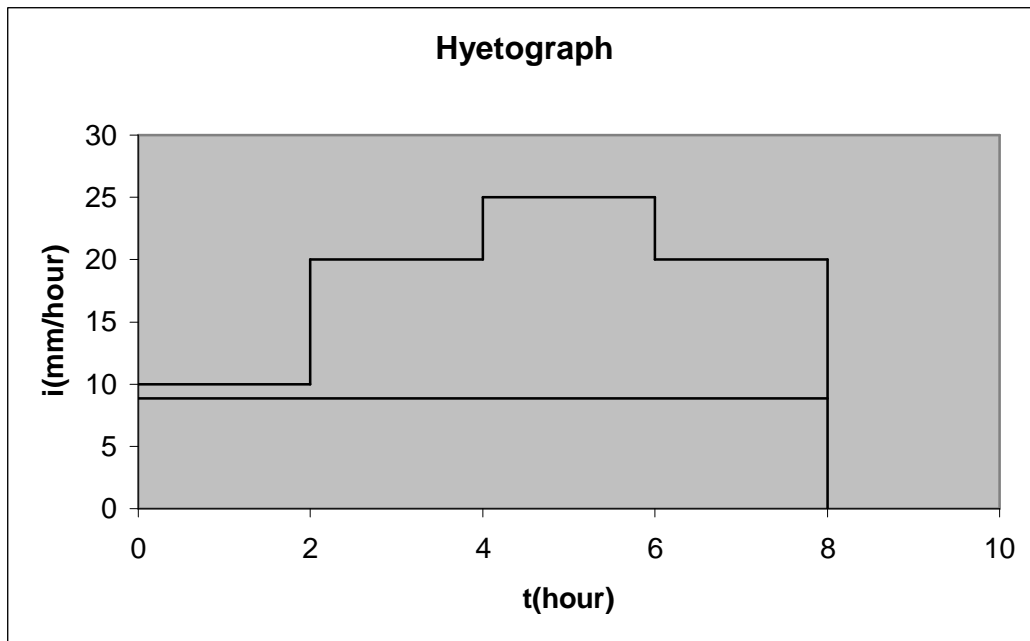
After that now we may draw the unit hydrograph,

Unit Hydrograph



we should then make the table of intensity,

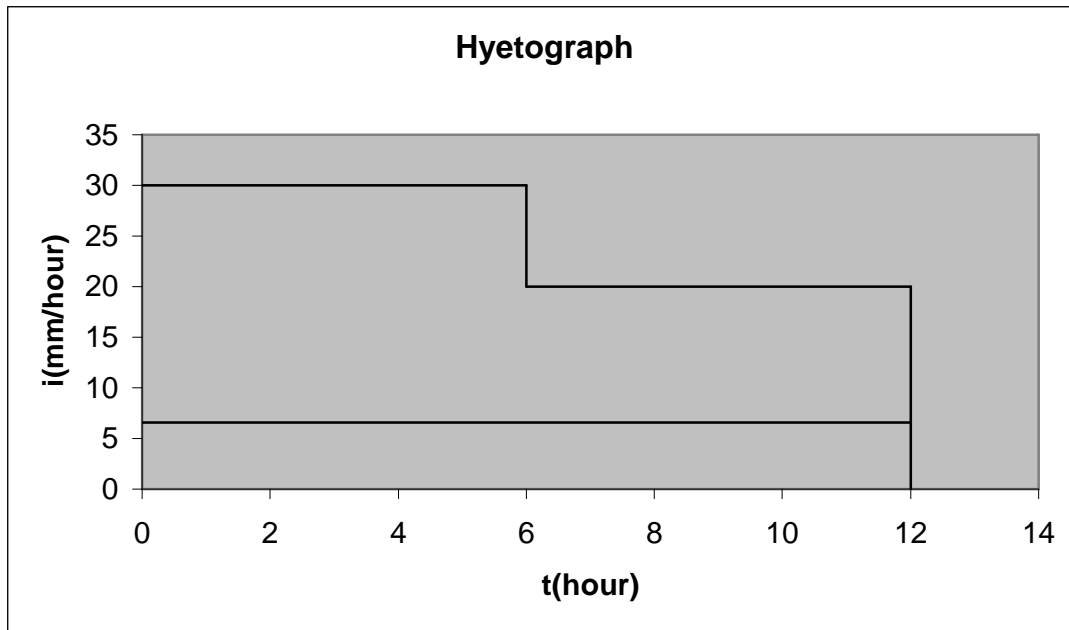
t(hour)	2	4	6	8
i(cm/hour)	1.0	2.0	2.5	2.0



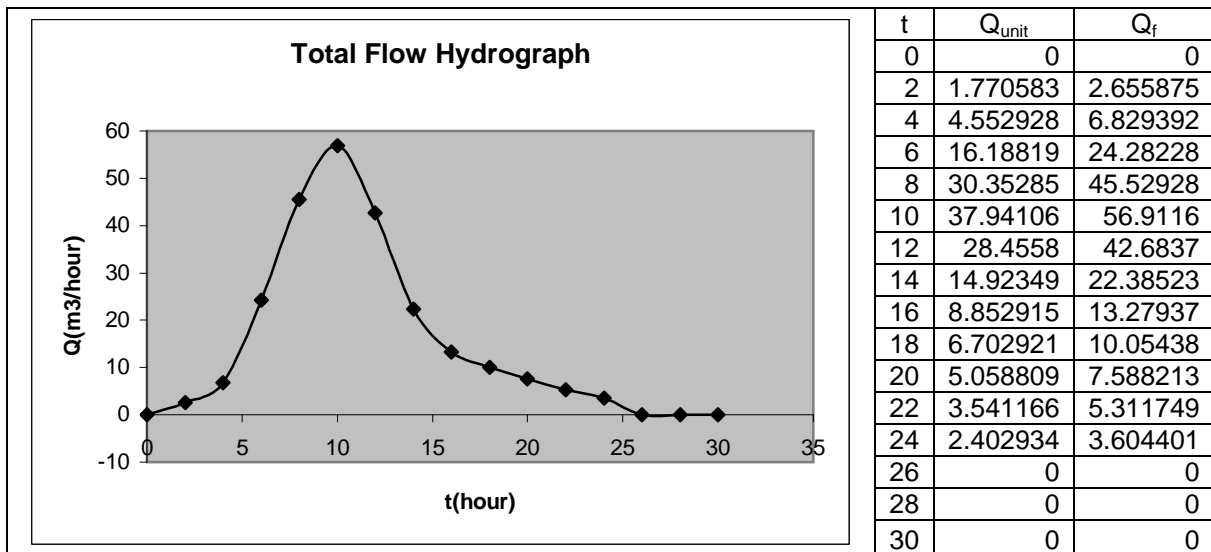
We see here that duration time is 8 hours.

Our second intensity table is given below.

t(hour)	6	12
i(cm/hour)	3.0	2.0



Here duration is 12 hour, so we will multiply unit hydrograph by 12/8 to evaluate total flow hydrograph.



t	Q _{unit}	Q _f
0	0	0
2	1.770583	2.655875
4	4.552928	6.829392
6	16.18819	24.28228
8	30.35285	45.52928
10	37.94106	56.9116
12	28.4558	42.6837
14	14.92349	22.38523
16	8.852915	13.27937
18	6.702921	10.05438
20	5.058809	7.588213
22	3.541166	5.311749
24	2.402934	3.604401
26	0	0
28	0	0
30	0	0