

Anschutz 64 MPR MDT Chassis  
Vortex 5-25X FFP PST Viper Scope  
Norma [RWS] Match Target .22 LR

Trajectory (Simplified)

Input Data

Long Rifle Target  
Rifle

Scope Height:  
1.796"

Manufacturer:

RWS Description:

Caliber:

0.223 in

Weight:

40.0 gr

Ballistic Coefficient:

0.109 G1  
(ASM)

Barrel Twist:  
RH 1:16.5"

Muzzle Velocity:

1026.5 ft/s

Sight Height:

1.80 in

Line Of Sight  
Angle:

0.0 deg

Cant Angle:

0.0 deg

Bullet Length:  
.387"

Wind Speed:

10.0 mph

Target Speed:

10.0 mph

Temperature:

59.0 °F

Pressure:

30.01 in Hg

Humidity:

69 %

Altitude:

910.0 ft

Std. Atmosphere at  
Altitude:

No

Pressure is  
Corrected:

Yes

Zero at Max. Point Blank  
Range:

No

Target Relative  
Drops:

Yes

Column 1 Units:

1.00 in

Column 2 Units:

1.00 mil

Round Output to Whole  
Numbers:

No

Output Data

Elevation:

11.831  
MOA

Windage:

0.000 MOA

Atmospheric Density:

0.07388  
lb/ft³

Speed of Sound:

1116.5 ft/s

Maximum PBR:

127 yd

Maximum PBR  
Zero:

108 yd

Range of Maximum  
Height:

60 yd

Energy at  
Maximum PBR:

62.7 ft•lbs

Sectional Density:

0.115 lb/in²

Calculated Table

Range (yd)	Drop (in)	Drop (mil)	Windage (in)	Windage (mil)	Velocity (ft/s)	Mach (none)	Energy (ft•lbs)	Time (s)	Lead (in)	Lead (mil)
10	-0.7	-2.0	0.1	0.1	1006.1	0.901	89.9	0.030	5.2	14.4
11	-0.6	-1.6	0.1	0.2	1004.2	0.899	89.5	0.033	5.7	14.4
12	-0.6	-1.3	0.1	0.2	1002.3	0.898	89.2	0.035	6.2	14.5
13	-0.5	-1.0	0.1	0.2	1000.4	0.896	88.9	0.038	6.8	14.5
14	-0.4	-0.8	0.1	0.2	998.5	0.894	88.5	0.041	7.3	14.5
15	-0.3	-0.6	0.1	0.2	996.6	0.893	88.2	0.045	7.8	14.5
16	-0.2	-0.4	0.1	0.2	994.7	0.891	87.9	0.048	8.4	14.5
17	-0.2	-0.3	0.1	0.2	992.9	0.889	87.5	0.051	8.9	14.5
18	-0.1	-0.2	0.2	0.3	991.0	0.888	87.2	0.054	9.4	14.5
19	-0.1	-0.1	0.2	0.3	989.2	0.886	86.9	0.057	10.0	14.6
20	0.0	0.0	0.2	0.3	987.4	0.884	86.6	0.060	10.5	14.6
21	0.1	0.1	0.2	0.3	985.6	0.883	86.3	0.063	11.0	14.6
22	0.1	0.1	0.2	0.3	983.8	0.881	85.9	0.066	11.6	14.6
23	0.2	0.2	0.3	0.3	982.0	0.880	85.6	0.069	12.1	14.6

24	0.2	0.2	0.3	0.3	980.3	0.878	85.3	0.072	12.6	14.6
25	0.2	0.3	0.3	0.4	978.5	0.876	85.0	0.075	13.2	14.6
26	0.3	0.3	0.3	0.4	976.8	0.875	84.7	0.078	13.7	14.7
27	0.3	0.3	0.4	0.4	975.0	0.873	84.4	0.081	14.3	14.7
28	0.3	0.3	0.4	0.4	973.3	0.872	84.1	0.084	14.8	14.7
29	0.4	0.3	0.4	0.4	971.6	0.870	83.8	0.087	15.3	14.7
30	0.4	0.3	0.5	0.4	969.9	0.869	83.5	0.090	15.9	14.7
31	0.4	0.4	0.5	0.4	968.3	0.867	83.3	0.093	16.4	14.7
32	0.4	0.4	0.5	0.5	966.6	0.866	83.0	0.096	17.0	14.7
33	0.4	0.4	0.6	0.5	964.9	0.864	82.7	0.100	17.5	14.8
34	0.4	0.3	0.6	0.5	963.3	0.863	82.4	0.103	18.1	14.8
35	0.4	0.3	0.6	0.5	961.6	0.861	82.1	0.106	18.6	14.8
36	0.4	0.3	0.7	0.5	960.0	0.860	81.8	0.109	19.2	14.8
37	0.4	0.3	0.7	0.5	958.4	0.858	81.6	0.112	19.7	14.8
38	0.4	0.3	0.7	0.5	956.8	0.857	81.3	0.115	20.3	14.8
39	0.4	0.3	0.8	0.5	955.2	0.856	81.0	0.118	20.8	14.8
40	0.4	0.3	0.8	0.6	953.6	0.854	80.8	0.121	21.4	14.8
41	0.4	0.2	0.8	0.6	952.0	0.853	80.5	0.125	21.9	14.9
42	0.3	0.2	0.9	0.6	950.5	0.851	80.2	0.128	22.5	14.9
43	0.3	0.2	0.9	0.6	948.9	0.850	80.0	0.131	23.0	14.9
44	0.3	0.2	1.0	0.6	947.4	0.849	79.7	0.134	23.6	14.9
45	0.2	0.1	1.0	0.6	945.8	0.847	79.4	0.137	24.2	14.9
46	0.2	0.1	1.1	0.6	944.3	0.846	79.2	0.140	24.7	14.9
47	0.2	0.1	1.1	0.7	942.8	0.844	78.9	0.144	25.3	14.9
48	0.1	0.1	1.1	0.7	941.2	0.843	78.7	0.147	25.8	15.0
49	0.1	0.0	1.2	0.7	939.7	0.842	78.4	0.150	26.4	15.0
50	-0.0	-0.0	1.2	0.7	938.2	0.840	78.2	0.153	27.0	15.0
51	-0.1	-0.0	1.3	0.7	936.7	0.839	77.9	0.156	27.5	15.0
52	-0.1	-0.1	1.3	0.7	935.2	0.838	77.7	0.160	28.1	15.0
53	-0.2	-0.1	1.4	0.7	933.8	0.836	77.4	0.163	28.7	15.0
54	-0.3	-0.1	1.4	0.7	932.3	0.835	77.2	0.166	29.2	15.0
55	-0.3	-0.2	1.5	0.8	930.8	0.834	76.9	0.169	29.8	15.0
56	-0.4	-0.2	1.6	0.8	929.4	0.832	76.7	0.172	30.4	15.1
57	-0.5	-0.2	1.6	0.8	927.9	0.831	76.5	0.176	30.9	15.1
58	-0.6	-0.3	1.7	0.8	926.5	0.830	76.2	0.179	31.5	15.1
59	-0.7	-0.3	1.7	0.8	925.1	0.829	76.0	0.182	32.1	15.1
60	-0.8	-0.4	1.8	0.8	923.6	0.827	75.8	0.185	32.6	15.1
61	-0.9	-0.4	1.8	0.8	922.2	0.826	75.5	0.189	33.2	15.1
62	-1.0	-0.4	1.9	0.8	920.8	0.825	75.3	0.192	33.8	15.1
63	-1.1	-0.5	1.9	0.9	919.4	0.824	75.1	0.195	34.4	15.1
64	-1.2	-0.5	2.0	0.9	918.0	0.822	74.8	0.198	34.9	15.2
65	-1.3	-0.6	2.1	0.9	916.6	0.821	74.6	0.202	35.5	15.2
66	-1.4	-0.6	2.1	0.9	915.2	0.820	74.4	0.205	36.1	15.2
67	-1.6	-0.6	2.2	0.9	913.9	0.819	74.2	0.208	36.7	15.2
68	-1.7	-0.7	2.3	0.9	912.5	0.817	73.9	0.212	37.2	15.2
69	-1.8	-0.7	2.3	0.9	911.1	0.816	73.7	0.215	37.8	15.2
70	-2.0	-0.8	2.4	0.9	909.8	0.815	73.5	0.218	38.4	15.2
71	-2.1	-0.8	2.5	1.0	908.4	0.814	73.3	0.221	39.0	15.2
72	-2.2	-0.9	2.5	1.0	907.1	0.812	73.1	0.225	39.6	15.3

73	-2.4	-0.9	2.6	1.0	905.7	0.811	72.8	0.228	40.1	15.3
74	-2.5	-1.0	2.7	1.0	904.4	0.810	72.6	0.231	40.7	15.3
75	-2.7	-1.0	2.7	1.0	903.1	0.809	72.4	0.235	41.3	15.3
76	-2.9	-1.0	2.8	1.0	901.7	0.808	72.2	0.238	41.9	15.3
77	-3.0	-1.1	2.9	1.0	900.4	0.806	72.0	0.241	42.5	15.3
78	-3.2	-1.1	2.9	1.0	899.1	0.805	71.8	0.245	43.1	15.3
79	-3.4	-1.2	3.0	1.1	897.8	0.804	71.6	0.248	43.7	15.3
80	-3.6	-1.2	3.1	1.1	896.5	0.803	71.4	0.251	44.2	15.4
81	-3.7	-1.3	3.2	1.1	895.2	0.802	71.2	0.255	44.8	15.4
82	-3.9	-1.3	3.2	1.1	893.9	0.801	71.0	0.258	45.4	15.4
83	-4.1	-1.4	3.3	1.1	892.6	0.800	70.8	0.261	46.0	15.4
84	-4.3	-1.4	3.4	1.1	891.4	0.798	70.6	0.265	46.6	15.4
85	-4.5	-1.5	3.5	1.1	890.1	0.797	70.4	0.268	47.2	15.4
86	-4.7	-1.5	3.6	1.1	888.8	0.796	70.2	0.272	47.8	15.4
87	-4.9	-1.6	3.6	1.2	887.6	0.795	70.0	0.275	48.4	15.4
88	-5.1	-1.6	3.7	1.2	886.3	0.794	69.8	0.278	49.0	15.5
89	-5.4	-1.7	3.8	1.2	885.0	0.793	69.6	0.282	49.6	15.5
90	-5.6	-1.7	3.9	1.2	883.8	0.792	69.4	0.285	50.2	15.5
91	-5.8	-1.8	4.0	1.2	882.5	0.790	69.2	0.288	50.8	15.5
92	-6.0	-1.8	4.0	1.2	881.3	0.789	69.0	0.292	51.4	15.5
93	-6.3	-1.9	4.1	1.2	880.1	0.788	68.8	0.295	52.0	15.5
94	-6.5	-1.9	4.2	1.2	878.8	0.787	68.6	0.299	52.6	15.5
95	-6.8	-2.0	4.3	1.3	877.6	0.786	68.4	0.302	53.2	15.5
96	-7.0	-2.0	4.4	1.3	876.4	0.785	68.2	0.306	53.8	15.6
97	-7.3	-2.1	4.5	1.3	875.2	0.784	68.0	0.309	54.4	15.6
98	-7.5	-2.1	4.6	1.3	873.9	0.783	67.8	0.312	55.0	15.6
99	-7.8	-2.2	4.7	1.3	872.7	0.782	67.6	0.316	55.6	15.6
100	-8.1	-2.2	4.8	1.3	871.5	0.781	67.5	0.319	56.2	15.6
101	-8.3	-2.3	4.8	1.3	870.3	0.780	67.3	0.323	56.8	15.6
102	-8.6	-2.3	4.9	1.3	869.1	0.778	67.1	0.326	57.4	15.6
103	-8.9	-2.4	5.0	1.4	867.9	0.777	66.9	0.330	58.0	15.6
104	-9.2	-2.5	5.1	1.4	866.8	0.776	66.7	0.333	58.6	15.7
105	-9.5	-2.5	5.2	1.4	865.6	0.775	66.5	0.337	59.2	15.7
106	-9.8	-2.6	5.3	1.4	864.4	0.774	66.4	0.340	59.8	15.7
107	-10.1	-2.6	5.4	1.4	863.2	0.773	66.2	0.343	60.5	15.7
108	-10.4	-2.7	5.5	1.4	862.0	0.772	66.0	0.347	61.1	15.7
109	-10.7	-2.7	5.6	1.4	860.9	0.771	65.8	0.350	61.7	15.7
110	-11.0	-2.8	5.7	1.4	859.7	0.770	65.6	0.354	62.3	15.7
111	-11.3	-2.8	5.8	1.5	858.6	0.769	65.5	0.357	62.9	15.7
112	-11.6	-2.9	5.9	1.5	857.4	0.768	65.3	0.361	63.5	15.8
113	-12.0	-2.9	6.0	1.5	856.2	0.767	65.1	0.364	64.1	15.8
114	-12.3	-3.0	6.1	1.5	855.1	0.766	64.9	0.368	64.8	15.8
115	-12.6	-3.1	6.2	1.5	854.0	0.765	64.8	0.371	65.4	15.8
116	-13.0	-3.1	6.3	1.5	852.8	0.764	64.6	0.375	66.0	15.8
117	-13.3	-3.2	6.4	1.5	851.7	0.763	64.4	0.378	66.6	15.8
118	-13.7	-3.2	6.5	1.5	850.5	0.762	64.2	0.382	67.2	15.8
119	-14.0	-3.3	6.6	1.6	849.4	0.761	64.1	0.386	67.9	15.8
120	-14.4	-3.3	6.7	1.6	848.3	0.760	63.9	0.389	68.5	15.9
121	-14.8	-3.4	6.9	1.6	847.2	0.759	63.7	0.393	69.1	15.9

122	-15.1	-3.4	7.0	1.6	846.0	0.758	63.6	0.396	69.7	15.9
123	-15.5	-3.5	7.1	1.6	844.9	0.757	63.4	0.400	70.3	15.9
124	-15.9	-3.6	7.2	1.6	843.8	0.756	63.2	0.403	71.0	15.9
125	-16.3	-3.6	7.3	1.6	842.7	0.755	63.1	0.407	71.6	15.9
126	-16.7	-3.7	7.4	1.6	841.6	0.754	62.9	0.410	72.2	15.9
127	-17.1	-3.7	7.5	1.6	840.5	0.753	62.7	0.414	72.9	15.9
128	-17.5	-3.8	7.6	1.7	839.4	0.752	62.6	0.418	73.5	15.9
129	-17.9	-3.9	7.8	1.7	838.3	0.751	62.4	0.421	74.1	16.0
130	-18.3	-3.9	7.9	1.7	837.2	0.750	62.2	0.425	74.7	16.0
131	-18.7	-4.0	8.0	1.7	836.1	0.749	62.1	0.428	75.4	16.0
132	-19.1	-4.0	8.1	1.7	835.0	0.748	61.9	0.432	76.0	16.0
133	-19.6	-4.1	8.2	1.7	833.9	0.747	61.8	0.435	76.6	16.0
134	-20.0	-4.1	8.3	1.7	832.8	0.746	61.6	0.439	77.3	16.0
135	-20.4	-4.2	8.5	1.7	831.8	0.745	61.4	0.443	77.9	16.0
136	-20.9	-4.3	8.6	1.8	830.7	0.744	61.3	0.446	78.5	16.0
137	-21.3	-4.3	8.7	1.8	829.6	0.743	61.1	0.450	79.2	16.1
138	-21.8	-4.4	8.8	1.8	828.6	0.742	61.0	0.453	79.8	16.1
139	-22.2	-4.4	9.0	1.8	827.5	0.741	60.8	0.457	80.5	16.1
140	-22.7	-4.5	9.1	1.8	826.4	0.740	60.6	0.461	81.1	16.1
141	-23.2	-4.6	9.2	1.8	825.4	0.739	60.5	0.464	81.7	16.1
142	-23.6	-4.6	9.3	1.8	824.3	0.738	60.3	0.468	82.4	16.1
143	-24.1	-4.7	9.5	1.8	823.2	0.737	60.2	0.472	83.0	16.1
144	-24.6	-4.7	9.6	1.8	822.2	0.736	60.0	0.475	83.7	16.1
145	-25.1	-4.8	9.7	1.9	821.1	0.735	59.9	0.479	84.3	16.1
146	-25.6	-4.9	9.8	1.9	820.1	0.735	59.7	0.483	84.9	16.2
147	-26.1	-4.9	10.0	1.9	819.1	0.734	59.6	0.486	85.6	16.2
148	-26.6	-5.0	10.1	1.9	818.0	0.733	59.4	0.490	86.2	16.2
149	-27.1	-5.0	10.2	1.9	817.0	0.732	59.3	0.494	86.9	16.2
150	-27.6	-5.1	10.4	1.9	815.9	0.731	59.1	0.497	87.5	16.2
151	-28.1	-5.2	10.5	1.9	814.9	0.730	59.0	0.501	88.2	16.2
152	-28.6	-5.2	10.6	1.9	813.9	0.729	58.8	0.505	88.8	16.2
153	-29.1	-5.3	10.8	2.0	812.8	0.728	58.7	0.508	89.5	16.2
154	-29.7	-5.4	10.9	2.0	811.8	0.727	58.5	0.512	90.1	16.3
155	-30.2	-5.4	11.0	2.0	810.8	0.726	58.4	0.516	90.8	16.3
156	-30.8	-5.5	11.2	2.0	809.8	0.725	58.2	0.519	91.4	16.3
157	-31.3	-5.5	11.3	2.0	808.8	0.724	58.1	0.523	92.1	16.3
158	-31.9	-5.6	11.5	2.0	807.7	0.723	57.9	0.527	92.7	16.3
159	-32.4	-5.7	11.6	2.0	806.7	0.723	57.8	0.531	93.4	16.3
160	-33.0	-5.7	11.7	2.0	805.7	0.722	57.7	0.534	94.0	16.3
161	-33.6	-5.8	11.9	2.0	804.7	0.721	57.5	0.538	94.7	16.3
162	-34.1	-5.9	12.0	2.1	803.7	0.720	57.4	0.542	95.3	16.3
163	-34.7	-5.9	12.2	2.1	802.7	0.719	57.2	0.545	96.0	16.4
164	-35.3	-6.0	12.3	2.1	801.7	0.718	57.1	0.549	96.7	16.4
165	-35.9	-6.0	12.4	2.1	800.7	0.717	56.9	0.553	97.3	16.4
166	-36.5	-6.1	12.6	2.1	799.7	0.716	56.8	0.557	98.0	16.4
167	-37.1	-6.2	12.7	2.1	798.7	0.715	56.7	0.560	98.6	16.4
168	-37.7	-6.2	12.9	2.1	797.7	0.715	56.5	0.564	99.3	16.4
169	-38.3	-6.3	13.0	2.1	796.7	0.714	56.4	0.568	100.0	16.4
170	-38.9	-6.4	13.2	2.2	795.8	0.713	56.2	0.572	100.6	16.4

171	-39.6	-6.4	13.3	2.2	794.8	0.712	56.1	0.576	101.3	16.5
172	-40.2	-6.5	13.5	2.2	793.8	0.711	56.0	0.579	102.0	16.5
173	-40.8	-6.6	13.6	2.2	792.8	0.710	55.8	0.583	102.6	16.5
174	-41.5	-6.6	13.8	2.2	791.8	0.709	55.7	0.587	103.3	16.5
175	-42.1	-6.7	13.9	2.2	790.9	0.708	55.5	0.591	104.0	16.5
176	-42.8	-6.8	14.1	2.2	789.9	0.707	55.4	0.594	104.6	16.5
177	-43.4	-6.8	14.2	2.2	788.9	0.707	55.3	0.598	105.3	16.5
178	-44.1	-6.9	14.4	2.2	787.9	0.706	55.1	0.602	106.0	16.5
179	-44.8	-6.9	14.6	2.3	787.0	0.705	55.0	0.606	106.6	16.5
180	-45.4	-7.0	14.7	2.3	786.0	0.704	54.9	0.610	107.3	16.6
181	-46.1	-7.1	14.9	2.3	785.1	0.703	54.7	0.614	108.0	16.6
182	-46.8	-7.1	15.0	2.3	784.1	0.702	54.6	0.617	108.7	16.6
183	-47.5	-7.2	15.2	2.3	783.1	0.701	54.5	0.621	109.3	16.6
184	-48.2	-7.3	15.4	2.3	782.2	0.701	54.3	0.625	110.0	16.6
185	-48.9	-7.3	15.5	2.3	781.2	0.700	54.2	0.629	110.7	16.6
186	-49.6	-7.4	15.7	2.3	780.3	0.699	54.1	0.633	111.4	16.6
187	-50.3	-7.5	15.8	2.4	779.3	0.698	53.9	0.637	112.0	16.6
188	-51.1	-7.5	16.0	2.4	778.4	0.697	53.8	0.640	112.7	16.7
189	-51.8	-7.6	16.2	2.4	777.4	0.696	53.7	0.644	113.4	16.7
190	-52.5	-7.7	16.3	2.4	776.5	0.695	53.5	0.648	114.1	16.7
191	-53.2	-7.7	16.5	2.4	775.5	0.695	53.4	0.652	114.7	16.7
192	-54.0	-7.8	16.7	2.4	774.6	0.694	53.3	0.656	115.4	16.7
193	-54.7	-7.9	16.8	2.4	773.7	0.693	53.2	0.660	116.1	16.7
194	-55.5	-7.9	17.0	2.4	772.7	0.692	53.0	0.664	116.8	16.7
195	-56.3	-8.0	17.2	2.4	771.8	0.691	52.9	0.667	117.5	16.7
196	-57.0	-8.1	17.3	2.5	770.9	0.690	52.8	0.671	118.2	16.7
197	-57.8	-8.1	17.5	2.5	769.9	0.690	52.6	0.675	118.8	16.8
198	-58.6	-8.2	17.7	2.5	769.0	0.689	52.5	0.679	119.5	16.8
199	-59.4	-8.3	17.9	2.5	768.1	0.688	52.4	0.683	120.2	16.8
200	-60.1	-8.4	18.0	2.5	767.1	0.687	52.3	0.687	120.9	16.8
201	-60.9	-8.4	18.2	2.5	766.2	0.686	52.1	0.691	121.6	16.8
202	-61.7	-8.5	18.4	2.5	765.3	0.685	52.0	0.695	122.3	16.8
203	-62.6	-8.6	18.6	2.5	764.4	0.685	51.9	0.699	123.0	16.8
204	-63.4	-8.6	18.7	2.6	763.4	0.684	51.8	0.703	123.7	16.8
205	-64.2	-8.7	18.9	2.6	762.5	0.683	51.6	0.707	124.4	16.9
206	-65.0	-8.8	19.1	2.6	761.6	0.682	51.5	0.711	125.1	16.9
207	-65.8	-8.8	19.3	2.6	760.7	0.681	51.4	0.714	125.7	16.9
208	-66.7	-8.9	19.5	2.6	759.8	0.681	51.3	0.718	126.4	16.9
209	-67.5	-9.0	19.6	2.6	758.8	0.680	51.1	0.722	127.1	16.9
210	-68.4	-9.0	19.8	2.6	757.9	0.679	51.0	0.726	127.8	16.9
211	-69.2	-9.1	20.0	2.6	757.0	0.678	50.9	0.730	128.5	16.9
212	-70.1	-9.2	20.2	2.6	756.1	0.677	50.8	0.734	129.2	16.9
213	-71.0	-9.3	20.4	2.7	755.2	0.676	50.6	0.738	129.9	16.9
214	-71.8	-9.3	20.6	2.7	754.3	0.676	50.5	0.742	130.6	17.0
215	-72.7	-9.4	20.7	2.7	753.4	0.675	50.4	0.746	131.3	17.0
216	-73.6	-9.5	20.9	2.7	752.5	0.674	50.3	0.750	132.0	17.0
217	-74.5	-9.5	21.1	2.7	751.6	0.673	50.2	0.754	132.7	17.0
218	-75.4	-9.6	21.3	2.7	750.7	0.672	50.0	0.758	133.4	17.0
219	-76.3	-9.7	21.5	2.7	749.8	0.672	49.9	0.762	134.1	17.0

220	-77.2	-9.7	21.7	2.7	748.9	0.671	49.8	0.766	134.8	17.0
221	-78.1	-9.8	21.9	2.7	748.0	0.670	49.7	0.770	135.6	17.0
222	-79.1	-9.9	22.1	2.8	747.1	0.669	49.6	0.774	136.3	17.0
223	-80.0	-10.0	22.3	2.8	746.2	0.668	49.4	0.778	137.0	17.1
224	-80.9	-10.0	22.5	2.8	745.3	0.668	49.3	0.782	137.7	17.1
225	-81.9	-10.1	22.6	2.8	744.4	0.667	49.2	0.786	138.4	17.1
226	-82.8	-10.2	22.8	2.8	743.5	0.666	49.1	0.790	139.1	17.1
227	-83.8	-10.3	23.0	2.8	742.7	0.665	49.0	0.794	139.8	17.1
228	-84.7	-10.3	23.2	2.8	741.8	0.664	48.9	0.798	140.5	17.1
229	-85.7	-10.4	23.4	2.8	740.9	0.664	48.7	0.802	141.2	17.1
230	-86.7	-10.5	23.6	2.9	740.0	0.663	48.6	0.806	141.9	17.1
231	-87.6	-10.5	23.8	2.9	739.1	0.662	48.5	0.811	142.7	17.2
232	-88.6	-10.6	24.0	2.9	738.3	0.661	48.4	0.815	143.4	17.2
233	-89.6	-10.7	24.2	2.9	737.4	0.660	48.3	0.819	144.1	17.2
234	-90.6	-10.8	24.4	2.9	736.5	0.660	48.2	0.823	144.8	17.2
235	-91.6	-10.8	24.6	2.9	735.6	0.659	48.1	0.827	145.5	17.2
236	-92.6	-10.9	24.8	2.9	734.8	0.658	47.9	0.831	146.2	17.2
237	-93.7	-11.0	25.0	2.9	733.9	0.657	47.8	0.835	147.0	17.2
238	-94.7	-11.1	25.3	2.9	733.0	0.657	47.7	0.839	147.7	17.2
239	-95.7	-11.1	25.5	3.0	732.1	0.656	47.6	0.843	148.4	17.2
240	-96.8	-11.2	25.7	3.0	731.3	0.655	47.5	0.847	149.1	17.3
241	-97.8	-11.3	25.9	3.0	730.4	0.654	47.4	0.851	149.8	17.3
242	-98.9	-11.3	26.1	3.0	729.5	0.653	47.3	0.855	150.6	17.3
243	-99.9	-11.4	26.3	3.0	728.7	0.653	47.2	0.860	151.3	17.3
244	-101.0	-11.5	26.5	3.0	727.8	0.652	47.0	0.864	152.0	17.3
245	-102.0	-11.6	26.7	3.0	727.0	0.651	46.9	0.868	152.7	17.3
246	-103.1	-11.6	26.9	3.0	726.1	0.650	46.8	0.872	153.5	17.3
247	-104.2	-11.7	27.1	3.1	725.3	0.650	46.7	0.876	154.2	17.3
248	-105.3	-11.8	27.4	3.1	724.4	0.649	46.6	0.880	154.9	17.4
249	-106.4	-11.9	27.6	3.1	723.5	0.648	46.5	0.884	155.7	17.4
250	-107.5	-11.9	27.8	3.1	722.7	0.647	46.4	0.889	156.4	17.4
251	-108.6	-12.0	28.0	3.1	721.8	0.647	46.3	0.893	157.1	17.4
252	-109.7	-12.1	28.2	3.1	721.0	0.646	46.2	0.897	157.9	17.4
253	-110.9	-12.2	28.4	3.1	720.1	0.645	46.1	0.901	158.6	17.4
254	-112.0	-12.2	28.7	3.1	719.3	0.644	45.9	0.905	159.3	17.4
255	-113.1	-12.3	28.9	3.1	718.5	0.644	45.8	0.909	160.1	17.4
256	-114.3	-12.4	29.1	3.2	717.6	0.643	45.7	0.914	160.8	17.4
257	-115.4	-12.5	29.3	3.2	716.8	0.642	45.6	0.918	161.5	17.5
258	-116.6	-12.6	29.6	3.2	715.9	0.641	45.5	0.922	162.3	17.5
259	-117.7	-12.6	29.8	3.2	715.1	0.640	45.4	0.926	163.0	17.5
260	-118.9	-12.7	30.0	3.2	714.2	0.640	45.3	0.930	163.7	17.5
261	-120.1	-12.8	30.2	3.2	713.4	0.639	45.2	0.935	164.5	17.5
262	-121.3	-12.9	30.5	3.2	712.6	0.638	45.1	0.939	165.2	17.5
263	-122.5	-12.9	30.7	3.2	711.7	0.637	45.0	0.943	166.0	17.5
264	-123.7	-13.0	30.9	3.3	710.9	0.637	44.9	0.947	166.7	17.5
265	-124.9	-13.1	31.1	3.3	710.1	0.636	44.8	0.951	167.4	17.6
266	-126.1	-13.2	31.4	3.3	709.3	0.635	44.7	0.956	168.2	17.6
267	-127.3	-13.2	31.6	3.3	708.4	0.635	44.6	0.960	168.9	17.6
268	-128.5	-13.3	31.8	3.3	707.6	0.634	44.5	0.964	169.7	17.6

269	-129.8	-13.4	32.1	3.3	706.8	0.633	44.4	0.968	170.4	17.6
270	-131.0	-13.5	32.3	3.3	705.9	0.632	44.3	0.973	171.2	17.6
271	-132.2	-13.6	32.5	3.3	705.1	0.632	44.2	0.977	171.9	17.6
272	-133.5	-13.6	32.8	3.3	704.3	0.631	44.1	0.981	172.7	17.6
273	-134.8	-13.7	33.0	3.4	703.5	0.630	43.9	0.985	173.4	17.6
274	-136.0	-13.8	33.2	3.4	702.7	0.629	43.8	0.990	174.2	17.7
275	-137.3	-13.9	33.5	3.4	701.9	0.629	43.7	0.994	174.9	17.7
276	-138.6	-13.9	33.7	3.4	701.0	0.628	43.6	0.998	175.7	17.7
277	-139.9	-14.0	34.0	3.4	700.2	0.627	43.5	1.003	176.4	17.7
278	-141.2	-14.1	34.2	3.4	699.4	0.626	43.4	1.007	177.2	17.7
279	-142.5	-14.2	34.4	3.4	698.6	0.626	43.3	1.011	178.0	17.7
280	-143.8	-14.3	34.7	3.4	697.8	0.625	43.2	1.015	178.7	17.7
281	-145.1	-14.3	34.9	3.5	697.0	0.624	43.1	1.020	179.5	17.7
282	-146.4	-14.4	35.2	3.5	696.2	0.624	43.0	1.024	180.2	17.8
283	-147.8	-14.5	35.4	3.5	695.4	0.623	42.9	1.028	181.0	17.8
284	-149.1	-14.6	35.7	3.5	694.6	0.622	42.8	1.033	181.7	17.8
285	-150.4	-14.7	35.9	3.5	693.8	0.621	42.7	1.037	182.5	17.8
286	-151.8	-14.7	36.2	3.5	693.0	0.621	42.6	1.041	183.3	17.8
287	-153.2	-14.8	36.4	3.5	692.2	0.620	42.5	1.046	184.0	17.8
288	-154.5	-14.9	36.7	3.5	691.4	0.619	42.4	1.050	184.8	17.8
289	-155.9	-15.0	36.9	3.5	690.6	0.619	42.3	1.054	185.6	17.8
290	-157.3	-15.1	37.2	3.6	689.8	0.618	42.2	1.059	186.3	17.8
291	-158.7	-15.1	37.4	3.6	689.0	0.617	42.2	1.063	187.1	17.9
292	-160.1	-15.2	37.7	3.6	688.2	0.616	42.1	1.067	187.9	17.9
293	-161.5	-15.3	37.9	3.6	687.4	0.616	42.0	1.072	188.6	17.9
294	-162.9	-15.4	38.2	3.6	686.6	0.615	41.9	1.076	189.4	17.9
295	-164.3	-15.5	38.4	3.6	685.8	0.614	41.8	1.080	190.2	17.9
296	-165.7	-15.6	38.7	3.6	685.0	0.614	41.7	1.085	190.9	17.9
297	-167.2	-15.6	38.9	3.6	684.2	0.613	41.6	1.089	191.7	17.9
298	-168.6	-15.7	39.2	3.7	683.4	0.612	41.5	1.094	192.5	17.9
299	-170.1	-15.8	39.5	3.7	682.6	0.611	41.4	1.098	193.3	18.0
300	-171.5	-15.9	39.7	3.7	681.9	0.611	41.3	1.102	194.0	18.0
301	-173.0	-16.0	40.0	3.7	681.1	0.610	41.2	1.107	194.8	18.0
302	-174.5	-16.0	40.2	3.7	680.3	0.609	41.1	1.111	195.6	18.0
303	-175.9	-16.1	40.5	3.7	679.5	0.609	41.0	1.116	196.4	18.0
304	-177.4	-16.2	40.8	3.7	678.7	0.608	40.9	1.120	197.1	18.0
305	-178.9	-16.3	41.0	3.7	678.0	0.607	40.8	1.125	197.9	18.0
306	-180.4	-16.4	41.3	3.7	677.2	0.607	40.7	1.129	198.7	18.0
307	-181.9	-16.5	41.6	3.8	676.4	0.606	40.6	1.133	199.5	18.0
308	-183.4	-16.5	41.8	3.8	675.6	0.605	40.5	1.138	200.3	18.1
309	-185.0	-16.6	42.1	3.8	674.9	0.604	40.4	1.142	201.0	18.1
310	-186.5	-16.7	42.4	3.8	674.1	0.604	40.4	1.147	201.8	18.1
311	-188.0	-16.8	42.6	3.8	673.3	0.603	40.3	1.151	202.6	18.1
312	-189.6	-16.9	42.9	3.8	672.6	0.602	40.2	1.156	203.4	18.1
313	-191.1	-17.0	43.2	3.8	671.8	0.602	40.1	1.160	204.2	18.1
314	-192.7	-17.0	43.5	3.8	671.0	0.601	40.0	1.165	205.0	18.1
315	-194.3	-17.1	43.7	3.9	670.3	0.600	39.9	1.169	205.8	18.1
316	-195.9	-17.2	44.0	3.9	669.5	0.600	39.8	1.174	206.5	18.2
317	-197.4	-17.3	44.3	3.9	668.7	0.599	39.7	1.178	207.3	18.2

318	-199.0	-17.4	44.6	3.9	668.0	0.598	39.6	1.183	208.1	18.2
319	-200.6	-17.5	44.8	3.9	667.2	0.598	39.5	1.187	208.9	18.2
320	-202.2	-17.6	45.1	3.9	666.5	0.597	39.4	1.192	209.7	18.2
321	-203.9	-17.6	45.4	3.9	665.7	0.596	39.4	1.196	210.5	18.2
322	-205.5	-17.7	45.7	3.9	664.9	0.596	39.3	1.201	211.3	18.2
323	-207.1	-17.8	45.9	4.0	664.2	0.595	39.2	1.205	212.1	18.2
324	-208.8	-17.9	46.2	4.0	663.4	0.594	39.1	1.210	212.9	18.3
325	-210.4	-18.0	46.5	4.0	662.7	0.594	39.0	1.214	213.7	18.3
326	-212.1	-18.1	46.8	4.0	661.9	0.593	38.9	1.219	214.5	18.3
327	-213.7	-18.2	47.1	4.0	661.2	0.592	38.8	1.223	215.3	18.3
328	-215.4	-18.2	47.4	4.0	660.4	0.592	38.7	1.228	216.1	18.3
329	-217.1	-18.3	47.7	4.0	659.7	0.591	38.6	1.232	216.9	18.3
330	-218.8	-18.4	47.9	4.0	658.9	0.590	38.6	1.237	217.7	18.3
331	-220.5	-18.5	48.2	4.0	658.2	0.590	38.5	1.241	218.5	18.3
332	-222.2	-18.6	48.5	4.1	657.4	0.589	38.4	1.246	219.3	18.3
333	-223.9	-18.7	48.8	4.1	656.7	0.588	38.3	1.251	220.1	18.4
334	-225.6	-18.8	49.1	4.1	655.9	0.587	38.2	1.255	220.9	18.4
335	-227.3	-18.9	49.4	4.1	655.2	0.587	38.1	1.260	221.7	18.4
336	-229.1	-18.9	49.7	4.1	654.4	0.586	38.0	1.264	222.5	18.4
337	-230.8	-19.0	50.0	4.1	653.7	0.585	37.9	1.269	223.3	18.4
338	-232.6	-19.1	50.3	4.1	652.9	0.585	37.9	1.273	224.1	18.4
339	-234.3	-19.2	50.6	4.1	652.2	0.584	37.8	1.278	224.9	18.4
340	-236.1	-19.3	50.9	4.2	651.5	0.584	37.7	1.283	225.8	18.4
341	-237.9	-19.4	51.2	4.2	650.7	0.583	37.6	1.287	226.6	18.5
342	-239.7	-19.5	51.5	4.2	650.0	0.582	37.5	1.292	227.4	18.5
343	-241.5	-19.6	51.8	4.2	649.2	0.582	37.4	1.297	228.2	18.5
344	-243.3	-19.6	52.1	4.2	648.5	0.581	37.3	1.301	229.0	18.5
345	-245.1	-19.7	52.4	4.2	647.8	0.580	37.3	1.306	229.8	18.5
346	-246.9	-19.8	52.7	4.2	647.0	0.580	37.2	1.310	230.6	18.5
347	-248.7	-19.9	53.0	4.2	646.3	0.579	37.1	1.315	231.5	18.5
348	-250.6	-20.0	53.3	4.3	645.6	0.578	37.0	1.320	232.3	18.5
349	-252.4	-20.1	53.6	4.3	644.8	0.578	36.9	1.324	233.1	18.6
350	-254.3	-20.2	53.9	4.3	644.1	0.577	36.8	1.329	233.9	18.6
351	-256.1	-20.3	54.2	4.3	643.4	0.576	36.8	1.334	234.7	18.6
352	-258.0	-20.4	54.5	4.3	642.7	0.576	36.7	1.338	235.6	18.6
353	-259.9	-20.4	54.8	4.3	641.9	0.575	36.6	1.343	236.4	18.6
354	-261.8	-20.5	55.1	4.3	641.2	0.574	36.5	1.348	237.2	18.6
355	-263.7	-20.6	55.4	4.3	640.5	0.574	36.4	1.352	238.0	18.6
356	-265.6	-20.7	55.7	4.3	639.7	0.573	36.3	1.357	238.9	18.6
357	-267.5	-20.8	56.1	4.4	639.0	0.572	36.3	1.362	239.7	18.6
358	-269.4	-20.9	56.4	4.4	638.3	0.572	36.2	1.367	240.5	18.7
359	-271.3	-21.0	56.7	4.4	637.6	0.571	36.1	1.371	241.3	18.7
360	-273.3	-21.1	57.0	4.4	636.9	0.570	36.0	1.376	242.2	18.7
361	-275.2	-21.2	57.3	4.4	636.1	0.570	35.9	1.381	243.0	18.7
362	-277.2	-21.3	57.6	4.4	635.4	0.569	35.9	1.385	243.8	18.7
363	-279.1	-21.4	57.9	4.4	634.7	0.568	35.8	1.390	244.7	18.7
364	-281.1	-21.5	58.3	4.4	634.0	0.568	35.7	1.395	245.5	18.7
365	-283.1	-21.5	58.6	4.5	633.3	0.567	35.6	1.400	246.3	18.7
366	-285.1	-21.6	58.9	4.5	632.5	0.567	35.5	1.404	247.2	18.8



367	-287.1	-21.7	59.2	4.5	631.8	0.566	35.5	1.409	248.0	18.8
368	-289.1	-21.8	59.6	4.5	631.1	0.565	35.4	1.414	248.8	18.8
369	-291.1	-21.9	59.9	4.5	630.4	0.565	35.3	1.419	249.7	18.8
370	-293.1	-22.0	60.2	4.5	629.7	0.564	35.2	1.423	250.5	18.8
371	-295.2	-22.1	60.5	4.5	629.0	0.563	35.1	1.428	251.4	18.8
372	-297.2	-22.2	60.9	4.5	628.3	0.563	35.1	1.433	252.2	18.8
373	-299.2	-22.3	61.2	4.6	627.6	0.562	35.0	1.438	253.0	18.8
374	-301.3	-22.4	61.5	4.6	626.9	0.561	34.9	1.443	253.9	18.9
375	-303.4	-22.5	61.8	4.6	626.1	0.561	34.8	1.447	254.7	18.9
376	-305.5	-22.6	62.2	4.6	625.4	0.560	34.7	1.452	255.6	18.9
377	-307.5	-22.7	62.5	4.6	624.7	0.560	34.7	1.457	256.4	18.9
378	-309.6	-22.8	62.8	4.6	624.0	0.559	34.6	1.462	257.3	18.9
379	-311.7	-22.8	63.2	4.6	623.3	0.558	34.5	1.467	258.1	18.9
380	-313.9	-22.9	63.5	4.6	622.6	0.558	34.4	1.471	259.0	18.9
381	-316.0	-23.0	63.8	4.7	621.9	0.557	34.3	1.476	259.8	18.9
382	-318.1	-23.1	64.2	4.7	621.2	0.556	34.3	1.481	260.7	19.0
383	-320.2	-23.2	64.5	4.7	620.5	0.556	34.2	1.486	261.5	19.0
384	-322.4	-23.3	64.9	4.7	619.8	0.555	34.1	1.491	262.4	19.0
385	-324.6	-23.4	65.2	4.7	619.1	0.555	34.0	1.496	263.2	19.0
386	-326.7	-23.5	65.5	4.7	618.4	0.554	34.0	1.500	264.1	19.0
387	-328.9	-23.6	65.9	4.7	617.7	0.553	33.9	1.505	264.9	19.0
388	-331.1	-23.7	66.2	4.7	617.0	0.553	33.8	1.510	265.8	19.0
389	-333.3	-23.8	66.6	4.8	616.3	0.552	33.7	1.515	266.7	19.0
390	-335.5	-23.9	66.9	4.8	615.6	0.551	33.7	1.520	267.5	19.1
391	-337.7	-24.0	67.3	4.8	614.9	0.551	33.6	1.525	268.4	19.1
392	-339.9	-24.1	67.6	4.8	614.3	0.550	33.5	1.530	269.2	19.1
393	-342.2	-24.2	67.9	4.8	613.6	0.550	33.4	1.535	270.1	19.1
394	-344.4	-24.3	68.3	4.8	612.9	0.549	33.4	1.540	271.0	19.1
395	-346.6	-24.4	68.6	4.8	612.2	0.548	33.3	1.544	271.8	19.1
396	-348.9	-24.5	69.0	4.8	611.5	0.548	33.2	1.549	272.7	19.1
397	-351.2	-24.6	69.3	4.9	610.8	0.547	33.1	1.554	273.6	19.1
398	-353.5	-24.7	69.7	4.9	610.1	0.546	33.1	1.559	274.4	19.2
399	-355.7	-24.8	70.0	4.9	609.4	0.546	33.0	1.564	275.3	19.2
400	-358.0	-24.9	70.4	4.9	608.7	0.545	32.9	1.569	276.2	19.2