

Trial Temp (°C)	Trial Sound Speed (m/s)	Estimated ethanol content (v/v%)	Column number of correct temp
20	1523	52.47%	201
			1545.061
			1487.007

Trial Column

19.9	EtOH (v/v%)	0	0.1	0.2	0.3	0.4	0.5	0.6
1596.037	40.15%	1648.3	1648.038	1647.776	1647.513	1647.251	1646.989	1646.727
1574.083	44.33%	1625.5	1625.248	1624.996	1624.744	1624.491	1624.239	1623.987
1545.061	49.07%	1596.6	1596.349	1596.099	1595.848	1595.597	1595.346	1595.095
1487.007	58.03%	1540.5	1540.241	1539.982	1539.722	1539.463	1539.203	1538.944
1465.062	61.58%	1523.1	1522.812	1522.525	1522.237	1521.949	1521.661	1521.373
1437.356	65.55%	1493.8	1493.524	1493.249	1492.973	1492.697	1492.422	1492.146

Nearest Value Greater Than	1545.061	Row of Nearest Value Greater Than	4	Nearest Value Less Than	1487.007	Row of Nearest Value Less Than	5
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Row Before	3	y	1545.061	1	1487.007	2
Row After	5	x	0.4907		0.5803	

slope -647.933
Intercept 1863.002

0.7	0.8	0.9	1	1.1	1.2	1.3	1.4	1.5
1646.464	1646.202	1645.94	1645.678	1645.415	1645.153	1644.891	1644.628	1644.366
1623.734	1623.482	1623.229	1622.977	1622.724	1622.471	1622.218	1621.966	1621.713
1594.844	1594.592	1594.341	1594.09	1593.838	1593.586	1593.335	1593.083	1592.831
1538.684	1538.424	1538.164	1537.905	1537.644	1537.384	1537.124	1536.864	1536.603
1521.085	1520.797	1520.509	1520.221	1519.933	1519.645	1519.357	1519.069	1518.78
1491.87	1491.594	1491.317	1491.041	1490.765	1490.488	1490.212	1489.935	1489.659

1.6	1.7	1.8	1.9	2	2.1	2.2	2.3	2.4
1644.104	1643.842	1643.579	1643.317	1643.055	1642.792	1642.53	1642.268	1642.005
1621.46	1621.207	1620.953	1620.7	1620.447	1620.194	1619.94	1619.687	1619.433
1592.579	1592.327	1592.075	1591.823	1591.571	1591.318	1591.066	1590.813	1590.561
1536.342	1536.082	1535.821	1535.56	1535.299	1535.038	1534.777	1534.516	1534.254
1518.492	1518.204	1517.915	1517.627	1517.339	1517.05	1516.762	1516.473	1516.184
1489.382	1489.105	1488.828	1488.551	1488.274	1487.997	1487.72	1487.442	1487.165

	2.5	2.6	2.7	2.8	2.9	3	3.1	3.2	3.3
1641.743	1641.481	1641.218	1640.956	1640.694	1640.431	1640.169	1639.907	1639.644	
1619.18	1618.926	1618.672	1618.419	1618.165	1617.911	1617.657	1617.403	1617.149	
1590.308	1590.055	1589.802	1589.549	1589.296	1589.043	1588.79	1588.537	1588.283	
1533.993	1533.731	1533.47	1533.208	1532.946	1532.684	1532.422	1532.16	1531.898	
1515.896	1515.607	1515.318	1515.03	1514.741	1514.452	1514.163	1513.874	1513.585	
1486.887	1486.61	1486.332	1486.054	1485.777	1485.499	1485.221	1484.943	1484.665	

3.4	3.5	3.6	3.7	3.8	3.9	4	4.1	4.2
1639.382	1639.12	1638.857	1638.595	1638.332	1638.07	1637.808	1637.545	1637.283
1616.895	1616.64	1616.386	1616.132	1615.877	1615.623	1615.368	1615.114	1614.859
1588.03	1587.777	1587.523	1587.269	1587.015	1586.762	1586.508	1586.254	1585.999
1531.635	1531.373	1531.11	1530.848	1530.585	1530.322	1530.059	1529.796	1529.533
1513.296	1513.007	1512.718	1512.429	1512.14	1511.85	1511.561	1511.272	1510.983
1484.386	1484.108	1483.83	1483.551	1483.273	1482.994	1482.715	1482.436	1482.158

4.3	4.4	4.5	4.6	4.7	4.8	4.9	5	5.1
1637.02	1636.758	1636.496	1636.233	1635.971	1635.708	1635.446	1635.184	1634.921
1614.604	1614.35	1614.095	1613.84	1613.585	1613.33	1613.075	1612.82	1612.564
1585.745	1585.491	1585.237	1584.982	1584.728	1584.473	1584.218	1583.964	1583.709
1529.27	1529.006	1528.743	1528.48	1528.216	1527.952	1527.688	1527.425	1527.16
1510.693	1510.404	1510.114	1509.825	1509.535	1509.246	1508.956	1508.667	1508.377
1481.879	1481.6	1481.32	1481.041	1480.762	1480.482	1480.203	1479.924	1479.644

5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	6
1634.659	1634.396	1634.134	1633.871	1633.609	1633.346	1633.084	1632.821	1632.559
1612.309	1612.054	1611.798	1611.543	1611.287	1611.031	1610.776	1610.52	1610.264
1583.454	1583.199	1582.944	1582.688	1582.433	1582.178	1581.922	1581.667	1581.411
1526.896	1526.632	1526.368	1526.103	1525.839	1525.574	1525.31	1525.045	1524.78
1508.087	1507.797	1507.508	1507.218	1506.928	1506.638	1506.348	1506.058	1505.768
1479.364	1479.084	1478.805	1478.525	1478.245	1477.964	1477.684	1477.404	1477.124

6.1	6.2	6.3	6.4	6.5	6.6	6.7	6.8	6.9
1632.297	1632.034	1631.772	1631.509	1631.247	1630.984	1630.722	1630.459	1630.197
1610.008	1609.752	1609.496	1609.24	1608.984	1608.728	1608.472	1608.215	1607.959
1581.155	1580.899	1580.644	1580.388	1580.132	1579.875	1579.619	1579.363	1579.107
1524.515	1524.25	1523.985	1523.719	1523.454	1523.189	1522.923	1522.657	1522.392
1505.478	1505.188	1504.897	1504.607	1504.317	1504.027	1503.736	1503.446	1503.156
1476.843	1476.563	1476.282	1476.001	1475.721	1475.44	1475.159	1474.878	1474.597

7	7.1	7.2	7.3	7.4	7.5	7.6	7.7	7.8
1629.934	1629.672	1629.409	1629.147	1628.884	1628.622	1628.359	1628.096	1627.834
1607.703	1607.446	1607.189	1606.933	1606.676	1606.419	1606.162	1605.906	1605.649
1578.85	1578.594	1578.337	1578.08	1577.823	1577.567	1577.31	1577.052	1576.795
1522.126	1521.86	1521.594	1521.327	1521.061	1520.795	1520.528	1520.262	1519.995
1502.865	1502.575	1502.284	1501.994	1501.703	1501.412	1501.122	1500.831	1500.54
1474.316	1474.034	1473.753	1473.471	1473.19	1472.908	1472.627	1472.345	1472.063

7.9	8	8.1	8.2	8.3	8.4	8.5	8.6	8.7
1627.571	1627.309	1627.046	1626.784	1626.521	1626.259	1625.996	1625.733	1625.471
1605.391	1605.134	1604.877	1604.62	1604.363	1604.105	1603.848	1603.59	1603.333
1576.538	1576.281	1576.023	1575.766	1575.508	1575.251	1574.993	1574.735	1574.477
1519.728	1519.462	1519.195	1518.928	1518.66	1518.393	1518.126	1517.858	1517.591
1500.249	1499.958	1499.668	1499.377	1499.086	1498.795	1498.504	1498.212	1497.921
1471.781	1471.499	1471.217	1470.935	1470.653	1470.37	1470.088	1469.805	1469.523

8.8	8.9	9	9.1	9.2	9.3	9.4	9.5	9.6
1625.208	1624.946	1624.683	1624.421	1624.158	1623.895	1623.633	1623.37	1623.107
1603.075	1602.818	1602.56	1602.302	1602.044	1601.786	1601.528	1601.27	1601.012
1574.219	1573.961	1573.703	1573.445	1573.187	1572.928	1572.67	1572.411	1572.152
1517.323	1517.056	1516.788	1516.52	1516.252	1515.984	1515.715	1515.447	1515.179
1497.63	1497.339	1497.048	1496.756	1496.465	1496.174	1495.882	1495.591	1495.299
1469.24	1468.958	1468.675	1468.392	1468.109	1467.826	1467.543	1467.259	1466.976

9.7	9.8	9.9	10	10.1	10.2	10.3	10.4	10.5
1622.845	1622.582	1622.32	1622.057	1621.794	1621.532	1621.269	1621.006	1620.744
1600.754	1600.496	1600.237	1599.979	1599.721	1599.462	1599.203	1598.945	1598.686
1571.894	1571.635	1571.376	1571.117	1570.858	1570.599	1570.34	1570.08	1569.821
1514.91	1514.642	1514.373	1514.104	1513.835	1513.566	1513.297	1513.028	1512.758
1495.008	1494.716	1494.425	1494.133	1493.841	1493.55	1493.258	1492.966	1492.674
1466.693	1466.409	1466.126	1465.842	1465.558	1465.274	1464.991	1464.707	1464.423

10.6	10.7	10.8	10.9	11	11.1	11.2	11.3	11.4
1620.481	1620.218	1619.956	1619.693	1619.431	1619.168	1618.905	1618.642	1618.38
1598.427	1598.169	1597.91	1597.651	1597.392	1597.133	1596.873	1596.614	1596.355
1569.561	1569.302	1569.042	1568.782	1568.523	1568.263	1568.003	1567.743	1567.482
1512.489	1512.22	1511.95	1511.68	1511.411	1511.141	1510.871	1510.601	1510.33
1492.382	1492.09	1491.798	1491.506	1491.214	1490.922	1490.63	1490.338	1490.046
1464.138	1463.854	1463.57	1463.286	1463.001	1462.717	1462.432	1462.147	1461.862

11.5	11.6	11.7	11.8	11.9	12	12.1	12.2	12.3
1618.117	1617.854	1617.592	1617.329	1617.066	1616.804	1616.541	1616.278	1616.015
1596.096	1595.836	1595.577	1595.317	1595.058	1594.798	1594.538	1594.278	1594.019
1567.222	1566.962	1566.701	1566.441	1566.18	1565.92	1565.659	1565.398	1565.137
1510.06	1509.79	1509.519	1509.249	1508.978	1508.707	1508.436	1508.165	1507.894
1489.753	1489.461	1489.169	1488.876	1488.584	1488.292	1487.999	1487.707	1487.414
1461.578	1461.293	1461.008	1460.722	1460.437	1460.152	1459.867	1459.581	1459.296

12.4	12.5	12.6	12.7	12.8	12.9	13	13.1	13.2
1615.753	1615.49	1615.227	1614.965	1614.702	1614.439	1614.176	1613.914	1613.651
1593.759	1593.499	1593.239	1592.979	1592.718	1592.458	1592.198	1591.938	1591.677
1564.876	1564.615	1564.354	1564.093	1563.831	1563.57	1563.308	1563.047	1562.785
1507.623	1507.352	1507.081	1506.809	1506.538	1506.266	1505.994	1505.722	1505.45
1487.121	1486.829	1486.536	1486.243	1485.951	1485.658	1485.365	1485.072	1484.779
1459.01	1458.724	1458.439	1458.153	1457.867	1457.581	1457.295	1457.009	1456.722

13.3	13.4	13.5	13.6	13.7	13.8	13.9	14	14.1
1613.388	1613.125	1612.863	1612.6	1612.337	1612.074	1611.811	1611.549	1611.286
1591.417	1591.156	1590.895	1590.635	1590.374	1590.113	1589.852	1589.591	1589.33
1562.523	1562.261	1562	1561.737	1561.475	1561.213	1560.951	1560.689	1560.426
1505.178	1504.906	1504.634	1504.362	1504.089	1503.817	1503.544	1503.271	1502.998
1484.486	1484.193	1483.9	1483.607	1483.314	1483.021	1482.727	1482.434	1482.141
1456.436	1456.149	1455.863	1455.576	1455.29	1455.003	1454.716	1454.429	1454.142

14.2	14.3	14.4	14.5	14.6	14.7	14.8	14.9	15
1611.023	1610.76	1610.497	1610.235	1609.972	1609.709	1609.446	1609.183	1608.921
1589.069	1588.808	1588.547	1588.286	1588.024	1587.763	1587.502	1587.24	1586.979
1560.164	1559.901	1559.638	1559.376	1559.113	1558.85	1558.587	1558.324	1558.061
1502.725	1502.452	1502.179	1501.906	1501.633	1501.359	1501.086	1500.812	1500.539
1481.848	1481.554	1481.261	1480.967	1480.674	1480.38	1480.087	1479.793	1479.5
1453.855	1453.568	1453.281	1452.993	1452.706	1452.418	1452.131	1451.843	1451.556

15.1	15.2	15.3	15.4	15.5	15.6	15.7	15.8	15.9
1608.658	1608.395	1608.132	1607.869	1607.606	1607.343	1607.081	1606.818	1606.555
1586.717	1586.455	1586.193	1585.932	1585.67	1585.408	1585.146	1584.884	1584.621
1557.797	1557.534	1557.27	1557.007	1556.743	1556.48	1556.216	1555.952	1555.688
1500.265	1499.991	1499.717	1499.443	1499.168	1498.894	1498.62	1498.345	1498.071
1479.206	1478.912	1478.618	1478.325	1478.031	1477.737	1477.443	1477.149	1476.855
1451.268	1450.98	1450.692	1450.404	1450.116	1449.827	1449.539	1449.251	1448.962

16	16.1	16.2	16.3	16.4	16.5	16.6	16.7	16.8
1606.292	1606.029	1605.766	1605.503	1605.24	1604.978	1604.715	1604.452	1604.189
1584.359	1584.097	1583.835	1583.572	1583.31	1583.047	1582.785	1582.522	1582.259
1555.424	1555.16	1554.896	1554.631	1554.367	1554.103	1553.838	1553.573	1553.309
1497.796	1497.521	1497.246	1496.971	1496.696	1496.421	1496.146	1495.87	1495.595
1476.561	1476.267	1475.973	1475.678	1475.384	1475.09	1474.796	1474.501	1474.207
1448.674	1448.385	1448.096	1447.807	1447.519	1447.23	1446.941	1446.651	1446.362

16.9	17	17.1	17.2	17.3	17.4	17.5	17.6	17.7
1603.926	1603.663	1603.4	1603.137	1602.874	1602.611	1602.349	1602.086	1601.823
1581.996	1581.734	1581.471	1581.208	1580.945	1580.681	1580.418	1580.155	1579.892
1553.044	1552.779	1552.514	1552.249	1551.984	1551.719	1551.454	1551.188	1550.923
1495.319	1495.044	1494.768	1494.492	1494.216	1493.94	1493.664	1493.388	1493.111
1473.913	1473.618	1473.324	1473.029	1472.735	1472.44	1472.145	1471.851	1471.556
1446.073	1445.784	1445.494	1445.204	1444.915	1444.625	1444.335	1444.046	1443.756

17.8	17.9	18	18.1	18.2	18.3	18.4	18.5	18.6
1601.56	1601.297	1601.034	1600.771	1600.508	1600.245	1599.982	1599.719	1599.456
1579.628	1579.365	1579.101	1578.838	1578.574	1578.311	1578.047	1577.783	1577.519
1550.657	1550.392	1550.126	1549.86	1549.594	1549.328	1549.062	1548.796	1548.53
1492.835	1492.558	1492.282	1492.005	1491.728	1491.451	1491.174	1490.897	1490.62
1471.261	1470.966	1470.671	1470.377	1470.082	1469.787	1469.492	1469.197	1468.901
1443.466	1443.175	1442.885	1442.595	1442.305	1442.014	1441.724	1441.433	1441.142

18.7	18.8	18.9	19	19.1	19.2	19.3	19.4	19.5
1599.193	1598.93	1598.667	1598.404	1598.141	1597.878	1597.615	1597.352	1597.089
1577.255	1576.991	1576.727	1576.463	1576.199	1575.934	1575.67	1575.406	1575.141
1548.263	1547.997	1547.731	1547.464	1547.197	1546.931	1546.664	1546.397	1546.13
1490.342	1490.065	1489.787	1489.51	1489.232	1488.954	1488.676	1488.398	1488.12
1468.606	1468.311	1468.016	1467.721	1467.425	1467.13	1466.835	1466.539	1466.244
1440.852	1440.561	1440.27	1439.979	1439.688	1439.396	1439.105	1438.814	1438.522

19.6	19.7	19.8	19.9	20	20.1	20.2	20.3	20.4
1596.826	1596.563	1596.3	1596.037	1595.774	1595.511	1595.248	1594.985	1594.722
1574.877	1574.612	1574.347	1574.083	1573.818	1573.553	1573.288	1573.023	1572.758
1545.863	1545.596	1545.329	1545.061	1544.794	1544.527	1544.259	1543.991	1543.724
1487.842	1487.564	1487.285	1487.007	1486.728	1486.449	1486.17	1485.892	1485.613
1465.948	1465.653	1465.357	1465.062	1464.766	1464.47	1464.175	1463.879	1463.583
1438.231	1437.939	1437.648	1437.356	1437.064	1436.772	1436.48	1436.188	1435.896

20.5	20.6	20.7	20.8	20.9	21	21.1	21.2	21.3
1594.459	1594.196	1593.933	1593.67	1593.407	1593.144	1592.88	1592.617	1592.354
1572.493	1572.228	1571.963	1571.697	1571.432	1571.167	1570.901	1570.636	1570.37
1543.456	1543.188	1542.92	1542.652	1542.384	1542.116	1541.847	1541.579	1541.31
1485.333	1485.054	1484.775	1484.496	1484.216	1483.937	1483.657	1483.377	1483.097
1463.287	1462.991	1462.695	1462.399	1462.103	1461.807	1461.511	1461.215	1460.919
1435.604	1435.311	1435.019	1434.726	1434.434	1434.141	1433.848	1433.556	1433.263

21.4	21.5	21.6	21.7	21.8	21.9	22	22.1	22.2
1592.091	1591.828	1591.565	1591.302	1591.039	1590.776	1590.513	1590.249	1589.986
1570.104	1569.839	1569.573	1569.307	1569.041	1568.775	1568.509	1568.243	1567.977
1541.042	1540.773	1540.504	1540.236	1539.967	1539.698	1539.429	1539.159	1538.89
1482.817	1482.537	1482.257	1481.977	1481.696	1481.416	1481.135	1480.855	1480.574
1460.623	1460.326	1460.03	1459.734	1459.437	1459.141	1458.845	1458.548	1458.252
1432.97	1432.677	1432.383	1432.09	1431.797	1431.503	1431.21	1430.916	1430.623

22.3	22.4	22.5	22.6	22.7	22.8	22.9	23	23.1
1589.723	1589.46	1589.197	1588.934	1588.671	1588.408	1588.144	1587.881	1587.618
1567.71	1567.444	1567.178	1566.911	1566.645	1566.378	1566.112	1565.845	1565.578
1538.621	1538.351	1538.082	1537.812	1537.543	1537.273	1537.003	1536.733	1536.463
1480.293	1480.012	1479.731	1479.45	1479.168	1478.887	1478.606	1478.324	1478.042
1457.955	1457.658	1457.362	1457.065	1456.768	1456.472	1456.175	1455.878	1455.581
1430.329	1430.035	1429.741	1429.447	1429.153	1428.859	1428.565	1428.271	1427.976

23.2	23.3	23.4	23.5	23.6	23.7	23.8	23.9	24
1587.355	1587.092	1586.829	1586.566	1586.302	1586.039	1585.776	1585.513	1585.25
1565.311	1565.044	1564.777	1564.51	1564.243	1563.976	1563.709	1563.442	1563.174
1536.193	1535.923	1535.653	1535.383	1535.112	1534.842	1534.571	1534.3	1534.03
1477.761	1477.479	1477.197	1476.915	1476.633	1476.35	1476.068	1475.786	1475.503
1455.284	1454.987	1454.69	1454.393	1454.096	1453.799	1453.502	1453.204	1452.907
1427.682	1427.387	1427.093	1426.798	1426.503	1426.208	1425.913	1425.618	1425.323

24.1	24.2	24.3	24.4	24.5	24.6	24.7	24.8	24.9
1584.986	1584.723	1584.46	1584.197	1583.934	1583.67	1583.407	1583.144	1582.881
1562.907	1562.64	1562.372	1562.104	1561.837	1561.569	1561.301	1561.033	1560.765
1533.759	1533.488	1533.217	1532.946	1532.675	1532.403	1532.132	1531.861	1531.589
1475.221	1474.938	1474.655	1474.372	1474.089	1473.806	1473.523	1473.239	1472.956
1452.61	1452.313	1452.015	1451.718	1451.42	1451.123	1450.825	1450.528	1450.23
1425.028	1424.733	1424.437	1424.142	1423.846	1423.551	1423.255	1422.959	1422.663

25	25.1	25.2	25.3	25.4	25.5	25.6	25.7	25.8
1582.618	1582.354	1582.091	1581.828	1581.565	1581.301	1581.038	1580.775	1580.512
1560.498	1560.229	1559.961	1559.693	1559.425	1559.157	1558.888	1558.62	1558.351
1531.318	1531.046	1530.774	1530.502	1530.23	1529.958	1529.686	1529.414	1529.142
1472.673	1472.389	1472.105	1471.821	1471.537	1471.253	1470.969	1470.685	1470.401
1449.933	1449.635	1449.337	1449.039	1448.742	1448.444	1448.146	1447.848	1447.55
1422.368	1422.071	1421.775	1421.479	1421.183	1420.887	1420.59	1420.294	1419.997

25.9	26	26.1	26.2	26.3	26.4	26.5	26.6	26.7
1580.248	1579.985	1579.722	1579.458	1579.195	1578.932	1578.669	1578.405	1578.142
1558.083	1557.814	1557.546	1557.277	1557.008	1556.739	1556.47	1556.201	1555.932
1528.869	1528.597	1528.324	1528.052	1527.779	1527.506	1527.234	1526.961	1526.688
1470.116	1469.832	1469.547	1469.263	1468.978	1468.693	1468.408	1468.123	1467.838
1447.252	1446.954	1446.656	1446.358	1446.059	1445.761	1445.463	1445.165	1444.866
1419.7	1419.404	1419.107	1418.81	1418.513	1418.216	1417.919	1417.621	1417.324

26.8	26.9	27	27.1	27.2	27.3	27.4	27.5	27.6
1577.879	1577.615	1577.352	1577.089	1576.825	1576.562	1576.299	1576.036	1575.772
1555.663	1555.394	1555.125	1554.855	1554.586	1554.316	1554.047	1553.777	1553.508
1526.415	1526.141	1525.868	1525.595	1525.321	1525.048	1524.774	1524.501	1524.227
1467.553	1467.267	1466.982	1466.696	1466.41	1466.125	1465.839	1465.553	1465.267
1444.568	1444.27	1443.971	1443.673	1443.374	1443.076	1442.777	1442.478	1442.18
1417.027	1416.729	1416.432	1416.134	1415.836	1415.538	1415.24	1414.942	1414.644

27.7	27.8	27.9	28	28.1	28.2	28.3	28.4	28.5
1575.509	1575.245	1574.982	1574.719	1574.455	1574.192	1573.929	1573.665	1573.402
1553.238	1552.968	1552.698	1552.428	1552.158	1551.888	1551.618	1551.348	1551.078
1523.953	1523.679	1523.405	1523.131	1522.857	1522.582	1522.308	1522.034	1521.759
1464.981	1464.694	1464.408	1464.122	1463.835	1463.548	1463.262	1462.975	1462.688
1441.881	1441.582	1441.283	1440.984	1440.686	1440.387	1440.088	1439.789	1439.49
1414.346	1414.048	1413.75	1413.451	1413.153	1412.854	1412.556	1412.257	1411.958

28.6	28.7	28.8	28.9	29	29.1	29.2	29.3	29.4
1573.139	1572.875	1572.612	1572.348	1572.085	1571.822	1571.558	1571.295	1571.032
1550.808	1550.537	1550.267	1549.996	1549.726	1549.455	1549.185	1548.914	1548.643
1521.484	1521.21	1520.935	1520.66	1520.385	1520.11	1519.835	1519.56	1519.284
1462.401	1462.114	1461.826	1461.539	1461.252	1460.964	1460.677	1460.389	1460.101
1439.19	1438.891	1438.592	1438.293	1437.994	1437.694	1437.395	1437.096	1436.796
1411.659	1411.36	1411.061	1410.762	1410.463	1410.163	1409.864	1409.565	1409.265

29.5	29.6	29.7	29.8	29.9	30	30.1	30.2	30.3
1570.768	1570.505	1570.241	1569.978	1569.714	1569.451	1569.188	1568.924	1568.661
1548.372	1548.101	1547.83	1547.559	1547.288	1547.017	1546.746	1546.474	1546.203
1519.009	1518.734	1518.458	1518.182	1517.907	1517.631	1517.355	1517.079	1516.803
1459.813	1459.525	1459.237	1458.949	1458.66	1458.372	1458.083	1457.795	1457.506
1436.497	1436.197	1435.898	1435.598	1435.299	1434.999	1434.699	1434.4	1434.1
1408.965	1408.666	1408.366	1408.066	1407.766	1407.466	1407.166	1406.866	1406.565

30.4	30.5	30.6	30.7	30.8	30.9	31	31.1	31.2
1568.397	1568.134	1567.87	1567.607	1567.343	1567.08	1566.817	1566.553	1566.29
1545.932	1545.66	1545.389	1545.117	1544.845	1544.574	1544.302	1544.03	1543.758
1516.527	1516.251	1515.975	1515.698	1515.422	1515.145	1514.869	1514.592	1514.315
1457.217	1456.928	1456.639	1456.35	1456.061	1455.772	1455.483	1455.193	1454.903
1433.8	1433.5	1433.2	1432.9	1432.6	1432.3	1432	1431.7	1431.4
1406.265	1405.965	1405.664	1405.363	1405.063	1404.762	1404.461	1404.16	1403.859

31.3	31.4	31.5	31.6	31.7	31.8	31.9	32	32.1
1566.026	1565.763	1565.499	1565.236	1564.972	1564.709	1564.445	1564.182	1563.918
1543.486	1543.214	1542.942	1542.669	1542.397	1542.125	1541.852	1541.58	1541.307
1514.038	1513.761	1513.484	1513.207	1512.93	1512.652	1512.375	1512.098	1511.82
1454.614	1454.324	1454.034	1453.744	1453.454	1453.164	1452.874	1452.583	1452.293
1431.1	1430.8	1430.499	1430.199	1429.899	1429.598	1429.298	1428.998	1428.697
1403.558	1403.257	1402.956	1402.654	1402.353	1402.051	1401.75	1401.448	1401.146

32.2	32.3	32.4	32.5	32.6	32.7	32.8	32.9	33
1563.655	1563.391	1563.128	1562.864	1562.6	1562.337	1562.073	1561.81	1561.546
1541.035	1540.762	1540.49	1540.217	1539.944	1539.671	1539.398	1539.125	1538.852
1511.542	1511.265	1510.987	1510.709	1510.431	1510.153	1509.875	1509.597	1509.318
1452.002	1451.711	1451.421	1451.13	1450.839	1450.548	1450.257	1449.965	1449.674
1428.397	1428.096	1427.795	1427.495	1427.194	1426.893	1426.593	1426.292	1425.991
1400.844	1400.542	1400.24	1399.938	1399.636	1399.334	1399.032	1398.729	1398.427

33.1	33.2	33.3	33.4	33.5	33.6	33.7	33.8	33.9
1561.283	1561.019	1560.756	1560.492	1560.229	1559.965	1559.701	1559.438	1559.174
1538.579	1538.306	1538.032	1537.759	1537.485	1537.212	1536.938	1536.665	1536.391
1509.04	1508.761	1508.483	1508.204	1507.926	1507.647	1507.368	1507.089	1506.81
1449.383	1449.091	1448.799	1448.508	1448.216	1447.924	1447.632	1447.34	1447.048
1425.69	1425.389	1425.088	1424.787	1424.486	1424.185	1423.884	1423.583	1423.281
1398.124	1397.821	1397.519	1397.216	1396.913	1396.61	1396.307	1396.004	1395.701

34	34.1	34.2	34.3	34.4	34.5	34.6	34.7	34.8
1558.911	1558.647	1558.383	1558.12	1557.856	1557.593	1557.329	1557.065	1556.802
1536.117	1535.844	1535.57	1535.296	1535.022	1534.748	1534.474	1534.199	1533.925
1506.531	1506.251	1505.972	1505.693	1505.413	1505.134	1504.854	1504.574	1504.294
1446.755	1446.463	1446.17	1445.878	1445.585	1445.292	1444.999	1444.706	1444.413
1422.98	1422.679	1422.378	1422.076	1421.775	1421.473	1421.172	1420.87	1420.569
1395.397	1395.094	1394.79	1394.487	1394.183	1393.879	1393.576	1393.272	1392.968

34.9	35	35.1	35.2	35.3	35.4	35.5	35.6	35.7
1556.538	1556.275	1556.011	1555.747	1555.484	1555.22	1554.956	1554.693	1554.429
1533.651	1533.377	1533.102	1532.828	1532.553	1532.278	1532.004	1531.729	1531.454
1504.014	1503.735	1503.454	1503.174	1502.894	1502.614	1502.333	1502.053	1501.772
1444.12	1443.827	1443.533	1443.24	1442.946	1442.652	1442.358	1442.065	1441.771
1420.267	1419.966	1419.664	1419.362	1419.06	1418.759	1418.457	1418.155	1417.853
1392.664	1392.36	1392.055	1391.751	1391.447	1391.142	1390.838	1390.533	1390.228

35.8	35.9	36	36.1	36.2	36.3	36.4	36.5	36.6
1554.165	1553.902	1553.638	1553.374	1553.111	1552.847	1552.583	1552.32	1552.056
1531.179	1530.904	1530.629	1530.354	1530.079	1529.804	1529.528	1529.253	1528.978
1501.492	1501.211	1500.93	1500.649	1500.368	1500.087	1499.806	1499.525	1499.243
1441.476	1441.182	1440.888	1440.594	1440.299	1440.005	1439.71	1439.415	1439.12
1417.551	1417.249	1416.947	1416.645	1416.343	1416.04	1415.738	1415.436	1415.134
1389.923	1389.619	1389.314	1389.009	1388.703	1388.398	1388.093	1387.788	1387.482

36.7	36.8	36.9	37	37.1	37.2	37.3	37.4	37.5
1551.792	1551.529	1551.265	1551.001	1550.737	1550.474	1550.21	1549.946	1549.683
1528.702	1528.427	1528.151	1527.876	1527.6	1527.324	1527.048	1526.772	1526.496
1498.962	1498.68	1498.399	1498.117	1497.835	1497.554	1497.272	1496.99	1496.708
1438.825	1438.53	1438.235	1437.94	1437.644	1437.349	1437.053	1436.758	1436.462
1414.831	1414.529	1414.227	1413.924	1413.622	1413.319	1413.017	1412.714	1412.411
1387.177	1386.871	1386.565	1386.26	1385.954	1385.648	1385.342	1385.036	1384.729

37.6	37.7	37.8	37.9	38	38.1	38.2	38.3	38.4
1549.419	1549.155	1548.891	1548.628	1548.364	1548.1	1547.836	1547.573	1547.309
1526.22	1525.944	1525.668	1525.392	1525.115	1524.839	1524.563	1524.286	1524.01
1496.425	1496.143	1495.861	1495.578	1495.296	1495.013	1494.731	1494.448	1494.165
1436.166	1435.87	1435.574	1435.278	1434.982	1434.685	1434.389	1434.092	1433.796
1412.109	1411.806	1411.503	1411.2	1410.897	1410.595	1410.292	1409.989	1409.686
1384.423	1384.117	1383.81	1383.504	1383.197	1382.891	1382.584	1382.277	1381.97

38.5	38.6	38.7	38.8	38.9	39	39.1	39.2	39.3
1547.045	1546.781	1546.517	1546.254	1545.99	1545.726	1545.462	1545.199	1544.935
1523.733	1523.456	1523.18	1522.903	1522.626	1522.349	1522.072	1521.795	1521.518
1493.882	1493.599	1493.316	1493.033	1492.749	1492.466	1492.183	1491.899	1491.616
1433.499	1433.202	1432.905	1432.608	1432.311	1432.014	1431.716	1431.419	1431.121
1409.383	1409.079	1408.776	1408.473	1408.17	1407.867	1407.563	1407.26	1406.957
1381.663	1381.356	1381.049	1380.741	1380.434	1380.127	1379.819	1379.512	1379.204

39.4	39.5	39.6	39.7	39.8	39.9	40	40.1	40.2
1544.671	1544.407	1544.143	1543.879	1543.616	1543.352	1543.088	1542.824	1542.56
1521.241	1520.963	1520.686	1520.409	1520.131	1519.854	1519.576	1519.298	1519.021
1491.332	1491.048	1490.764	1490.48	1490.196	1489.912	1489.628	1489.344	1489.059
1430.824	1430.526	1430.228	1429.93	1429.632	1429.334	1429.036	1428.738	1428.439
1406.653	1406.35	1406.046	1405.743	1405.439	1405.136	1404.832	1404.528	1404.225
1378.896	1378.588	1378.28	1377.972	1377.664	1377.356	1377.048	1376.74	1376.431

40.3	40.4	40.5	40.6	40.7	40.8	40.9	41	41.1
1542.296	1542.033	1541.769	1541.505	1541.241	1540.977	1540.713	1540.45	1540.186
1518.743	1518.465	1518.187	1517.909	1517.631	1517.353	1517.075	1516.797	1516.518
1488.775	1488.49	1488.206	1487.921	1487.636	1487.351	1487.067	1486.782	1486.496
1428.141	1427.842	1427.543	1427.245	1426.946	1426.647	1426.348	1426.049	1425.749
1403.921	1403.617	1403.313	1403.009	1402.705	1402.401	1402.097	1401.793	1401.489
1376.123	1375.814	1375.506	1375.197	1374.888	1374.579	1374.27	1373.961	1373.652

41.2	41.3	41.4	41.5	41.6	41.7	41.8	41.9	42
1539.922	1539.658	1539.394	1539.13	1538.866	1538.602	1538.338	1538.075	1537.811
1516.24	1515.962	1515.683	1515.405	1515.126	1514.847	1514.569	1514.29	1514.011
1486.211	1485.926	1485.641	1485.355	1485.07	1484.784	1484.498	1484.212	1483.927
1425.45	1425.15	1424.851	1424.551	1424.251	1423.951	1423.651	1423.351	1423.051
1401.185	1400.881	1400.577	1400.272	1399.968	1399.664	1399.359	1399.055	1398.751
1373.343	1373.033	1372.724	1372.415	1372.105	1371.795	1371.486	1371.176	1370.866

42.1	42.2	42.3	42.4	42.5	42.6	42.7	42.8	42.9
1537.547	1537.283	1537.019	1536.755	1536.491	1536.227	1535.963	1535.699	1535.435
1513.732	1513.453	1513.174	1512.895	1512.616	1512.337	1512.057	1511.778	1511.498
1483.641	1483.355	1483.068	1482.782	1482.496	1482.21	1481.923	1481.637	1481.35
1422.751	1422.451	1422.15	1421.85	1421.549	1421.248	1420.947	1420.646	1420.345
1398.446	1398.142	1397.837	1397.532	1397.228	1396.923	1396.618	1396.314	1396.009
1370.556	1370.246	1369.936	1369.626	1369.315	1369.005	1368.695	1368.384	1368.073

43	43.1	43.2	43.3	43.4	43.5	43.6	43.7	43.8
1535.171	1534.907	1534.643	1534.379	1534.115	1533.852	1533.588	1533.324	1533.06
1511.219	1510.939	1510.66	1510.38	1510.1	1509.82	1509.541	1509.261	1508.981
1481.063	1480.777	1480.49	1480.203	1479.916	1479.629	1479.341	1479.054	1478.767
1420.044	1419.743	1419.442	1419.14	1418.839	1418.537	1418.235	1417.933	1417.631
1395.704	1395.399	1395.094	1394.789	1394.484	1394.179	1393.874	1393.569	1393.264
1367.763	1367.452	1367.141	1366.83	1366.519	1366.208	1365.897	1365.586	1365.274

43.9	44	44.1	44.2	44.3	44.4	44.5	44.6	44.7
1532.796	1532.532	1532.268	1532.004	1531.74	1531.476	1531.212	1530.948	1530.684
1508.701	1508.42	1508.14	1507.86	1507.58	1507.299	1507.019	1506.738	1506.458
1478.479	1478.192	1477.904	1477.616	1477.328	1477.041	1476.753	1476.465	1476.176
1417.329	1417.027	1416.725	1416.423	1416.12	1415.818	1415.515	1415.212	1414.91
1392.958	1392.653	1392.348	1392.043	1391.737	1391.432	1391.126	1390.821	1390.515
1364.963	1364.651	1364.34	1364.028	1363.716	1363.404	1363.092	1362.78	1362.468

44.8	44.9	45	45.1	45.2	45.3	45.4	45.5	45.6
1530.42	1530.156	1529.892	1529.627	1529.363	1529.099	1528.835	1528.571	1528.307
1506.177	1505.896	1505.616	1505.335	1505.054	1504.773	1504.492	1504.211	1503.929
1475.888	1475.6	1475.312	1475.023	1474.734	1474.446	1474.157	1473.868	1473.579
1414.607	1414.304	1414.001	1413.697	1413.394	1413.091	1412.787	1412.483	1412.18
1390.21	1389.904	1389.599	1389.293	1388.987	1388.681	1388.376	1388.07	1387.764
1362.156	1361.844	1361.532	1361.219	1360.907	1360.594	1360.281	1359.969	1359.656

45.7	45.8	45.9	46	46.1	46.2	46.3	46.4	46.5
1528.043	1527.779	1527.515	1527.251	1526.987	1526.723	1526.459	1526.195	1525.931
1503.648	1503.367	1503.086	1502.804	1502.523	1502.241	1501.96	1501.678	1501.396
1473.29	1473.001	1472.712	1472.423	1472.134	1471.844	1471.555	1471.265	1470.976
1411.876	1411.572	1411.268	1410.964	1410.66	1410.356	1410.051	1409.747	1409.442
1387.458	1387.152	1386.846	1386.54	1386.234	1385.928	1385.621	1385.315	1385.009
1359.343	1359.03	1358.717	1358.404	1358.09	1357.777	1357.464	1357.15	1356.837

46.6	46.7	46.8	46.9	47	47.1	47.2	47.3	47.4
1525.667	1525.402	1525.138	1524.874	1524.61	1524.346	1524.082	1523.818	1523.554
1501.114	1500.832	1500.551	1500.269	1499.987	1499.704	1499.422	1499.14	1498.858
1470.686	1470.396	1470.106	1469.816	1469.526	1469.236	1468.946	1468.655	1468.365
1409.137	1408.833	1408.528	1408.223	1407.918	1407.613	1407.307	1407.002	1406.696
1384.703	1384.396	1384.09	1383.784	1383.477	1383.171	1382.864	1382.558	1382.251
1356.523	1356.209	1355.895	1355.581	1355.268	1354.953	1354.639	1354.325	1354.011

47.5	47.6	47.7	47.8	47.9	48	48.1	48.2	48.3
1523.29	1523.025	1522.761	1522.497	1522.233	1521.969	1521.705	1521.44	1521.176
1498.575	1498.293	1498.01	1497.728	1497.445	1497.162	1496.88	1496.597	1496.314
1468.075	1467.784	1467.493	1467.203	1466.912	1466.621	1466.33	1466.039	1465.748
1406.391	1406.085	1405.779	1405.474	1405.168	1404.862	1404.555	1404.249	1403.943
1381.944	1381.638	1381.331	1381.024	1380.717	1380.41	1380.104	1379.797	1379.49
1353.696	1353.382	1353.067	1352.753	1352.438	1352.123	1351.808	1351.493	1351.178

48.4	48.5	48.6	48.7	48.8	48.9	49	49.1	49.2
1520.912	1520.648	1520.384	1520.12	1519.855	1519.591	1519.327	1519.063	1518.799
1496.031	1495.748	1495.465	1495.182	1494.899	1494.615	1494.332	1494.048	1493.765
1465.456	1465.165	1464.874	1464.582	1464.291	1463.999	1463.707	1463.415	1463.123
1403.636	1403.33	1403.023	1402.716	1402.41	1402.103	1401.796	1401.489	1401.181
1379.183	1378.876	1378.568	1378.261	1377.954	1377.647	1377.34	1377.032	1376.725
1350.863	1350.548	1350.233	1349.917	1349.602	1349.286	1348.971	1348.655	1348.339

49.3	49.4	49.5	49.6	49.7	49.8	49.9	50
1518.535	1518.27	1518.006	1517.742	1517.478	1517.213	1516.949	1516.685
1493.482	1493.198	1492.914	1492.631	1492.347	1492.063	1491.779	1491.495
1462.831	1462.539	1462.247	1461.955	1461.663	1461.37	1461.078	1460.785
1400.874	1400.567	1400.259	1399.951	1399.644	1399.336	1399.028	1398.72
1376.418	1376.11	1375.803	1375.495	1375.188	1374.88	1374.573	1374.265
1348.023	1347.707	1347.391	1347.075	1346.759	1346.443	1346.126	1345.81