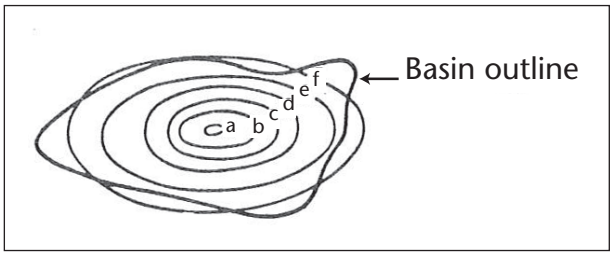

Figure 2.16. Critical isohyetal pattern over 3 000 km² basin

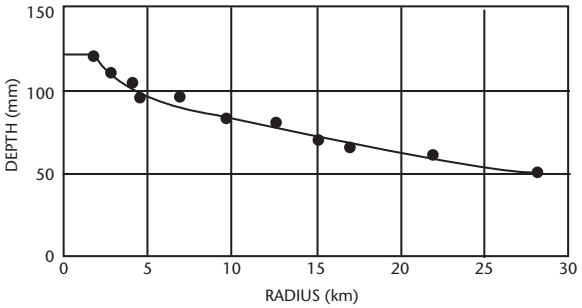

Figure 2.17. Isohyetal profile constructed from data in Table 2.3

thus observed storms characteristic of the basin need to be studied to define the correct chronological sequence. Furthermore, it is often unlikely to produce maximum runoff for the amounts of rainfall involved.

2.12.2 Chronological order based on an observed storm

A more realistic, and generally more critical, chronological order is usually obtained from some storm producing critical runoff amounts and rates in or near the project basin. Table 2.5 presents an example of how the order of the 6-hour PMP increments might be rearranged to agree with the chronological order of a critical observed storm. Note that this procedure leads to rainfall amounts equal to PMP for several durations, hence, higher runoff than would be obtained using a maximized storm as described in section 2.11.2, where usually only one maximized value equals PMP.

Table 2.3. Isohyetal profile computation

Total area (km²)[a]	*Net area (km²)*[b]	*Average depth (mm)*[c]	*Accumulated rain volume (km² mm)*[d]	*Net rain volume (km² mm)*[e]	*Volume area (mm)*[f]	*Average area (km²)*[g]	*Equivalent circle radius (km)*[h]
10	10	122	1 220	1 220	122	10	1.8
40	30	113	4 520	3 300	110	25	2.8
60	20	110	6 600	2 080	104	50	4.0
80	20	107	8 560	1 960	98	70	4.7
100	20	105	10 500	1 940	97	90	5.3
200	100	100	20 000	9 500	95	150	6.9
400	200	92	36 800	16 800	84	300	9.8
600	200	88	52 800	16 000	80	500	12.6
800	200	84	67 200	14 400	72	700	15.0
1 000	200	81	81 000	13 800	68	900	16.9
2 000	1 000	71	142 000	61 000	61	1 500	21.9
3 000	1 000	64	192 000	50 000	50	2 500	28.2

[a] Column 1: standard sized areas
[b] Column 2: successive subtraction of Column 1 items
[c] Column 3: maximum average depths from 6-hour within-storm curve of Figure 2.15 for area sizes in Column 1
[d] Column 4: product of Column 1 and Column 3 entries
[e] Column 5: successive subtraction of Column 4 items
[f] Column 6: Column 5 divided by Column 2
[g] Column 7: average of two consecutive areas in Column 1
[h] Column 8: radius of circle with area of Column 7

Data from columns 6 and 8 are then used to construct the curve of Figure 2.17.