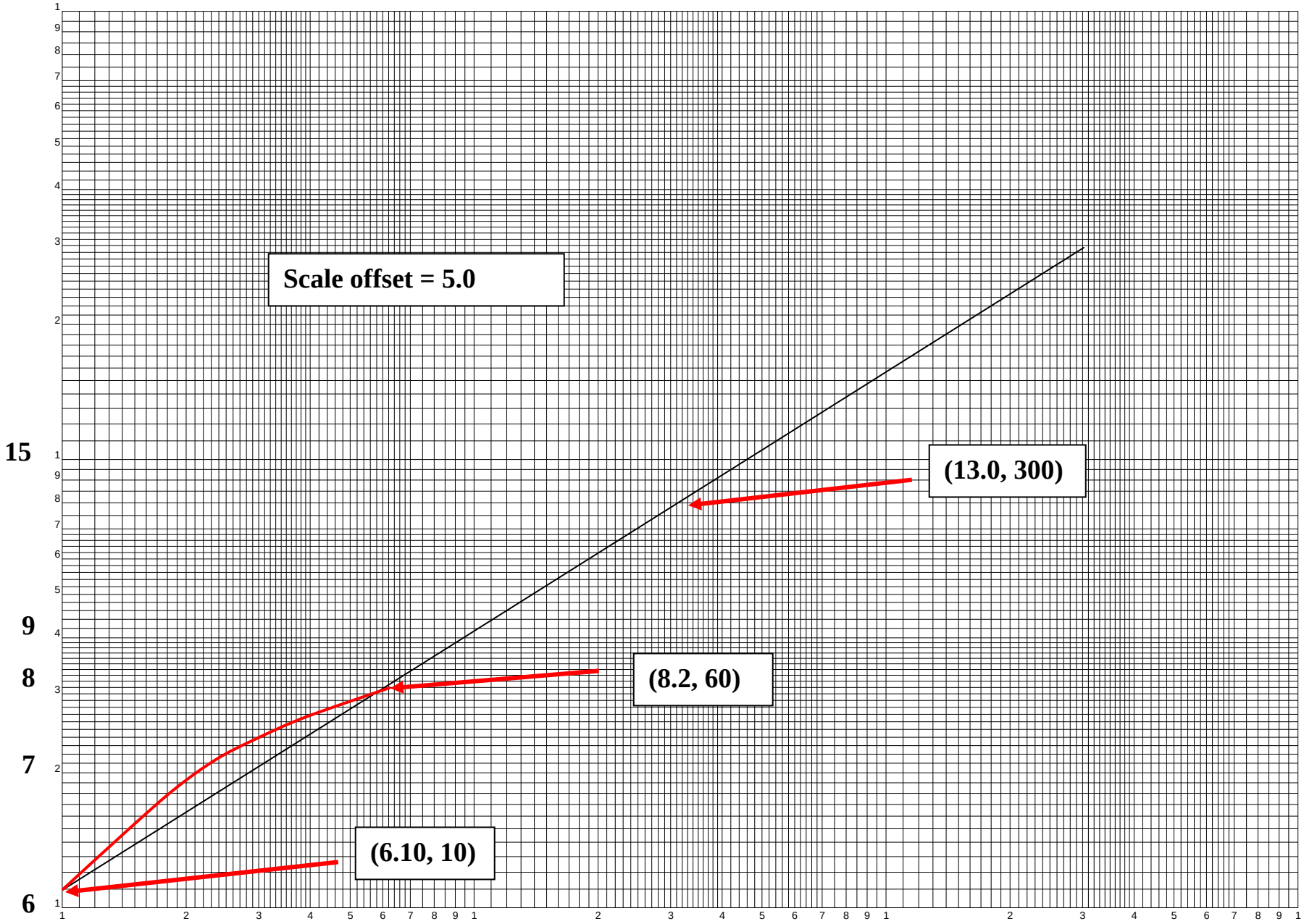
Exercise 2—Effects of using improper scale offset

- **The line shown on the rating on the next page was drawn using rating table 1.0 (on third page). Rating tables are often used to display the discharge predicted for a given gage height. These tables are developed by interpolating between input points, which are points where you tell the computer what the discharge is for a given gage height. Input points are shown using asterisk on the attached tables.**

- **Your assignment is to plot 3 or 4 points between gage heights of 6.10 and 8.20 using data from rating table 1.1 (on fourth page). Figure out where these points fall in relation to the rating curve drawn below. Why don't they plot on the line?**

ADAPS did the interpolation using the wrong offset for the curve in Table 1.1, so the interpolation was done incorrectly. The offset of 0.0 used in Table 1.1 was too low resulting in a concave-downward line.


Scale offset = 5.0
(13.0, 300)
(8.2, 60)
(6.10, 10)
15
9
8
7
6

EXPANDED RATING TABLE TYPE: LOG

06000001 DATE PROCESSED: 11-14-1991 @ 14:57 BY KLWAHL

ADAPS TRAINING SITE NO. 1 DD: 1 TYPE: 001 RATING NO: 1.0

OFFSET: 5.0 BREAK,OFFSET: (6.1,5.0) START DATE/TIME: 10-01-91 (0001)

BASED ON _____ DISCHARGE MEASUREMENTS, NOS _____, AND _____, AND IS _____ WELL DEFINED BETWEEN _____ AND _____ CFS

COMP BY _____ DATE _____ CHK. BY _____ DATE _____

Prob. 4 -- Correct offset

GAGE HEIGHT (FEET)	DISCHARGE IN CUBIC FEET PER SECOND (STANDARD PRECISION) .0	.1	.2	.3	.4	.5	.6	.7	.8	.9	DIFF IN Q PER FOOT
6.0		10.0*	11.6	13.2	15.0	16.8	18.8	20.8	22.8	25.0	19.2
7.0	27.3	29.6	32.0	34.5	37.0	39.7	42.3	45.1	48.0	50.9	26.5
8.0	53.8	56.9	60.0*	63.3	66.7	70.2	73.8	77.4	81.1	84.9	35.0
9.0	88.8	92.7	96.7	101	105	109	113	118	122	127	42.2
10.0	131	136	141	146	150	155	160	165	171	176	50.0
11.0	181	186	192	197	203	208	214	220	226	231	56.0
12.0	237	243	249	255	262	268	274	281	287	293	63.0
13.0	300*	306	313	319	326	333	339	346	353	360	67.0
14.0	367	374	381	388	395	402	410	417	424	432	72.0
15.0	439	447	454	462	470	477	485	493	501	509	78.0
16.0	517	525	533	541	549	558	566	574	583	591	83.0
17.0	600	608	617	625	634	643	652	661	669	678	87.0
18.0	687	696	706	715	724	733	742	752	761	771	93.0
19.0	780	790	799	809	819	828	838	848	858	868	98.0
20.0	878	888	898	908	918	928	939	949	959	970	102
21.0	980	990	1000	1010	1020	1030	1040	1050	1070	1080	110
22.0	1090	1100	1110	1120	1130	1140	1150	1160	1180	1190	110
23.0	1200	1210	1220	1230	1240	1260	1270	1280	1290	1300	110
24.0	1310	1330	1340	1350	1360	1370	1390	1400	1410	1420	120
25.0	1430	1450	1460	1470	1480	1500	1510	1520	1530	1550	130
26.0	1560	1570	1580	1600	1610	1620	1640	1650	1660	1680	130
27.0	1690	1700	1710	1730	1740	1750	1770	1780	1790	1810	130
28.0	1820	1830	1850	1860	1880	1890	1900	1920	1930	1940	140
29.0	1960	1970	1990	2000	2010	2030	2040	2060	2070	2090	140*
30.0	2100*										

EXPANDED RATING TABLE TYPE: LOG

06000001 DATE PROCESSED: 11-14-1991 @ 14:58 BY KLWAHL

ADAPS TRAINING SITE NO. 1 DD: 1 TYPE: 001 RATING NO: 1.1

OFFSET: .0 BREAK,OFFSET: (6.1,.0) START DATE/TIME: 10-01-91 (0010)

BASED ON _____ DISCHARGE MEASUREMENTS, NOS _____, AND _____, AND IS _____ WELL DEFINED BETWEEN _____ AND _____ CFS

COMP BY _____ DATE _____ CHK. BY _____ DATE _____

Prob 4 -- Incorrect offset

GAGE HEIGHT (FEET)	.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	DIFF IN Q PER FOOT
	DISCHARGE IN CUBIC FEET PER SECOND (STANDARD PRECISION)										
6.0		10.0*	11.0	12.2	13.4	14.7	16.1	17.7	19.3	21.1	14.4
7.0	23.0	25.1	27.3	29.7	32.2	35.0	37.9	41.0	44.3	47.9	28.7
8.0	51.7	55.7	60.0*	62.6	65.3	68.0	70.9	73.8	76.8	79.9	31.4
9.0	83.1	86.3	89.7	93.1	96.7	100	104	108	112	116	36.9
10.0	120	124	129	133	138	142	147	152	157	162	47.0
11.0	167	173	178	184	190	196	202	208	214	220	60.0
12.0	227	234	240	247	254	262	269	277	284	292	73.0
13.0	300*	305	311	316	322	328	333	339	345	351	56.0
14.0	356	362	368	374	381	387	393	399	406	412	63.0
15.0	419	425	432	438	445	452	459	465	472	479	67.0
16.0	486	493	501	508	515	522	530	537	545	552	74.0
17.0	560	568	575	583	591	599	607	615	623	631	80.0
18.0	640	648	656	665	673	682	690	699	708	717	85.0
19.0	725	734	743	752	762	771	780	789	799	808	92.0
20.0	817	827	837	846	856	866	876	886	896	906	99.0
21.0	916	926	936	946	957	967	978	988	999	1010	104
22.0	1020	1030	1040	1050	1060	1080	1090	1100	1110	1120	110
23.0	1130	1140	1150	1170	1180	1190	1200	1210	1230	1240	120
24.0	1250	1260	1270	1290	1300	1310	1320	1340	1350	1360	120
25.0	1370	1390	1400	1410	1430	1440	1450	1470	1480	1490	140
26.0	1510	1520	1530	1550	1560	1570	1590	1600	1620	1630	130
27.0	1640	1660	1670	1690	1700	1720	1730	1740	1760	1770	150
28.0	1790	1800	1820	1830	1850	1860	1880	1890	1910	1930	150
29.0	1940	1960	1970	1990	2000	2020	2040	2050	2070	2080	160*
30.0	2100*										