

SUPPLEMENTARY INFORMATION

Predicting Glass Structure by Physics-Informed Machine Learning

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Supplementary Table 1. Literature data of glass compositions and corresponding fractions of structural units (in mol%) used for training and testing the present models. Abbreviations refer to their parent oxides (e.g., “Na” refers to Na₂O) and structural units (e.g., Si⁶ refers to 6-fold coordinated silicon).

The fractions of structural units are obtained by solid state NMR spectroscopy.¹⁻⁶⁷

Na	Li	K	Cs	Ca	Mg	Si	P	B	Al	Si ⁶	Si ⁵	Si ⁴	Si ³	Si ²	Si ¹	Si ⁰	P ³	P ²	P ¹	P ⁰	B ⁴	Al ⁴	Al ⁶
0	0	0	0	44	0	42	0	0	14	0	0	1.77	23.87	29.23	5.04	0.09	0	0	0	0	0	36.96	3.04
0	0	0	0	47	0	46	0	0	7	0	0	0.72	21.55	43.18	10.95	0.27	0	0	0	0	0	21.14	2.19
0	0	0	0	27	0	55	0	0	18	0	0	36.13	22.07	2.2	0.04	0	0	0	0	0	0	37.86	1.7
0	0	0	0	30	0	60	0	0	10	0	0	28.65	38.23	7.84	0.28	0	0	0	0	0	0	23.78	1.23
0	0	0	0	19	0	63	0	0	18	0	0	57.38	6.15	0.11	0	0	0	0	0	0	0	35.27	1.09
0	0	0	0	13	0	76	0	0	11	0	0	73.7	3.82	0.03	0	0	0	0	0	0	0	22.45	0
0	0	0	0	16	0	77	0	0	7	0	0	65.2	18.54	0.88	0.01	0	0	0	0	0	0	15.29	0.09
0	0	0	0	44.75	0	0	55.25	0	0	0	0	0	0	0	0	0	19	81	0	0	0	0	0
0	0	0	0	61.55	0	0	38.45	0	0	0	0	0	0	0	0	0	0	39.9	60.1	0	0	0	0
0	0	0	0	57.57	0	0	42.43	0	0	0	0	0	0	0	0	0	0	64.3	35.7	0	0	0	0
0	0	0	0	55.2	0	0	44.8	0	0	0	0	0	0	0	0	0	0	76.8	23.2	0	0	0	0
0	0	0	0	52.99	0	0	47.01	0	0	0	0	0	0	0	0	0	0	87.3	12.7	0	0	0	0
0	0	0	0	46.41	0	0	53.59	0	0	0	0	0	0	0	0	0	13.4	86.6	0	0	0	0	0
0	0	0	0	45.98	0	0	54.02	0	0	0	0	0	0	0	0	0	14.9	85.1	0	0	0	0	0
0	0	0	0	45.18	0	0	54.82	0	0	0	0	0	0	0	0	0	17.6	82.4	0	0	0	0	0
0	0	0	0	43.79	0	0	56.21	0	0	0	0	0	0	0	0	0	22.1	77.9	0	0	0	0	0
0	0	0	0	42.86	0	0	57.14	0	0	0	0	0	0	0	0	0	25	75	0	0	0	0	0
0	0	0	0	41.99	0	0	58.01	0	0	0	0	0	0	0	0	0	27.63	72.37	0	0	0	0	0
0	0	0	0	40.54	0	0	59.46	0	0	0	0	0	0	0	0	0	31.83	68.17	0	0	0	0	0
0	0	0	0	44.01	0	0	55.99	0	0	0	0	0	0	0	0	0	21.4	78.6	0	0	0	0	0
0	0	0	0	49.42	0	0	50.58	0	0	0	0	0	0	0	0	0	6.4	89.5	4.1	0	0	0	0
0	0	0	0	53.75	0	0	46.25	0	0	0	0	0	0	0	0	0	2.1	79.6	18.3	0	0	0	0
0	0	0	0	52.25	0	43.29	4.46	0	0	0	0	0	57.47	19.55	2.17	3.73	0	0	4.62	12.47	0	0	0
0	0	0	0	49.87	0	41.12	9.01	0	0	0	0	0	54.72	12.85	0.83	1.13	0	0	9.57	20.9	0	0	0
0	0	0	0	48.04	0	38.16	13.8	0	0	0	0	0	55.1	2.93	0	0	0	0	13.99	27.98	0	0	0

0	0	0	0	52.25	0	43.29	4.46	0	0	0	0	0	55.43	19.55	3.21	4.73	0	0	10.07	7.02	0	0	0
0	0	0	0	49.87	0	41.12	9.01	0	0	0	0	0	51.25	13.29	2.3	2.68	0	0	22.01	8.46	0	0	0
0	0	0	0	48.04	0	38.16	13.8	0	0	0	0	0	50.61	4.41	1.93	1.07	0	0	32.96	9.01	0	0	0
0	0	0	0	42	0	58	0	0	0	0	0	0	8.3	50.2	36.5	5	0	0	0	0	0	0	0
0	0	0	0	46	0	54	0	0	0	0	0	0	7.2	34.2	52.5	6.1	0	0	0	0	0	0	0
0	0	0	0	50	0	50	0	0	0	0	0	0	0	19	64.4	16.6	0	0	0	0	0	0	0
0	0	0	0	52	0	48	0	0	0	0	0	0	0	10	60.4	29.6	0	0	0	0	0	0	0
0	0	0	0	55	0	45	0	0	0	0	0	0	0	5.8	46	48.2	0	0	0	0	0	0	0
0	0	0	0	58	0	42	0	0	0	0	0	0	0	0	19.6	65.3	15.1	0	0	0	0	0	0
0	0	0	0	61	0	39	0	0	0	0	0	0	0	0	14.1	65.8	20.1	0	0	0	0	0	0
0	0	0	25.7	0	0	0	0	69.3	5	0	0	0	0	0	0	0	0	0	0	29.78	6.37	0.40	
0	0	0	25.2	0	0	0	0	59.5	15.3	0	0	0	0	0	0	0	0	0	0	14.71	19.32	1.70	
0	0	0	25.5	0	0	0	0	54.1	20.4	0	0	0	0	0	0	0	0	0	0	5.87	26.21	2.59	
0	0	0	25.5	0	0	0	0	50.1	24.4	0	0	0	0	0	0	0	0	0	0	3.49	30.17	3.29	
0	0	0	25	0	0	0	0	44.8	30.2	0	0	0	0	0	0	0	0	0	0	0.90	35.15	5.78	
0	0	0	20.43	0	0	0	0	74.18	5.38	0	0	0	0	0	0	0	0	0	0	22.56	6.62	0.14	
0	0	0	20.15	0	0	0	0	69.37	10.48	0	0	0	0	0	0	0	0	0	0	16.07	12.49	0.63	
0	0	0	20	0	0	0	0	64.66	15.34	0	0	0	0	0	0	0	0	0	0	10.99	17.28	1.90	
0	0	0	19.63	0	0	0	0	59.69	20.68	0	0	0	0	0	0	0	0	0	0	7.43	20.92	4.81	
0	0	0	19.76	0	0	0	0	54.55	25.69	0	0	0	0	0	0	0	0	0	0	5.44	23.53	8.48	
0	0	0	15.01	0	0	0	0	64.52	20.47	0	0	0	0	0	0	0	0	0	0	7.14	13.61	10.48	
0	0	0	25.36	0	0	0	0	54.04	20.6	0	0	0	0	0	0	0	0	0	0	9.48	26.63	0.97	
0	0	0	30.11	0	0	0	0	49.7	20.19	0	0	0	0	0	0	0	0	0	0	13.80	28.31	0.58	
0	0	0	34.95	0	0	0	0	44.82	20.23	0	0	0	0	0	0	0	0	0	0	15.71	30.54	0.56	
0	0	0	39.68	0	0	0	0	39.89	20.43	0	0	0	0	0	0	0	0	0	0	12.30	33.23	0.64	
0	0	0	44.91	0	0	0	0	34.71	20.38	0	0	0	0	0	0	0	0	0	0	7.75	36.33	0.67	
0	0	0	30	0	0	0	0	40	30	0	0	0	0	0	0	0	0	0	0	1.60	41.76	1.10	
0	0	0	40	0	0	0	0	30	30	0	0	0	0	0	0	0	0	0	0	0.90	49.45	0.60	
0	0	0	40	0	0	0	0	40	20	0	0	0	0	0	0	0	0	0	0	9.83	32.34	0.14	
0	0	0	20	0	0	0	0	50	30	0	0	0	0	0	0	0	0	0	0	2.30	27.73	9.71	
0	0	0	35	0	0	0	0	55	10	0	0	0	0	0	0	0	0	0	0	23.30	14.90	0.50	
0	0	0	30	0	0	0	0	65	5	0	0	0	0	0	0	0	0	0	0	28.67	6.89	0.30	

0	0	0	16.67	0	0	0	0	83.33	0	0	0	0	0	0	0	0	0	0	0	14.4	0	0
0	0	0	25.37	0	0	0	0	74.63	0	0	0	0	0	0	0	0	0	0	0	25.8	0	0
0	0	0	33.33	0	0	0	0	66.67	0	0	0	0	0	0	0	0	0	0	0	28.3	0	0
0	0	0	40.01	0	0	0	0	59.99	0	0	0	0	0	0	0	0	0	0	0	27.8	0	0
0	0	0	45.05	0	0	0	0	54.95	0	0	0	0	0	0	0	0	0	0	0	24	0	0
0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0	0	100	0	0	0	0	0
0	0	0	5	0	0	0	95	0	0	0	0	0	0	0	0	0	92	8	0	0	0	0
0	0	0	10	0	0	0	90	0	0	0	0	0	0	0	0	0	87	13	0	0	0	0
0	0	0	12.5	0	0	0	87.5	0	0	0	0	0	0	0	0	0	85	15	0	0	0	0
0	0	0	15	0	0	0	85	0	0	0	0	0	0	0	0	0	80	20	0	0	0	0
0	0	0	20	0	0	0	80	0	0	0	0	0	0	0	0	0	71	29	0	0	0	0
0	0	0	25	0	0	0	75	0	0	0	0	0	0	0	0	0	66	34	0	0	0	0
0	0	0	30	0	0	0	70	0	0	0	0	0	0	0	0	0	52	48	0	0	0	0
0	0	0	40	0	0	0	60	0	0	0	0	0	0	0	0	0	34	66	0	0	0	0
0	0	0	45	0	0	0	55	0	0	0	0	0	0	0	0	0	22	78	0	0	0	0
0	0	0	50	0	0	0	50	0	0	0	0	0	0	0	0	0	0	100	0	0	0	0
0	0	0	55	0	0	0	45	0	0	0	0	0	0	0	0	0	0	78	22	0	0	0
0	0	0	60	0	0	0	40	0	0	0	0	0	0	0	0	0	0	45	55	0	0	0
0	0	0	11.3	0	0	88.7	0	0	0	0	0	76	24	0	0	0	0	0	0	0	0	0
0	0	0	23.3	0	0	76.7	0	0	0	0	0	33	67	0	0	0	0	0	0	0	0	0
0	0	0	31.3	0	0	68.7	0	0	0	0	0	9	91	0	0	0	0	0	0	0	0	0
0	0	0	37.8	0	0	62.2	0	0	0	0	0	0	79	21	0	0	0	0	0	0	0	0
0	0	0	39.7	0	0	60.3	0	0	0	0	0	0	68	32	0	0	0	0	0	0	0	0
0	0	0	45.1	0	0	54.9	0	0	0	0	0	0	38	62	0	0	0	0	0	0	0	0
0	0	0	1.82	0	0	98.18	0	0	0	0	0	95.66	4.34	0	0	0	0	0	0	0	0	0
0	0	0	5.11	0	0	94.89	0	0	0	0	0	88.76	11.24	0	0	0	0	0	0	0	0	0
0	0	0	12.33	0	0	87.67	0	0	0	0	0	71.06	28.94	0	0	0	0	0	0	0	0	0
0	0	0	16.77	0	0	83.23	0	0														

0	0	13.04	0	0	0	0	0	86.96	0	0	0	0	0	0	0	0	0	0	0	0	11.01	0	0
0	0	17.95	0	0	0	0	0	82.05	0	0	0	0	0	0	0	0	0	0	0	0	15.12	0	0
0	0	22.85	0	0	0	0	0	77.15	0	0	0	0	0	0	0	0	0	0	0	0	22.11	0	0
0	0	27.91	0	0	0	0	0	72.09	0	0	0	0	0	0	0	0	0	0	0	0	34.9	0	0
0	0	32.84	0	0	0	0	0	67.16	0	0	0	0	0	0	0	0	0	0	0	0	39.99	0	0
0	0	37.96	0	0	0	0	0	62.04	0	0	0	0	0	0	0	0	0	0	0	0	39.97	0	0
0	0	45.22	0	0	0	0	0	54.78	0	0	0	0	0	0	0	0	0	0	0	0	30.17	0	0
0	0	20	0	0	0	80	0	0	0	0	0	49	51	0	0	0	0	0	0	0	0	0	0
0	0	27.3	0	0	0	72.7	0	0	0	0	0	25	72	3	0	0	0	0	0	0	0	0	0
0	0	28.6	0	0	0	71.4	0	0	0	0	0	22	74	4	0	0	0	0	0	0	0	0	0
0	0	33.3	0	0	0	66.7	0	0	0	0	0	7	86	7	0	0	0	0	0	0	0	0	0
0	0	36.4	0	0	0	63.6	0	0	0	0	0	5	81	14	0	0	0	0	0	0	0	0	0
0	0	40	0	0	0	60	0	0	0	0	0	0	67	32	1	0	0	0	0	0	0	0	0
0	0	42.9	0	0	0	57.1	0	0	0	0	0	0	51	48	1	0	0	0	0	0	0	0	0
0	0	44.4	0	0	0	55.6	0	0	0	0	0	0	41	57	2	0	0	0	0	0	0	0	0
0	0	50	0	0	0	50	0	0	0	0	0	0	9	84	7	0	0	0	0	0	0	0	0
0	0	28.15	0	0	0	71.85	0	0	0	0	0	18.54	76.68	4.78	0	0	0	0	0	0	0	0	0
0	0	45.74	0	0	0	54.26	0	0	0	0	0	0	31.36	63.37	5.27	0	0	0	0	0	0	0	0
0	0	49.46	0	0	0	50.54	0	0	0	0	0	0	11.43	81.76	6.81	0	0	0	0	0	0	0	0
0	23.9	0	0	0	0	0	0	70.9	5.3	0	0	0	0	0	0	0	0	0	0	0	27.91	6.12	0.80
0	24.7	0	0	0	0	0	0	59.5	15.8	0	0	0	0	0	0	0	0	0	0	0	16.43	15.83	5.61
0	27.4	0	0	0	0	0	0	53.2	19.3	0	0	0	0	0	0	0	0	0	0	0	12.12	20.64	6.51
0	24.5	0	0	0	0	0	0	49.7	25.9	0	0	0	0	0	0	0	0	0	0	0	7.22	23.77	11.03
0	25	0	0	0	0	0	0	70	5	0	0	0	0	0	0	0	0	0	0	0	27.66	5.24	1.32
0	25	0	0	0	0	0	0	65	10	0	0	0	0	0	0	0	0	0	0	0	21.85	11.14	2.44
0	25	0	0	0	0	0	0	60	15	0	0	0	0	0									

0	24.81	0	0	0	0	0	0	75.19	0	0	0	0	0	0	0	0	0	0	0	0	33	0	0
0	28.57	0	0	0	0	0	0	71.43	0	0	0	0	0	0	0	0	0	0	0	0	40	0	0
0	33.33	0	0	0	0	0	0	66.67	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0
0	37.50	0	0	0	0	0	0	62.50	0	0	0	0	0	0	0	0	0	0	0	0	44	0	0
0	41.18	0	0	0	0	0	0	58.82	0	0	0	0	0	0	0	0	0	0	0	0	45	0	0
0	45.05	0	0	0	0	0	0	54.95	0	0	0	0	0	0	0	0	0	0	0	0	40	0	0
0	54.95	0	0	0	0	0	0	45.05	0	0	0	0	0	0	0	0	0	0	0	0	30	0	0
0	58.33	0	0	0	0	0	0	41.67	0	0	0	0	0	0	0	0	0	0	0	0	26	0	0
0	61.54	0	0	0	0	0	0	38.46	0	0	0	0	0	0	0	0	0	0	0	0	23	0	0
0	64.91	0	0	0	0	0	0	35.09	0	0	0	0	0	0	0	0	0	0	0	0	17	0	0
0	10	0	0	0	0	0	90	0	0	0	0	0	0	0	0	89	11	0	0	0	0	0	0
0	18	0	0	0	0	0	82	0	0	0	0	0	0	0	0	78	22	0	0	0	0	0	0
0	32	0	0	0	0	0	68	0	0	0	0	0	0	0	0	52	48	0	0	0	0	0	0
0	37	0	0	0	0	0	63	0	0	0	0	0	0	0	0	40	60	0	0	0	0	0	0
0	40	0	0	0	0	0	60	0	0	0	0	0	0	0	0	34	66	0	0	0	0	0	0
0	50	0	0	0	0	0	50	0	0	0	0	0	0	0	0	0	99	1	0	0	0	0	0
0	51	0	0	0	0	0	49	0	0	0	0	0	0	0	0	0	98	2	0	0	0	0	0
0	15	0	0	0	0	0	85	0	0	0	0	0	0	0	0	90	10	0	0	0	0	0	0
0	35	0	0	0	0	0	65	0	0	0	0	0	0	0	0	51	49	0	0	0	0	0	0
0	55	0	0	0	0	0	45	0	0	0	0	0	0	0	0	0	77	23	0	0	0	0	0
0	25	0	0	0	0	75	0	0	0	0	0	38	53	9	0	0	0	0	0	0	0	0	0
0	28.6	0	0	0	0	71.4	0	0	0	0	0	31	59	10	0	0	0	0	0	0	0	0	0
0	33.3	0	0	0	0	66.7	0	0	0	0	0	22	63	15	0	0	0	0	0	0	0	0	0
0	36.4	0	0	0	0	63.6	0	0	0	0	0	17	62	21	0	0	0	0	0	0	0	0	0
0	40	0	0	0	0	60	0	0	0	0	0	15	57	26	2	0	0	0	0	0	0	0	0
0	0	0	0	0	43.6	0	56.4	0	0	0	0	0	0	0	0	19.1	80.9	0	0	0	0	0	0
0	0	0	0	0	44.7	0	55.3	0	0	0	0	0	0	0	0	16.1	83.9	0	0	0	0	0	0
0	0	0	0	0	48.6	0	51.4	0	0	0	0	0	0	0	0	7.9	90.8	1.3	0	0	0	0	0
0	0	0	0	0	50.2	0	49.8	0	0	0	0	0	0	0	0	3.6	90.2	6.2	0	0	0	0	0
0	0	0	0	0	53.5	0	46.5	0	0	0	0	0	0	0	0	0	82.1	17.9	0	0	0	0	0
0	0	0	0	0	58.9	0	41.1	0	0	0	0	0	0	0	0	0	56.1	43.9	0	0	0	0	0
0	0	0	0	0	48.8	0	51.2	0	0	0	0	0	0	0	0	0	100	0	0	0	0	0	0

0	0	0	0	0	53.4	0	46.6	0	0	0	0	0	0	0	0	0	0	81	19	0	0	0	0
0	0	0	0	0	55.2	0	44.8	0	0	0	0	0	0	0	0	0	0	66	34	0	0	0	0
0	0	0	0	0	58.9	0	41.1	0	0	0	0	0	0	0	0	0	0	49	48	3	0	0	0
0	0	0	0	0	60.3	0	39.7	0	0	0	0	0	0	0	0	0	0	31	64	5	0	0	0
0	0	0	0	0	62.2	0	37.8	0	0	0	0	0	0	0	0	0	0	21	72	7	0	0	0
0	0	0	0	0	64	0	36	0	0	0	0	0	0	0	0	0	0	15	76	9	0	0	0
0	0	0	0	0	50	50	0	0	0	0	0	0	33	33	23	11	0	0	0	0	0	0	0
0	0	0	0	0	52	48	0	0	0	0	0	0	26	34	26	14	0	0	0	0	0	0	0
0	0	0	0	0	54	46	0	0	0	0	0	0	21	34	27	18	0	0	0	0	0	0	0
0	0	0	0	0	56	44	0	0	0	0	0	0	17	32	30	21	0	0	0	0	0	0	0
0	0	0	0	0	58	42	0	0	0	0	0	0	12	28	33	27	0	0	0	0	0	0	0
0	0	0	0	0	60	40	0	0	0	0	0	0	9	23	35	33	0	0	0	0	0	0	0
0	0	0	0	0	62	38	0	0	0	0	0	0	6	16	34	44	0	0	0	0	0	0	0
25.7	0	0	0	0	0	0	0	69.3	5	0	0	0	0	0	0	0	0	0	0	0	29.78	6.37	0.40
25.2	0	0	0	0	0	0	0	59.5	15.3	0	0	0	0	0	0	0	0	0	0	0	14.71	19.32	1.70
25.5	0	0	0	0	0	0	0	54.1	20.4	0	0	0	0	0	0	0	0	0	0	0	5.87	26.21	2.59
25.5	0	0	0	0	0	0	0	50.1	24.4	0	0	0	0	0	0	0	0	0	0	0	3.49	30.17	3.29
25	0	0	0	0	0	0	0	44.8	30.2	0	0	0	0	0	0	0	0	0	0	0	0.90	35.15	5.78
20.43	0	0	0	0	0	0	0	74.18	5.38	0	0	0	0	0	0	0	0	0	0	0	22.56	6.62	0.14
20.15	0	0	0	0	0	0	0	69.37	10.48	0	0	0	0	0	0	0	0	0	0	0	16.07	12.49	0.63
20	0	0	0	0	0	0	0	64.66	15.34	0	0	0	0	0	0	0	0	0	0	0	10.99	17.28	1.90
19.63	0	0	0	0	0	0	0	59.69	20.68	0	0	0	0	0	0	0	0	0	0	0	7.43	20.92	4.81
19.76	0	0	0	0	0	0	0	54.55	25.69	0	0	0	0	0	0	0	0	0	0	0	5.44	23.53	8.48
15.01	0	0	0	0	0	0	0	64.52	20.47	0	0	0	0	0	0	0	0	0	0	0	7.14	13.61	10.48
25.36	0	0	0	0	0	0	0	54.04	20.6	0	0	0	0	0	0	0	0	0	0	0	9.48	26.63	0.97
30.11	0	0	0	0	0	0	0	49.7	20.19	0	0	0	0	0	0	0	0	0	0	0	13.80	28.31	0.58
34.95	0	0	0	0	0	0	0	44.82	20.23	0	0	0	0	0	0	0	0	0	0	0	15.71	30.54	0.56
39.68	0	0	0	0	0	0	0	39.89	20.43	0	0	0	0	0	0	0	0	0	0	0	12.30	33.23	0.64
44.91	0	0	0	0	0	0	0	34.71	20.38	0	0	0	0	0	0	0	0	0	0	0	7.75	36.33	0.67
30	0	0	0	0	0	0	0	40	30	0	0	0	0	0	0	0	0	0	0	0	1.60	41.76	1.10
40	0	0	0	0	0	0	0	30	30	0	0	0	0	0	0	0	0	0	0	0	0.90	49.45	0.60
40	0	0	0	0	0	0	0	40	20	0	0	0	0	0	0	0	0	0	0	0	9.83	32.34	0.14

20	0	0	0	0	0	0	0	50	30	0	0	0	0	0	0	0	0	0	0	0	2.30	27.73	9.71
35	0	0	0	0	0	0	0	55	10	0	0	0	0	0	0	0	0	0	0	0	23.3	14.9	0.5
30	0	0	0	0	0	0	0	65	5	0	0	0	0	0	0	0	0	0	0	0	28.67	6.89	0.30
9.94	0	0	0	0	0	0	0	90.06	0	0	0	0	0	0	0	0	0	0	0	0	11.71	0	0
15.33	0	0	0	0	0	0	0	84.67	0	0	0	0	0	0	0	0	0	0	0	0	15.8	0	0
19.22	0	0	0	0	0	0	0	80.78	0	0	0	0	0	0	0	0	0	0	0	0	21.92	0	0
22.41	0	0	0	0	0	0	0	77.59	0	0	0	0	0	0	0	0	0	0	0	0	27.03	0	0
27.52	0	0	0	0	0	0	0	72.48	0	0	0	0	0	0	0	0	0	0	0	0	33.44	0	0
29.7	0	0	0	0	0	0	0	70.3	0	0	0	0	0	0	0	0	0	0	0	0	37.33	0	0
31.52	0	0	0	0	0	0	0	68.48	0	0	0	0	0	0	0	0	0	0	0	0	41.38	0	0
34.04	0	0	0	0	0	0	0	65.96	0	0	0	0	0	0	0	0	0	0	0	0	42.37	0	0
37.61	0	0	0	0	0	0	0	62.39	0	0	0	0	0	0	0	0	0	0	0	0	44.25	0	0
67	0	0	0	0	0	0	0	33	0	0	0	0	0	0	0	0	0	0	0	0	13	0	0
28.3	0	0	0	32.9	0	0	35.7	0	0	0	0	0	0	0	0	0	0	30	70	0	0	0	0
28.8	0	0	0	29.8	0	0	39.1	0	0	0	0	0	0	0	0	0	0	36	64	0	0	0	0
27	0	0	0	29.6	0	0	39.8	0	0	0	0	0	0	0	0	0	0	48	52	0	0	0	0
28.4	0	0	0	30.5	0	0	40	0	0	0	0	0	0	0	0	0	0	67	33	0	0	0	0
24.36	0	0	0	26.93	0	46.14	2.57	0	0	0	0	1.52	22.56	47.17	18.37	0.36	0	0	3.47	6.56	0	0	0
24.42	0	0	0	26.93	0	43.22	5.43	0	0	0	0	3.52	27.25	37.96	10.79	0.40	0	0	7.71	12.37	0	0	0
24.36	0	0	0	27.17	0	36.3	12.17	0	0	0	0.36	6.52	32.86	19.34	0.78	0.00	0	1.24	22.92	15.98	0	0	0
24.3	0	0	0	26.9	0	46.2	2.6	0	0	0	0	0.00	10.97	48.99	29.93	0.00	0	0	2.70	7.42	0	0	0
24.39	0	0	0	26.83	0	46.34	2.44	0	0	0	0	0.00	16.29	60.62	13.57	0.00	0	0	0.57	8.95	0	0	0
24.39	0	0	0	26.83	0	43.90	4.88	0	0	0	0	0.00	9.00	72.82	0.00	0.00	0	0.55	1.27	16.36	0	0	0
24.39	0	0	0	26.83	0	42.44	6.34	0	0	0	0	0.00	25.41	40.81	10.78	0.00	0	0	4.60	18.41	0	0	0
21.96	0	0	0	21.40	0	55.60	1.05	0	0	0	0	3.86	46.26	44.33	1.93	0.00	0	0	0.33	3.30	0	0	0
21.07	0	0	0	21.93	0	54.84	2.16	0	0	0	0	0.93	50.99	38.94	1.85	0.00	0	0	0.80	6.49	0	0	0
21.54	0	0	0	20.30	0	55.17	2.99	0	0	0	0	9.02	40.60	38.80	1.80	0.00	0	0	1.56	8.21	0	0	0
20.60	0	0	0	22.10	0	53.06	4.24	0	0	0	0	5.17	59.48	18.97	2.59	0.00	0	0	2.34	11.45	0	0	0
30.30	0	0	0	23.08	0	45.77	0.85	0	0	0	0	0.00	10.60	72.31	8.68	4.82	0	0	0.11	3.48	0	0	0
25.17	0	0	0	26.19	0	46.66	1.97	0	0	0	0	0.92	14.75	71.00	5.53	0.00	0	0	0.31	7.48	0	0	0
25.22	0	0	0	25.55	0	46.08	3.15	0	0	0	0	0.88	23.76	57.19	6.16	0.00	0	0	0.60	11.41	0	0	0
23.52	0	0	0	26.03	0	45.10	5.35	0	0	0	0	2.42	41.22	33.95	3.23	0.00	0	0	1.53	17.64	0	0	0

24.41	0	0	0	24.74	0	44.37	6.48	0	0	0	0	1.55	52.63	21.67	1.55	0.00	0	0	1.13	21.47	0	0	0
36.85	0	0	0	22.31	0	39.94	0.90	0	0	0	0	0.00	0.96	47.85	44.98	1.91	0	0	0.82	3.48	0	0	0
32.08	0	0	0	22.68	0	43.09	2.15	0	0	0	0	0.00	1.82	52.74	33.65	2.73	0	0	1.18	7.89	0	0	0
33.17	0	0	0	23.02	0	40.74	3.07	0	0	0	0	0.00	6.95	48.67	29.55	1.74	0	0	0.78	12.30	0	0	0
32.47	0	0	0	22.01	0	41.29	4.24	0	0	0	0	0.00	9.13	49.78	24.06	0.00	0	0	1.19	15.84	0	0	0
24.30	0	0	0	26.90	0	46.20	2.60	0	0	0	0	0.00	29.93	48.99	10.97	0.00	0	0	2.70	7.42	0	0	0
24.37	0	0	0	26.92	0	46.14	2.57	0	0	0	0	1.80	21.59	47.68	17.99	0.90	0	0.20	3.31	6.52	0	0	0
19.40	0	0	0	21.47	0	56.50	2.63	0	0	0	0	11.89	48.49	28.36	2.74	0.00	0	0.60	5.02	2.90	0	0	0
14.47	0	0	0	15.98	0	66.91	2.63	0	0	0	0.93	29.67	53.77	8.34	0.00	0.00	0	2.55	4.08	0.66	0	0	0
22.90	0	0	0	25.50	0	48.60	3.00	0	0	0	0	0.00	18.69	64.44	5.87	0.00	0	0	0.45	10.54	0	0	0
20.72	0	0	0	31.53	0	41.24	6.51	0	0	0	0	0.00	21.74	50.02	4.26	0.00	0	0	1.08	22.91	0	0	0
18.1	0	0	0	25	0	55.9	1	0	0	0	0	1.54	49.43	43.93	1.64	0.00	0	0	0.35	3.11	0	0	0
19.1	0	0	0	25.8	0	52.7	2.4	0	0	0	0	1.83	51.60	37.12	1.10	0.00	0	0	0.87	7.48	0	0	0
19.3	0	0	0	25.4	0	50.9	4.4	0	0	0	0	1.71	50.99	31.72	0.85	0.00	0	0	1.02	13.72	0	0	0
20.1	0	0	0	27.4	0	46	6.5	0	0	0	0	1.25	42.96	32.98	0.78	0.00	0	0	2.16	19.87	0	0	0
19.4	0	0	0	21.4	0	56	3.2	0	0	0	0	6.73	60.76	21.72	0.54	0.00	0	0	1.66	8.59	0	0	0
15.1	0	0	0	20.6	0	62.3	2	0	0	0	0	9.49	74.33	10.15	0.00	0.00	0	0	1.24	4.80	0	0	0
16.1	0	0	0	22.6	0	58.3	3	0	0	0	0	6.98	70.63	13.06	0.00	0.00	0	0	1.74	7.60	0	0	0
16.2	0	0	0	22.6	0	57.2	4	0	0	0	0	7.98	69.39	10.35	0.00	0.00	0	0	2.39	9.88	0	0	0
17.2	0	0	0	24.4	0	52.4	6	0	0	0	0	8.22	63.30	9.85	0.00	0.00	0	0	3.34	15.30	0	0	0
42.8	0	0	0	0	0	0	57.2	0	0	0	0	0	0	0	0	0	20	80	0	0	0	0	0
43.8	0	0	0	0	0	0	56.2	0	0	0	0	0	0	0	0	0	18	82	0	0	0	0	0
45.3	0	0	0	0	0	0	54.7	0	0	0	0	0	0	0	0	0	13	87	0	0	0	0	0
47.2	0	0	0	0	0	0	52.8	0	0	0	0	0	0	0	0	0	7	93	0	0	0	0	0
51.1	0	0	0	0	0	0	48.9	0	0	0	0	0	0	0	0	0	0	99	1	0	0	0	0
54.1	0	0	0	0	0	0	45.9	0	0	0	0	0	0	0	0	0	0	78	22	0	0	0	0
57	0	0	0	0	0	0	43	0	0	0	0	0	0	0	0	0	0	78	22	0	0	0	0
5	0	0	0	0	0	0	95	0	0	0	0	0	0	0	0	0	96	4	0	0	0	0	0
7.5	0	0	0	0	0	0	92.5	0	0	0	0	0	0	0	0	0	94	6	0	0	0	0	0
10	0	0	0	0	0	0	90	0	0	0	0	0	0	0	0	0	89	11	0	0	0	0	0
15	0	0	0	0	0	0	85	0	0	0	0	0	0	0	0	0	81	19	0	0	0	0	0
20	0	0	0	0	0	0	80	0	0	0	0	0	0	0	0	0	77	23	0	0	0	0	0

25	0	0	0	0	0	0	75	0	0	0	0	0	0	0	0	68	32	0	0	0	0	0
30	0	0	0	0	0	0	70	0	0	0	0	0	0	0	0	58	42	0	0	0	0	0
35	0	0	0	0	0	0	65	0	0	0	0	0	0	0	0	43	57	0	0	0	0	0
40	0	0	0	0	0	0	60	0	0	0	0	0	0	0	0	38	62	0	0	0	0	0
50	0	0	0	0	0	0	50	0	0	0	0	0	0	0	0	0	100	0	0	0	0	0
23.8	0	0	0	4.8	0	71.4	0	0	0	0	27	73	0	0	0	0	0	0	0	0	0	0
22.7	0	0	0	9.1	0	68.2	0	0	0	0	12	86	2	0	0	0	0	0	0	0	0	0
21.7	0	0	0	13	0	65.2	0	0	0	0	6	89	5	0	0	0	0	0	0	0	0	0
20	0	0	0	20	0	60	0	0	0	0	0	74	26	0	0	0	0	0	0	0	0	0
8.21	0	0	0	0	0	18	72	0	0	11.11	0	0	0	0	0	78.96	9.93	0	0	0	0	0
13.78	0	0	0	0	0	17	68	0	0	11.11	0	0	0	0	0	71.14	17.75	0	0	0	0	0
19.74	0	0	0	0	0	16	64	0	0	11.11	0	0	0	0	0	61.55	27.34	0	0	0	0	0
27.79	0	0	0	0	0	14.4	57.6	0	0	10.57	0.54	0	0	0	0	46.14	42.75	0	0	0	0	0
34.28	0	0	0	0	0	13	52	0	0	6.54	4.57	0	0	0	0	30.94	57.95	0	0	0	0	0
39.36	0	0	0	0	0	12	48	0	0	1.40	9.71	0	0	0	0	16.77	72.12	0	0	0	0	0
20.58	0	0	0	0	0	9.8	60.2	0	0	7.53	0	0	0	0	0	64.60	27.87	0	0	0	0	0
18.97	0	0	0	0	0	20.3	49.7	0	0	8.53	0	8.43	0	0	0	55.66	27.38	0	0	0	0	0
24.68	0	0	0	0	0	30.1	39.9	0	0	5.33	0	22.06	0	0	0	30.87	41.75	0	0	0	0	0
30.58	0	0	0	0	0	37.8	32.2	0	0	0.00	0	36.99	0	0	0	2.66	60.35	0	0	0	0	0
36.68	0	0	0	0	0	9.8	50.2	0	0	4.59	0	4.30	0	0	0	28.03	63.07	0	0	0	0	0
33.35	0	0	0	0	0	17.8	45.7	0	0	2.89	0	13.42	0	0	0	25.50	58.20	0	0	0	0	0
5.08	0	0	0	0	0	21.3	58.3	0	0	12.76	0.46	2.22	0	0	0	78.38	6.17	0	0	0	0	0
19.26	0	0	0	0	0	10.4	69.6	0	0	6.95	0	0.00	0	0	0	67.53	25.52	0	0	0	0	0
19.54	0	0	0	0	0	17.1	62.9	0	0	11.26	0	0.71	0	0	0	60.85	27.19	0	0	0	0	0
19.56	0	0	0	0	0	21.3	58.7	0	0	11.11	0	4.24	0	0	0	56.60	28.04	0	0	0	0	0
19.63	0	0	0	0	0	30.4	49.6	0	0	9.23	0	14.23	0	0	0	46.39	30.15	0	0	0	0	0
19.99	0	0	0	0	0	39.4	40.6	0	0	6.41	0	26.26	0	0	0	34.18	33.15	0	0	0	0	0
20	0	0	0	0	0	80	0	0	0	0	50	48	2	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	75	0	0	0	0	38	61	1	0	0	0	0	0	0	0	0	0
28.6	0	0	0	0	0	71.4	0	0	0	0	27	68	5	0	0	0	0	0	0	0	0	0
33.3	0	0	0	0	0	66.7	0	0	0	0	11	79	10	0	0	0	0	0	0	0	0	0
36.4	0	0	0	0	0	63.6	0	0	0	0	7	76	17	0	0	0	0	0	0	0	0	0

40	0	0	0	0	0	60	0	0	0	0	0	2	67	29	2	0	0	0	0	0	0	0	0
42.9	0	0	0	0	0	57.1	0	0	0	0	0	2	54	41	3	0	0	0	0	0	0	0	0
44.4	0	0	0	0	0	55.6	0	0	0	0	0	0	47	50	3	0	0	0	0	0	0	0	0
50	0	0	0	0	0	50	0	0	0	0	0	0	18	66	15	1	0	0	0	0	0	0	0
55.6	0	0	0	0	0	44.4	0	0	0	0	0	0	3	54	39	4	0	0	0	0	0	0	0
33.16	0	0	0	0	0	66.84	0	0	0	0	0	9.54	80.98	9.48	0	0	0	0	0	0	0	0	0
40.30	0	0	0	0	0	59.70	0	0	0	0	0	0	60.41	39.59	6.73	0	0	0	0	0	0	0	0
48.71	0	0	0	0	0	51.29	0	0	0	0	0	0	22.13	66.79	11.07	0	0	0	0	0	0	0	0
0	0	0	0	0	0	100	0	0	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0	0	100	0	0	0	0	0	0
66.67	0	0	0	0	0	33.33	0	0	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0
75	0	0	0	0	0	0	25	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0

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