

Tebal hujan harian maksimum Stasiun Bandung (BMG)

Tahun	R mak (mm)	Durasi (menit) dan Tebal Hujan (mm)								
		5	10	15	45	60	120	180	360	720
1975	100	1,285	2,161	2,929	6,676	8,284	13,932	18,884	31,758	53,411
1976	66	0,848	1,426	1,933	4,406	5,467	9,195	12,463	20,960	35,251
1977	81	1,041	1,750	2,372	5,408	6,710	11,285	15,296	25,724	43,263
1978	91	1,169	1,966	2,665	6,075	7,539	12,678	17,184	28,900	48,604
1979	80	1,028	1,729	2,343	5,341	6,627	11,146	15,107	25,407	42,729
1980	71	0,912	1,534	2,079	4,740	5,882	9,892	13,407	22,548	37,922
1981	80	1,028	1,729	2,343	5,341	6,627	11,146	15,107	25,407	42,729
1982	110	1,413	2,377	3,222	7,344	9,112	15,325	20,772	34,934	58,752
1983	89	1,144	1,923	2,607	5,942	7,373	12,400	16,806	28,265	47,536
1984	51	0,655	1,102	1,494	3,405	4,225	7,105	9,631	16,197	27,240
1985	71	0,912	1,534	2,079	4,740	5,882	9,892	13,407	22,548	37,922
1986	72	0,925	1,556	2,109	4,807	5,965	10,031	13,596	22,866	38,456
1987	73	0,938	1,577	2,138	4,874	6,047	10,170	13,785	23,184	38,990
1988	64	0,822	1,383	1,874	4,273	5,302	8,917	12,086	20,325	34,183
1989	76	0,976	1,642	2,226	5,074	6,296	10,588	14,352	24,136	40,592
1990	82	1,054	1,772	2,402	5,475	6,793	11,424	15,485	26,042	43,797
1991	69	0,887	1,491	2,021	4,607	5,716	9,613	13,030	21,913	36,854
1992	92	1,182	1,988	2,695	6,142	7,621	12,818	17,373	29,218	49,138
1993	65	0,835	1,405	1,904	4,340	5,385	9,056	12,274	20,643	34,717
1994	59	0,758	1,275	1,728	3,939	4,888	8,220	11,141	18,737	31,512
1995	69	0,887	1,491	2,021	4,607	5,716	9,613	13,030	21,913	36,854
1996	82	1,054	1,772	2,402	5,475	6,793	11,424	15,485	26,042	43,797
1997	105	1,349	2,269	3,075	7,010	8,698	14,629	19,828	33,346	56,081
rerata	78,17	1,004	1,689	2,29	5,219	6,476	10,891	14,762	24,827	41,75
stdev	14,61	0,188	0,316	0,428	0,975	1,2102	2,035	2,7587	4,640	7,803
Cs	0,501									

perhitungan tebal hujan tiap durasi pada periode ulang T

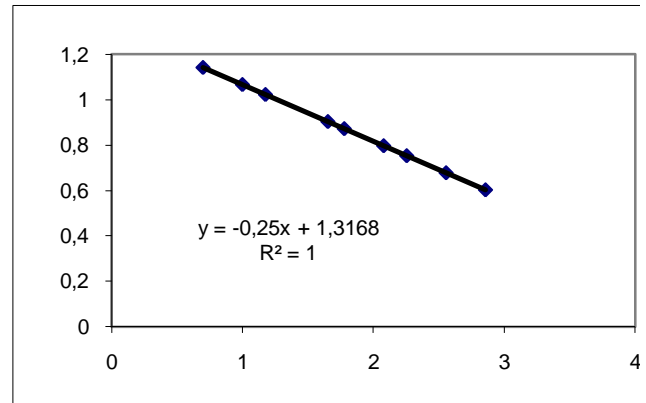
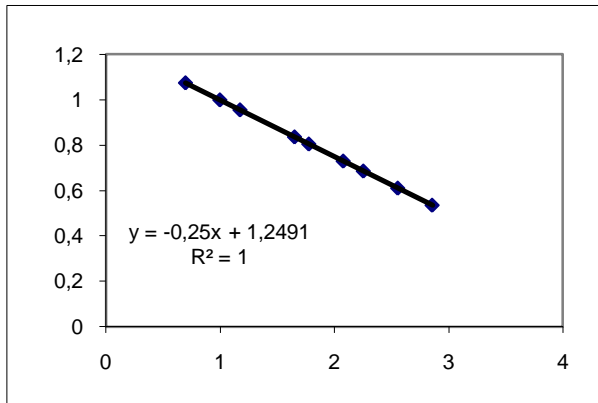
T (tahun)	K	Tebal Hujan (mm) pada Durasi (menit)								
		5	10	15	45	60	120	180	360	720
2	-0,083	0,989	1,663	2,254	5,138	6,376	10,722	14,533	24,442	41,106
5	0,807	1,156	1,944	2,635	6,006	7,453	12,534	16,988	28,571	48,050
10	1,322	1,253	2,107	2,855	6,509	8,076	13,582	18,409	30,961	52,070
20	1,774	1,337	2,249	3,049	6,950	8,623	14,502	19,657	33,058	55,597
25	1,911	1,363	2,292	3,107	7,083	8,788	14,780	20,033	33,691	56,661
50	2,313	1,439	2,419	3,279	7,475	9,275	15,599	21,142	35,557	59,799
100	2,69	1,509	2,538	3,440	7,843	9,731	16,366	22,182	37,306	62,741
200	3,048	1,576	2,651	3,594	8,192	10,164	17,094	23,169	38,966	65,533

perhitungan Intensitas hujan tiap durasi pada periode ulang T

T (tahun)	Intensitas Hujan (mm) pada Durasi (menit)								
	5	10	15	45	60	120	180	360	720
2	11,866	9,978	9,017	6,851	6,376	5,361	4,844	4,074	3,426
5	13,871	11,664	10,540	8,008	7,453	6,267	5,663	4,762	4,004
10	15,031	12,640	11,421	8,678	8,076	6,791	6,136	5,160	4,339
20	16,050	13,496	12,195	9,266	8,623	7,251	6,552	5,510	4,633
25	16,357	13,754	12,428	9,444	8,788	7,390	6,678	5,615	4,722
50	17,263	14,516	13,117	9,967	9,275	7,799	7,047	5,926	4,983
100	18,112	15,230	13,762	10,457	9,731	8,183	7,394	6,218	5,228
200	18,918	15,908	14,374	10,922	10,164	8,547	7,723	6,494	5,461

t	I	log t	log I
(menit)	(mm/jam)	(menit)	(mm/jam)
5	11,866	0,699	1,074
10	9,978	1	0,999
15	9,017	1,176	0,955
45	6,851	1,653	0,836
60	6,376	1,778	0,805
120	5,361	2,079	0,729
180	4,844	2,255	0,685
360	4,074	2,556	0,61
720	3,426	2,857	0,535

t	I	log t	log I
(menit)	(mm/jam)	(menit)	(mm/jam)
5	13,871	0,699	1,1421
10	11,664	1	1,0668
15	10,540	1,1761	1,0228
45	8,008	1,6532	0,9035
60	7,453	1,7782	0,8723
120	6,267	2,0792	0,797
180	5,663	2,2553	0,753
360	4,762	2,5563	0,6778
720	4,004	2,8573	0,6025



$I = a/t^m$
 $\log I = \log a - m \log t$
 bila $\log I = Y$
 $\log a = A$
 $m \log t = BX$
 maka $Y = A + BX$
 untuk $\log t = X$
 maka $B = -m$

$A = \log a = 1,249$
 $a = 17,746$
 $B = -m; B = -0,25$
 $m = 0,250$

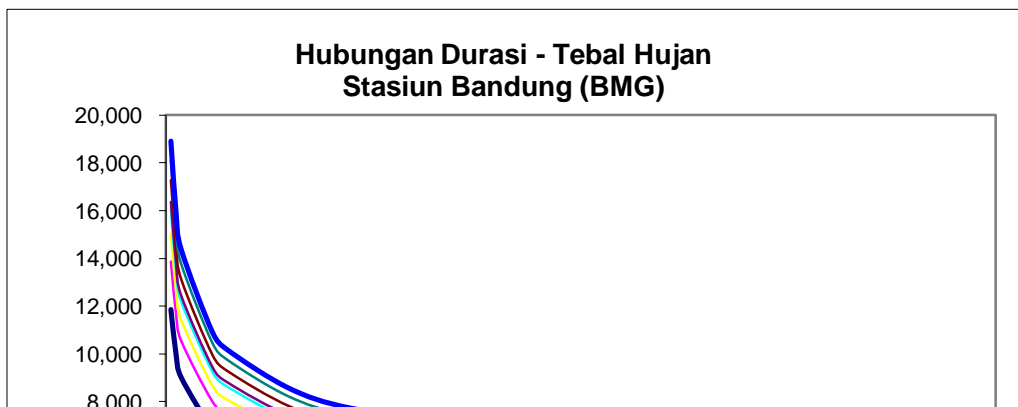
$$I = 17,746 / t^{0,250}$$

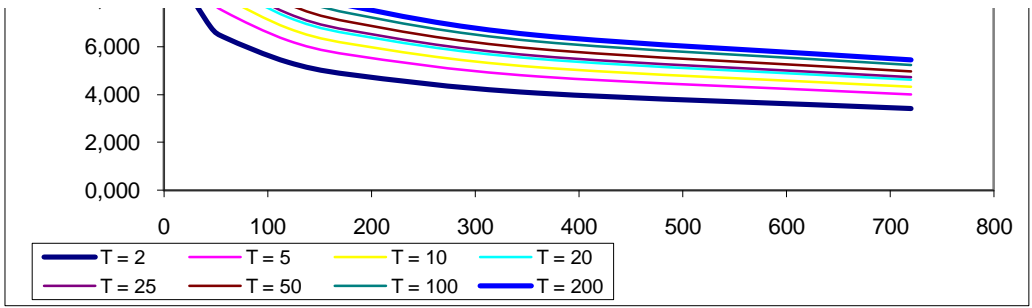
$A = \log a = 1,317$
 $a = 20,740$
 $B = -m; B = -0,25$
 $m = 0,250$

$$I = 20,740 / t$$

durasi TEBAL HUJAN (mm) dgn KALA ULANG T TAHUN

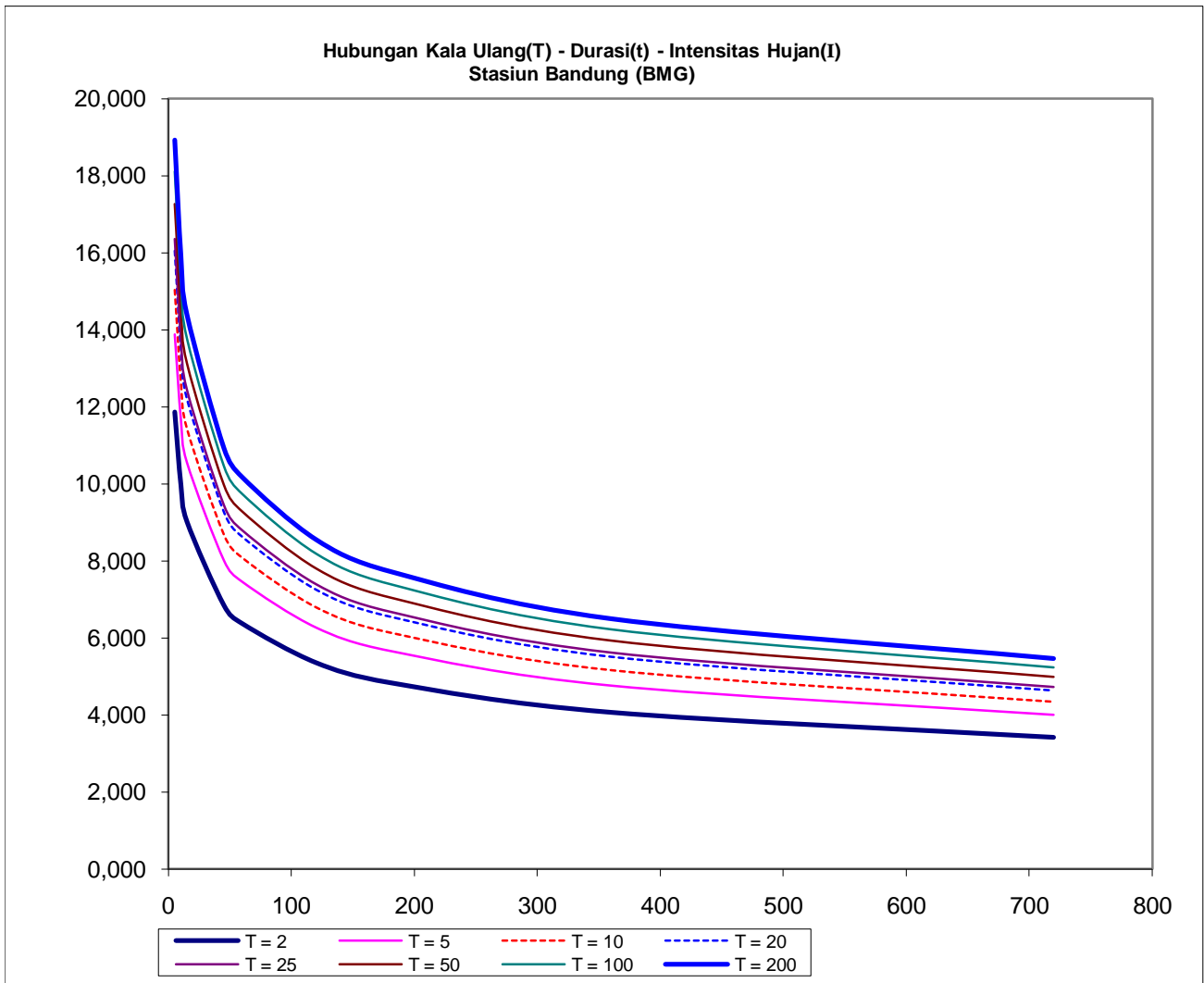
(menit)	T = 2	T = 5	T = 10	T = 20	T = 25	T = 50	T = 100	T = 200
5	11,867	13,870	15,030	16,049	16,355	17,261	18,111	18,917
10	9,979	11,663	12,639	13,496	13,753	14,515	15,230	15,908
15	9,017	10,539	11,420	12,195	12,427	13,115	13,762	14,374
45	6,852	8,008	8,678	9,266	9,443	9,966	10,457	10,922
60	6,376	7,452	8,075	8,623	8,788	9,274	9,731	10,164
120	5,362	6,266	6,791	7,251	7,389	7,798	8,183	8,547
180	4,845	5,662	6,136	6,552	6,677	7,047	7,394	7,723
360	4,074	4,761	5,160	5,510	5,615	5,926	6,218	6,494
720	3,426	4,004	4,339	4,633	4,721	4,983	5,228	5,461





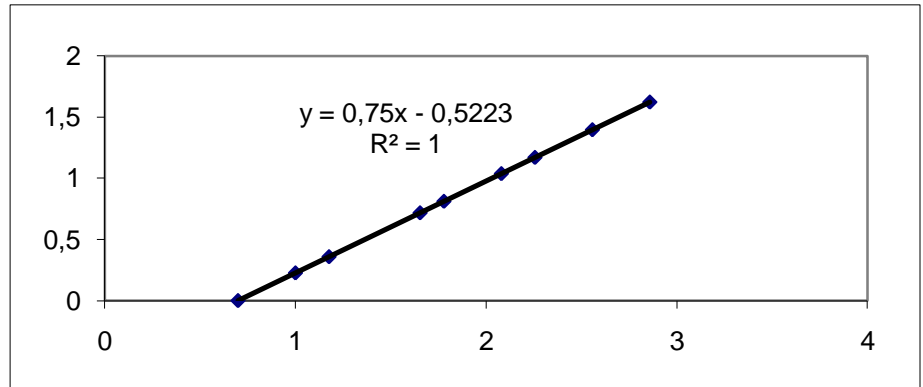
durasi (menit)	INTENSITAS HUJAN (mm) dgn KALA ULANG T TAHUN							
	T = 2	T = 5	T = 10	T = 20	T = 25	T = 50	T = 100	T = 200
5	11,866	13,871	15,031	16,050	16,357	17,263	18,112	18,918
10	9,978	11,664	12,640	13,496	13,754	14,516	15,230	15,908
15	9,017	10,540	11,421	12,195	12,428	13,117	13,762	14,374

45	6,851	8,008	8,678	9,266	9,444	9,967	10,457	10,922
60	6,376	7,453	8,076	8,623	8,788	9,275	9,731	10,164
120	5,361	6,267	6,791	7,251	7,390	7,799	8,183	8,547
180	4,844	5,663	6,136	6,552	6,678	7,047	7,394	7,723
360	4,074	4,762	5,160	5,510	5,615	5,926	6,218	6,494
720	3,426	4,004	4,339	4,633	4,722	4,983	5,228	5,461



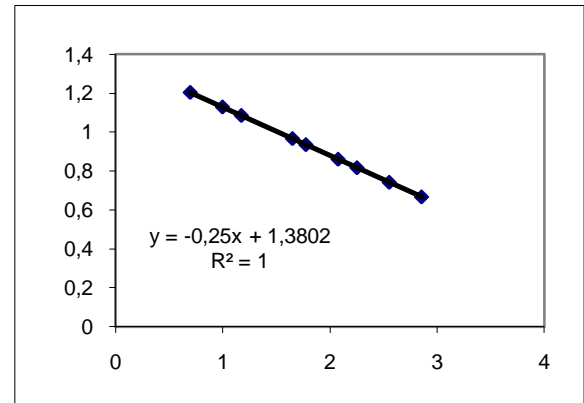
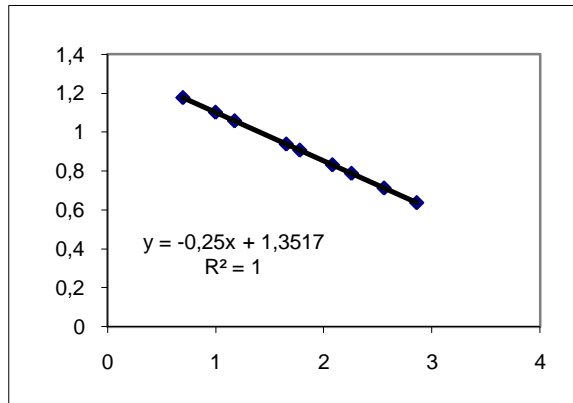
durasi	Rrerata	log t	log R
5	1,0044	0,69897	0,0019
10	1,6892	1	0,2277
15	2,290	1,17609	0,3598
45	5,2192	1,65321	0,7176
60	6,476	1,77815	0,8113
120	10,891	2,07918	1,0371
180	14,762	2,25527	1,1691
360	24,827	2,5563	1,3949
720	41,753	2,85733	1,6207

$\log k = -0,5223$ $H = 0,3004$ $t^{0,75}$
 $k = 0,3004$
 $m = 0,75$



t	I	log t	log I
(menit)	(mm/jam)	(menit)	(mm/jam)
5	15,031	0,699	1,177
10	12,640	1	1,102
15	11,421	1,176	1,058
45	8,678	1,653	0,938
60	8,076	1,778	0,907
120	6,791	2,079	0,832
180	6,136	2,255	0,788
360	5,160	2,556	0,713
720	4,339	2,857	0,637

t	I	log t	log I
(menit)	(mm/jam)	(menit)	(mm/jam)
5	16,050	0,699	1,205
10	13,496	1	1,13
15	12,195	1,176	1,086
45	9,266	1,653	0,967
60	8,623	1,778	0,936
120	7,251	2,079	0,86
180	6,552	2,255	0,816
360	5,510	2,556	0,741
720	4,633	2,857	0,666



$$\begin{aligned}
 A = \log a &= 1,3517 \\
 a &= 22,475 \\
 B = -m; B &= -0,25 \\
 m &= 0,250
 \end{aligned}$$

$$\begin{aligned}
 A = \log a &= 1,38 \\
 a &= 23,999 \\
 B = -m; B &= -0,25 \\
 m &= 0,250
 \end{aligned}$$

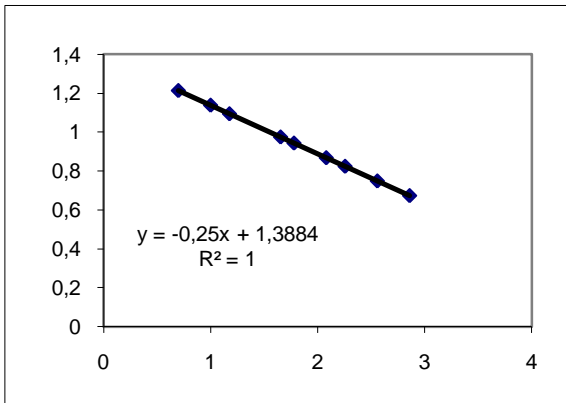
0,250

$$I = 22,475 / t^{0,250}$$

$$I = 23,999 / t^{0,250}$$

t	I	log t	log I
(menit)	(mm/jam)	(menit)	(mm/jam)
5	16,357	0,699	1,214
10	13,754	1	1,138
15	12,428	1,176	1,094
45	9,444	1,653	0,975
60	8,788	1,778	0,944
120	7,390	2,079	0,869
180	6,678	2,255	0,825
360	5,615	2,556	0,749
720	4,722	2,857	0,674

t	I	log t	log I
(menit)	(mm/jam)	(menit)	(mm/jam)
5	17,263	0,699	1,237
10	14,516	1	1,162
15	13,117	1,176	1,118
45	9,967	1,653	0,999
60	9,275	1,778	0,967
120	7,799	2,079	0,892
180	7,047	2,255	0,848
360	5,926	2,556	0,773
720	4,983	2,857	0,698



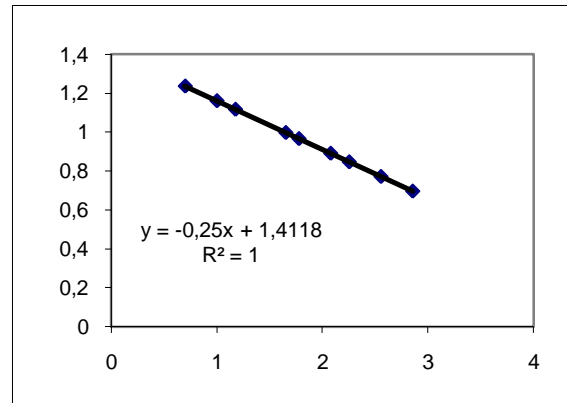
$$A = \log a = 1,388$$

$$a = 24,457$$

$$B = -m; B = -0,25$$

$$m = 0,250$$

$$I = 24,457 / t^{0,250}$$



$$A = \log a = 1,412$$

$$a = 25,811$$

$$B = -m; B = -0,25$$

$$m = 0,250$$

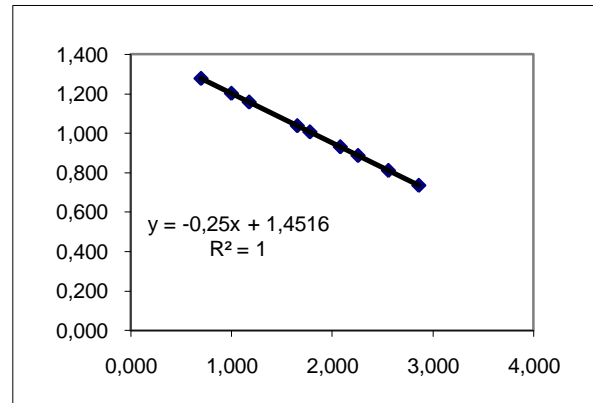
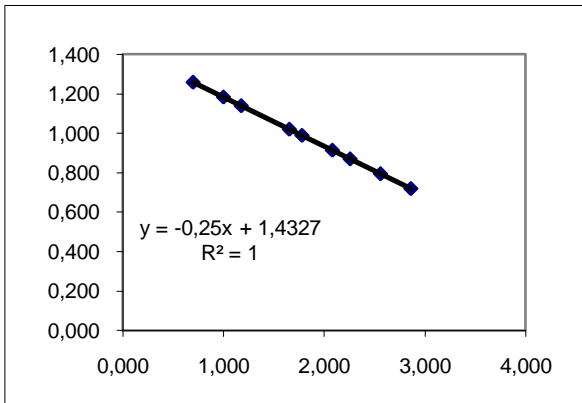
$$I = 25,811 / t^{0,250}$$

T = 100

T = 200

t (menit)	I (mm/jam)	log t (menit)	log I (mm/jam)
5	18,112	0,699	1,258
10	15,230	1,000	1,183
15	13,762	1,176	1,139
45	10,457	1,653	1,019
60	9,731	1,778	0,988
120	8,183	2,079	0,913
180	7,394	2,255	0,869
360	6,218	2,556	0,794
720	5,228	2,857	0,718

t (menit)	I (mm/jam)	log t (menit)	log I (mm/jam)
5	18,918	0,699	1,277
10	15,908	1,000	1,202
15	14,374	1,176	1,158
45	10,922	1,653	1,038
60	10,164	1,778	1,007
120	8,547	2,079	0,932
180	7,723	2,255	0,888
360	6,494	2,556	0,813
720	5,461	2,857	0,737



$$\begin{aligned}
 A = \log a &= 1,433 \\
 a &= 27,083 \\
 B = -m; B &= -0,25 \\
 m &= 0,250
 \end{aligned}$$

$$I = 27,083 / t^{0,250}$$

$$\begin{aligned}
 A = \log a &= 1,452 \\
 a &= 28,288 \\
 B = -m; B &= -0,25 \\
 m &= 0,250
 \end{aligned}$$

$$I = 28,288 / t^{0,250}$$