Supplementary database – Unconfined compressive strength of bio-cemented sand

No.	References	d_{50} (mm)	C_u	e_0	OD_{600}	M_u (mol/L)	M_{Ca} (mol/L)	F_{Ca} (%)	UCS (MPa)
1	Al Qabany and Soga (2013)	0.165	1.44	0.77	1	0.5	0.5	9.63	0.83
2	Al Qabany and Soga (2013)	0.165	1.44	0.77	1	0.5	0.5	9.62	0.88
3	Al Qabany and Soga (2013)	0.165	1.44	0.77	1	0.5	0.5	12.68	0.83
4	Al Qabany and Soga (2013)	0.165	1.44	0.73	1	0.5	0.5	8.54	0.49
5	Al Qabany and Soga (2013)	0.165	1.44	0.73	1	0.5	0.5	6.71	0.97
6	Al Qabany and Soga (2013)	0.165	1.44	0.69	1	0.5	0.5	3.24	0.11
7	Al Qabany and Soga (2013)	0.165	1.44	0.69	1	0.5	0.5	3.61	0.12
8	Al Qabany and Soga (2013)	0.165	1.44	0.69	1	0.5	0.5	3.71	0.17
9	Al Qabany and Soga (2013)	0.165	1.44	0.69	1	0.5	0.5	3.19	0.22
10	Al Qabany and Soga (2013)	0.165	1.44	0.69	1	0.5	0.5	6.77	0.54
11	Al Qabany and Soga (2013)	0.165	1.44	0.69	1	0.5	0.5	8.53	0.67
12	Al Qabany and Soga (2013)	0.165	1.44	0.69	1	0.5	0.5	9.81	0.39
13	Al Qabany and Soga (2013)	0.165	1.44	0.69	1	0.5	0.5	9.13	1.27
14	Al Qabany and Soga (2013)	0.165	1.44	0.65	1	0.5	0.5	5.57	0.93
15	Al Qabany and Soga (2013)	0.165	1.44	0.65	1	0.5	0.5	6.93	0.49
16	Al Qabany and Soga (2013)	0.165	1.44	0.65	1	0.5	0.5	7.59	1.27
17	Al Qabany and Soga (2013)	0.165	1.44	0.65	1	0.5	0.5	9.01	1.66
18	Al Qabany and Soga (2013)	0.165	1.44	0.73	1	0.1	0.1	6.53	0.36
19	Al Qabany and Soga (2013)	0.165	1.44	0.69	1	0.1	0.1	2.89	0.14
20	Al Qabany and Soga (2013)	0.165	1.44	0.69	1	0.1	0.1	5.19	0.73
21	Al Qabany and Soga (2013)	0.165	1.44	0.69	1	0.1	0.1	6.75	0.83
22	Al Qabany and Soga (2013)	0.165	1.44	0.65	1	0.1	0.1	3.44	0.18
23	Al Qabany and Soga (2013)	0.165	1.44	0.65	1	0.1	0.1	5.08	0.45
24	Al Qabany and Soga (2013)	0.165	1.44	0.65	1	0.1	0.1	4.76	0.59
25	Al Qabany and Soga (2013)	0.165	1.44	0.65	1	0.1	0.1	5.06	0.86
26	Al Qabany and Soga (2013)	0.165	1.44	0.65	1	0.1	0.1	7.1	0.5
27	Al Qabany and Soga (2013)	0.165	1.44	0.65	1	0.1	0.1	8.34	1.81
28	Al Qabany and Soga (2013)	0.165	1.44	0.65	1	0.1	0.1	10.37	2.96
29	Al Qabany and Soga (2013)	0.165	1.44	0.61	1	0.1	0.1	6.14	1.65
30	Al Qabany and Soga (2013)	0.165	1.44	0.61	1	0.1	0.1	7.67	1.92
31	Cheng et al. (2013)	0.687	1.35	0.64	1.75	1	1	4.01	0.17
32	Cheng et al. (2013)	0.687	1.35	0.64	1.75	1	1	4.68	0.21
33	Cheng et al. (2013)	0.687	1.35	0.64	1.75	1	1	6.79	0.45
34	Cheng et al. (2013)	0.687	1.35	0.64	1.75	1	1	8.67	0.79
35	Cheng et al. (2013)	0.687	1.35	0.64	1.75	1	1	9.35	1.2
36	Cheng et al. (2013)	0.687	1.35	0.64	1.75	1	1	11.99	1.59
37	Cheng et al. (2013)	0.687	1.35	0.64	1.75	1	1	13.93	1.98
38	Cheng et al. (2014a)	0.352	1.9	0.65	1.75	1	1	1.76	0.09
39	Cheng et al. (2014a)	0.352	1.9	0.65	1.75	1	1	2.12	0.09
40	Cheng et al. (2014a)	0.352	1.9	0.65	1.75	1	1	2.21	0.1
41	Cheng et al. (2014a)	0.352	1.9	0.65	1.75	1	1	2.36	0.05
42	Cheng et al. (2014a)	0.352	1.9	0.65	1.75	1	1	2.77	0.1
43	Cheng et al. (2014a)	0.352	1.9	0.65	1.75	1	1	3.23	0.1

44	Cheng et al. (2014a)	0.352	1.9	0.65	1.75	1	1	2.98	0.16
45	Cheng et al. (2014a)	0.352	1.9	0.65	1.75	1	1	3.63	0.15
46	Cheng et al. (2014a)	0.352	1.9	0.65	1.75	1	1	3.78	0.18
47	Cheng et al. (2014a)	0.352	1.9	0.65	1.75	1	1	3.79	0.2
48	Cheng et al. (2014a)	0.352	1.9	0.65	1.75	1	1	3.71	0.2
49	Cheng et al. (2014a)	0.352	1.9	0.65	1.75	1	1	3.29	0.21
50	Cheng et al. (2014a)	0.352	1.9	0.65	1.75	1	1	3.59	0.24
51	Cheng et al. (2014a)	0.352	1.9	0.65	1.75	1	1	3.41	0.25
52	Cheng et al. (2014a)	0.352	1.9	0.65	1.75	1	1	3.66	0.3
53	Cheng et al. (2014a)	0.352	1.9	0.65	1.75	1	1	4.01	0.29
54	Cheng et al. (2017)	0.14	1.25	0.56	2.25	1	1	1.91	0.08
55	Cheng et al. (2017)	0.14	1.25	0.56	2.25	1	1	3.14	0.29
56	Cheng et al. (2017)	0.14	1.25	0.56	2.25	1	1	3.37	0.45
57	Cheng et al. (2017)	0.14	1.25	0.56	2.25	1	1	3.8	0.35
58	Cheng et al. (2017)	0.14	1.25	0.56	2.25	1	1	4.02	0.45
59	Cheng et al. (2017)	0.14	1.25	0.56	2.25	1	1	4.09	0.52
60	Cheng et al. (2017)	0.14	1.25	0.56	2.25	1	1	3.91	0.55
61	Cheng et al. (2017)	0.14	1.25	0.56	2.25	1	1	4.31	0.61
62	Cheng et al. (2017)	0.14	1.25	0.56	2.25	1	1	4.72	0.67
63	Cheng et al. (2017)	0.14	1.25	0.56	2.25	1	1	4.78	0.63
64	Cheng et al. (2017)	0.14	1.25	0.56	2.25	1	1	4.66	0.74
65	Cheng et al. (2017)	0.14	1.25	0.56	2.25	1	1	5.24	0.85
66	Cheng et al. (2017)	0.14	1.25	0.56	2.25	1	1	5.13	0.87
67	Cheng et al. (2017)	0.14	1.25	0.56	2.25	1	1	5.36	1.19
68	Cheng et al. (2017)	0.14	1.25	0.56	2.25	1	1	5.52	1.51
69	Cheng et al. (2017)	0.14	1.25	0.56	2.25	1	1	5.69	1.6
70	Cheng et al. (2017)	0.14	1.25	0.56	2.25	1	1	5.5	1.79
71	Cheng et al. (2017)	0.14	1.25	0.56	2.25	1	1	5.91	1.81
72	Cheng et al. (2017)	0.14	1.25	0.56	2.25	1	1	5.95	2.12
73	Cheng et al. (2017)	0.68	1.29	0.67	2.25	1	1	2.24	0.07
74	Cheng et al. (2017)	0.68	1.29	0.67	2.25	1	1	2.57	0.08
75	Cheng et al. (2017)	0.68	1.29	0.67	2.25	1	1	3.15	0.14
76	Cheng et al. (2017)	0.68	1.29	0.67	2.25	1	1	3.37	0.25
77	Cheng et al. (2017)	0.68	1.29	0.67	2.25	1	1	3.74	0.17
78	Cheng et al. (2017)	0.68	1.29	0.67	2.25	1	1	4.06	0.34
79	Cheng et al. (2017)	0.68	1.29	0.67	2.25	1	1	4.28	0.41
80	Cheng et al. (2017)	0.68	1.29	0.67	2.25	1	1	4.58	0.31
81	Cheng et al. (2017)	0.68	1.29	0.67	2.25	1	1	5.71	0.56
82	Cheng et al. (2017)	0.68	1.29	0.67	2.25	1	1	5.79	0.59
83	Cheng et al. (2017)	0.68	1.29	0.67	2.25	1	1	6.68	0.79
84	Cheng et al. (2017)	0.68	1.29	0.67	2.25	1	1	6.43	0.82
85	Cheng et al. (2017)	0.68	1.29	0.67	2.25	1	1	7.59	1.18
86	Cheng et al. (2017)	0.68	1.29	0.67	2.25	1	1	7.24	1.26
87	Cheng et al. (2017)	0.68	1.29	0.67	2.25	1	1	7.68	1.31
88	Cheng et al. (2017)	0.68	1.29	0.67	2.25	1	1	8.09	1.58
89	Cheng et al. (2017)	0.68	1.29	0.67	2.25	1	1	9.36	1.89
90	Cheng et al. (2017)	0.52	6.23	0.43	2.25	1	1	1.49	0.14

91	Cheng et al. (2017)	0.52	6.23	0.43	2.25	1	1	2.35	0.22
92	Cheng et al. (2017)	0.52	6.23	0.43	2.25	1	1	2.65	0.2
93	Cheng et al. (2017)	0.52	6.23	0.43	2.25	1	1	3.15	0.2
94	Cheng et al. (2017)	0.52	6.23	0.43	2.25	1	1	3.75	0.25
95	Cheng et al. (2017)	0.52	6.23	0.43	2.25	1	1	3.75	0.28
96	Cheng et al. (2017)	0.52	6.23	0.43	2.25	1	1	3.64	0.44
97	Cheng et al. (2017)	0.52	6.23	0.43	2.25	1	1	3.91	0.4
98	Cheng et al. (2017)	0.52	6.23	0.43	2.25	1	1	4.14	0.42
99	Cheng et al. (2017)	0.52	6.23	0.43	2.25	1	1	3.98	0.55
100	Cheng et al. (2017)	0.52	6.23	0.43	2.25	1	1	4.22	0.55
101	Cheng et al. (2017)	0.52	6.23	0.43	2.25	1	1	4.55	0.5
102	Cheng et al. (2017)	0.52	6.23	0.43	2.25	1	1	4.52	0.55
103	Cheng et al. (2017)	0.52	6.23	0.43	2.25	1	1	4.27	0.58
104	Cheng et al. (2017)	0.52	6.23	0.43	2.25	1	1	5.13	0.72
105	Cheng et al. (2017)	0.52	6.23	0.43	2.25	1	1	5.32	0.97
106	Cheng et al. (2017)	0.52	6.23	0.43	2.25	1	1	5.88	1.13
107	Cheng et al. (2017)	0.52	6.23	0.43	2.25	1	1	5.85	1.46
108	Cheng et al. (2017)	0.52	6.23	0.43	2.25	1	1	6.32	1.56
109	Cheng et al. (2017)	0.52	6.23	0.43	2.25	1	1	6.44	1.79
110	Cheng et al. (2017)	0.52	6.23	0.43	2.25	1	1	6.77	1.98
111	Mahawish et al. (2018)	0.37	2.21	0.622	3.25	1	1	6.52	0.52
112	Mahawish et al. (2018)	0.44	2.75	0.454	3.25	1	1	6.02	0.57
113	Mahawish et al. (2019)	1.6	1.35	0.66	3.25	1	1	2.32	1.2
114	Mahawish et al. (2019)	1.6	1.35	0.66	3.25	1	1	3.03	1.62
115	Mahawish et al. (2019)	1.6	1.35	0.66	3.25	1	1	2.61	1.39
116	Mahawish et al. (2019)	1.6	1.35	0.66	3.25	1	1	2.61	1.39
117	Mahawish et al. (2019)	1.6	1.35	0.66	3.25	1	1	5.07	2.67
118	Mahawish et al. (2019)	1.6	1.35	0.66	3.25	1	1	8.38	4.47
119	Mahawish et al. (2019)	1.6	1.35	0.66	3.25	1	1	6.97	3.72
120	Mahawish et al. (2019)	1.6	1.35	0.66	3.25	1	1	6.76	3.61
121	Mahawish et al. (2019)	1.6	1.35	0.66	3.25	1	1	11.83	6.27
122	Mahawish et al. (2019)	1.6	1.35	0.66	3.25	1	1	14.37	7.7
123	Mahawish et al. (2019)	1.6	1.35	0.66	3.25	1	1	13.59	7.25
124	Mahawish et al. (2019)	1.6	1.35	0.66	3.25	1	1	13.24	7.06
125	Mahawish et al. (2019)	1.6	1.35	0.66	3.25	1	1	21.83	11.64
126	Mahawish et al. (2019)	1.6	1.35	0.66	3.25	1	1	26.69	14.23
127	Mahawish et al. (2019)	1.6	1.35	0.66	3.25	1	1	19.86	10.59
128	Mahawish et al. (2019)	1.6	1.35	0.66	3.25	1	1	22.82	12.17
129	Mujah et al. (2019)	0.26	1.65	0.67	1.24	0.25	0.25	2.07	0.13
130	Mujah et al. (2019)	0.26	1.65	0.67	1.24	0.25	0.25	2.69	0.16
131	Mujah et al. (2019)	0.26	1.65	0.67	1.24	0.25	0.25	2.95	0.19
132	Mujah et al. (2019)	0.26	1.65	0.67	1.24	0.25	0.25	3.45	0.22
133	Mujah et al. (2019)	0.26	1.65	0.67	1.24	0.25	0.25	3.78	0.23
134	Mujah et al. (2019)	0.26	1.65	0.67	1.24	0.25	0.25	3.96	0.3
135	Mujah et al. (2019)	0.26	1.65	0.67	1.24	0.25	0.25	4.27	0.31
136	Mujah et al. (2019)	0.26	1.65	0.67	1.24	0.25	0.25	4.47	0.34
137	Mujah et al. (2019)	0.26	1.65	0.67	1.24	0.25	0.25	5.17	0.44

138	Mujah et al. (2019)	0.26	1.65	0.67	1.24	0.25	0.25	5.48	0.53
139	Mujah et al. (2019)	0.26	1.65	0.67	1.24	0.25	0.25	6.46	0.8
140	Mujah et al. (2019)	0.26	1.65	0.67	1.24	0.25	0.25	6.98	0.97
141	Mujah et al. (2019)	0.26	1.65	0.67	2.36	0.25	0.25	3.49	0.3
142	Mujah et al. (2019)	0.26	1.65	0.67	2.36	0.25	0.25	4	0.39
143	Mujah et al. (2019)	0.26	1.65	0.67	2.36	0.25	0.25	4.59	0.58
144	Mujah et al. (2019)	0.26	1.65	0.67	2.36	0.25	0.25	5.52	0.85
145	Mujah et al. (2019)	0.26	1.65	0.67	2.36	0.25	0.25	6.18	0.98
146	Mujah et al. (2019)	0.26	1.65	0.67	2.36	0.25	0.25	6.61	1.18
147	Mujah et al. (2019)	0.26	1.65	0.67	2.36	0.25	0.25	7	1.53
148	Mujah et al. (2019)	0.26	1.65	0.67	4.46	0.25	0.25	2.06	0.39
149	Mujah et al. (2019)	0.26	1.65	0.67	4.46	0.25	0.25	3.08	0.54
150	Mujah et al. (2019)	0.26	1.65	0.67	4.46	0.25	0.25	3.61	0.77
151	Mujah et al. (2019)	0.26	1.65	0.67	4.46	0.25	0.25	4.3	0.93
152	Mujah et al. (2019)	0.26	1.65	0.67	4.46	0.25	0.25	4.84	1.17
153	Mujah et al. (2019)	0.26	1.65	0.67	4.46	0.25	0.25	5.2	1.47
154	Mujah et al. (2019)	0.26	1.65	0.67	4.46	0.25	0.25	5.69	2.07
155	Mujah et al. (2019)	0.26	1.65	0.67	4.46	0.25	0.25	6.25	3
156	Mujah et al. (2019)	0.26	1.65	0.67	4.46	0.25	0.25	6.83	3.39
157	Mujah et al. (2019)	0.26	1.65	0.67	4.46	0.25	0.25	7.42	3.85
158	Mujah et al. (2019)	0.26	1.65	0.67	4.46	0.25	0.25	7.96	3.81
159	Mujah et al. (2019)	0.26	1.65	0.67	4.46	0.25	0.25	8.1	4.03
160	Mujah et al. (2019)	0.26	1.65	0.67	1.24	0.5	0.5	2.56	0.33
161	Mujah et al. (2019)	0.26	1.65	0.67	1.24	0.5	0.5	2.95	0.41
162	Mujah et al. (2019)	0.26	1.65	0.67	1.24	0.5	0.5	3.77	0.52
163	Mujah et al. (2019)	0.26	1.65	0.67	1.24	0.5	0.5	4.16	0.61
164	Mujah et al. (2019)	0.26	1.65	0.67	1.24	0.5	0.5	5.49	0.96
165	Mujah et al. (2019)	0.26	1.65	0.67	1.24	0.5	0.5	5.96	1.17
166	Mujah et al. (2019)	0.26	1.65	0.67	1.24	0.5	0.5	6.46	1.31
167	Mujah et al. (2019)	0.26	1.65	0.67	1.24	0.5	0.5	6.97	1.72
168	Mujah et al. (2019)	0.26	1.65	0.67	2.36	0.5	0.5	2.28	0.27
169	Mujah et al. (2019)	0.26	1.65	0.67	2.36	0.5	0.5	3.8	0.44
170	Mujah et al. (2019)	0.26	1.65	0.67	2.36	0.5	0.5	4.11	0.48
171	Mujah et al. (2019)	0.26	1.65	0.67	2.36	0.5	0.5	5.99	0.98
172	Mujah et al. (2019)	0.26	1.65	0.67	2.36	0.5	0.5	6.41	1.1
173	Mujah et al. (2019)	0.26	1.65	0.67	2.36	0.5	0.5	6.8	1.21
174	Mujah et al. (2019)	0.26	1.65	0.67	2.36	0.5	0.5	7	1.39
175	Mujah et al. (2019)	0.26	1.65	0.67	2.36	0.5	0.5	7.19	1.58
176	Mujah et al. (2019)	0.26	1.65	0.67	4.46	0.5	0.5	2.57	0.3
177	Mujah et al. (2019)	0.26	1.65	0.67	4.46	0.5	0.5	2.96	0.34
178	Mujah et al. (2019)	0.26	1.65	0.67	4.46	0.5	0.5	3.38	0.35
179	Mujah et al. (2019)	0.26	1.65	0.67	4.46	0.5	0.5	3.98	0.52
180	Mujah et al. (2019)	0.26	1.65	0.67	4.46	0.5	0.5	4.36	0.64
181	Mujah et al. (2019)	0.26	1.65	0.67	4.46	0.5	0.5	4.97	0.77
182	Mujah et al. (2019)	0.26	1.65	0.67	4.46	0.5	0.5	5.26	0.82
183	Mujah et al. (2019)	0.26	1.65	0.67	4.46	0.5	0.5	5.76	0.96
184	Mujah et al. (2019)	0.26	1.65	0.67	4.46	0.5	0.5	6.15	1.12

185	Mujah et al. (2019)	0.26	1.65	0.67	4.46	0.5	0.5	7.36	1.57
186	Mujah et al. (2019)	0.26	1.65	0.67	4.46	0.5	0.5	7.99	1.91
187	Mujah et al. (2019)	0.26	1.65	0.67	1.24	1	1	2.06	0.22
188	Mujah et al. (2019)	0.26	1.65	0.67	1.24	1	1	2.26	0.21
189	Mujah et al. (2019)	0.26	1.65	0.67	1.24	1	1	3.26	0.4
190	Mujah et al. (2019)	0.26	1.65	0.67	1.24	1	1	3.45	0.42
191	Mujah et al. (2019)	0.26	1.65	0.67	1.24	1	1	3.77	0.4
192	Mujah et al. (2019)	0.26	1.65	0.67	1.24	1	1	5.37	0.92
193	Mujah et al. (2019)	0.26	1.65	0.67	1.24	1	1	5.76	1.01
194	Mujah et al. (2019)	0.26	1.65	0.67	1.24	1	1	5.96	1.2
195	Mujah et al. (2019)	0.26	1.65	0.67	1.24	1	1	6.97	1.83
196	Mujah et al. (2019)	0.26	1.65	0.67	1.24	1	1	7.27	1.91
197	Mujah et al. (2019)	0.26	1.65	0.67	1.24	1	1	7.47	1.88
198	Mujah et al. (2019)	0.26	1.65	0.67	2.36	1	1	2	0.19
199	Mujah et al. (2019)	0.26	1.65	0.67	2.36	1	1	2.2	0.16
200	Mujah et al. (2019)	0.26	1.65	0.67	2.36	1	1	4.51	0.39
201	Mujah et al. (2019)	0.26	1.65	0.67	2.36	1	1	4.82	0.41
202	Mujah et al. (2019)	0.26	1.65	0.67	2.36	1	1	5	0.53
203	Mujah et al. (2019)	0.26	1.65	0.67	2.36	1	1	6.1	0.77
204	Mujah et al. (2019)	0.26	1.65	0.67	2.36	1	1	6.29	0.79
205	Mujah et al. (2019)	0.26	1.65	0.67	2.36	1	1	7.59	1.52
206	Mujah et al. (2019)	0.26	1.65	0.67	2.36	1	1	8.01	1.64
207	Mujah et al. (2019)	0.26	1.65	0.67	2.36	1	1	8.2	1.79
208	Mujah et al. (2019)	0.26	1.65	0.67	4.46	1	1	2.44	0.18
209	Mujah et al. (2019)	0.26	1.65	0.67	4.46	1	1	2.68	0.19
210	Mujah et al. (2019)	0.26	1.65	0.67	4.46	1	1	2.95	0.16
211	Mujah et al. (2019)	0.26	1.65	0.67	4.46	1	1	4.79	0.3
212	Mujah et al. (2019)	0.26	1.65	0.67	4.46	1	1	5.06	0.35
213	Mujah et al. (2019)	0.26	1.65	0.67	4.46	1	1	5.48	0.45
214	Mujah et al. (2019)	0.26	1.65	0.67	4.46	1	1	6.67	0.82
215	Mujah et al. (2019)	0.26	1.65	0.67	4.46	1	1	6.97	0.87
216	Mujah et al. (2019)	0.26	1.65	0.67	4.46	1	1	7.17	1
217	Mujah et al. (2019)	0.26	1.65	0.67	4.46	1	1	8.07	1.43
218	Mujah et al. (2019)	0.26	1.65	0.67	4.46	1	1	8.26	1.62
219	Mujah et al. (2019)	0.26	1.65	0.67	4.46	1	1	8.48	1.77
220	Nafisi et al. (2020)	0.72	1.17	0.64	1	0.67	0.1	6.5	2.5
221	Nafisi et al. (2020)	0.22	1.4	0.74	1	0.67	0.1	10.83	3.04
222	Nafisi et al. (2020)	0.12	1.7	0.74	1	0.67	0.1	13.9	2.6
223	van Paassen et al. (2010)	0.166	1.64	0.7	3	1	1	12.6	0.7
224	van Paassen et al. (2010)	0.166	1.64	0.7	3	1	1	13.2	0.9
225	van Paassen et al. (2010)	0.166	1.64	0.7	3	1	1	13.8	2.1
226	van Paassen et al. (2010)	0.166	1.64	0.7	3	1	1	14	1.2
227	van Paassen et al. (2010)	0.166	1.64	0.7	3	1	1	14.6	1.5
228	van Paassen et al. (2010)	0.166	1.64	0.7	3	1	1	14	1.7
229	van Paassen et al. (2010)	0.166	1.64	0.7	3	1	1	14.5	1
230	van Paassen et al. (2010)	0.166	1.64	0.7	3	1	1	14.5	1.3
231	van Paassen et al. (2010)	0.166	1.64	0.7	3	1	1	14.5	2.2

232	van Paassen et al. (2010)	0.166	1.64	0.7	3	1	1	14.8	2.3
233	van Paassen et al. (2010)	0.166	1.64	0.7	3	1	1	15.5	0.9
234	van Paassen et al. (2010)	0.166	1.64	0.7	3	1	1	15.8	1.3
235	van Paassen et al. (2010)	0.166	1.64	0.7	3	1	1	16.3	2.3
236	van Paassen et al. (2010)	0.166	1.64	0.7	3	1	1	16.8	1.6
237	van Paassen et al. (2010)	0.166	1.64	0.7	3	1	1	16.8	1.9
238	van Paassen et al. (2010)	0.166	1.64	0.7	3	1	1	17.5	1.7
239	van Paassen et al. (2010)	0.166	1.64	0.7	3	1	1	17.5	4.2
240	van Paassen et al. (2010)	0.166	1.64	0.7	3	1	1	18.6	1.7
241	van Paassen et al. (2010)	0.166	1.64	0.7	3	1	1	19.1	2.3
242	van Paassen et al. (2010)	0.166	1.64	0.7	3	1	1	20.3	2
243	van Paassen et al. (2010)	0.166	1.64	0.7	3	1	1	20.3	2.7
244	van Paassen et al. (2010)	0.166	1.64	0.7	3	1	1	20	3.8
245	van Paassen et al. (2010)	0.166	1.64	0.7	3	1	1	20.3	4
246	van Paassen et al. (2010)	0.166	1.64	0.7	3	1	1	20.5	2.9
247	van Paassen et al. (2010)	0.166	1.64	0.7	3	1	1	21.4	3.8
248	van Paassen et al. (2010)	0.166	1.64	0.7	3	1	1	22.5	4.2
249	van Paassen et al. (2010)	0.166	1.64	0.7	3	1	1	23.4	2.5
250	van Paassen et al. (2010)	0.166	1.64	0.7	3	1	1	22.6	7.6
251	van Paassen et al. (2010)	0.166	1.64	0.7	3	1	1	23.2	6
252	van Paassen et al. (2010)	0.166	1.64	0.7	3	1	1	23.1	4
253	van Paassen et al. (2010)	0.166	1.64	0.7	3	1	1	23.2	6.2
254	van Paassen et al. (2010)	0.166	1.64	0.7	3	1	1	24.7	2.7
255	van Paassen et al. (2010)	0.166	1.64	0.7	3	1	1	24.8	4.7
256	van Paassen et al. (2010)	0.166	1.64	0.7	3	1	1	26.2	4.9
257	van Paassen et al. (2010)	0.166	1.64	0.7	3	1	1	25.2	5.9
258	van Paassen et al. (2010)	0.166	1.64	0.7	3	1	1	27.3	5.8
259	Wang et al. (2020b)	0.165	1.44	0.59	1	0.38	0.25	5.92	2.78
260	Wang et al. (2020b)	0.165	1.44	0.59	1	0.38	0.25	6.07	3.15
261	Wang et al. (2020b)	0.165	1.44	0.59	1	0.38	0.25	6.76	4.14
262	Wang et al. (2020b)	0.165	1.44	0.59	1	0.38	0.25	6.49	4.34
263	Wang et al. (2020b)	0.165	1.44	0.59	1	0.38	0.25	6.61	5.48
264	Wang et al. (2020b)	0.165	1.44	0.59	1	0.38	0.25	6.81	3.11
265	Wang et al. (2020b)	0.165	1.44	0.59	1	0.75	0.5	6.77	3.79
266	Wang et al. (2020b)	0.165	1.44	0.59	1	0.75	0.5	7.05	3.71
267	Wang et al. (2020b)	0.165	1.44	0.59	1	0.75	0.5	6.83	2.73
268	Wang et al. (2020b)	0.165	1.44	0.59	1	0.75	0.5	7.16	3.8
269	Wang et al. (2020b)	0.165	1.44	0.59	1	0.75	0.5	6.39	3.62
270	Wang et al. (2020b)	0.165	1.44	0.59	1	0.75	0.5	7.04	5.64
271	Wang et al. (2020b)	0.165	1.44	0.59	1	1.5	1	3.47	1.04
272	Wang et al. (2020b)	0.165	1.44	0.59	1	1.5	1	4.39	2.46
273	Wang et al. (2020b)	0.165	1.44	0.59	1	1.5	1	5.67	1.7
274	Wang et al. (2020b)	0.165	1.44	0.59	1	1.5	1	5.76	2.28
275	Wang et al. (2020b)	0.165	1.44	0.59	1	1.5	1	6.99	1.85
276	Wang et al. (2020b)	0.165	1.44	0.59	1	1.5	1	7.33	2.8
277	Wen et al. (2019)	0.47	1.35	0.64	0.6	0.25	0.25	3.68	0.54
278	Wen et al. (2019)	0.47	1.35	0.64	0.6	0.25	0.25	4.05	0.48

279	Wen et al. (2019)	0.47	1.35	0.64	0.6	0.25	0.25	4.53	0.63
280	Wen et al. (2019)	0.47	1.35	0.64	0.6	0.25	0.25	8.1	1.69
281	Wen et al. (2019)	0.47	1.35	0.64	0.6	0.25	0.25	8.4	1.78
282	Wen et al. (2019)	0.47	1.35	0.64	0.6	0.25	0.25	8.68	1.6
283	Wen et al. (2019)	0.47	1.35	0.64	0.6	0.25	0.25	9.23	1.45
284	Wen et al. (2019)	0.47	1.35	0.64	0.6	0.25	0.25	9.4	1.73
285	Wen et al. (2019)	0.47	1.35	0.64	0.6	0.25	0.25	9.65	1.87
286	Wen et al. (2019)	0.47	1.35	0.64	0.6	0.25	0.25	11.63	2.46
287	Wen et al. (2019)	0.47	1.35	0.64	0.6	0.25	0.25	11.7	2.69
288	Wen et al. (2019)	0.47	1.35	0.64	0.6	0.25	0.25	12.75	2.34
289	Wen et al. (2019)	0.47	1.35	0.64	0.6	0.25	0.25	13.38	2.84
290	Wen et al. (2019)	0.47	1.35	0.64	0.6	0.25	0.25	14.5	2.88
291	Wen et al. (2019)	0.47	1.35	0.64	0.6	0.25	0.25	14.6	3.15
292	Wen et al. (2019)	0.47	1.35	0.64	0.6	0.25	0.25	15.73	3.56
293	Wen et al. (2019)	0.47	1.35	0.64	0.6	0.25	0.25	13.95	4
294	Wen et al. (2019)	0.47	1.35	0.64	0.6	0.25	0.25	14.25	4.28
295	Wen et al. (2019)	0.47	1.35	0.64	0.6	0.25	0.25	15.98	4.34
296	Wen et al. (2019)	0.47	1.35	0.64	0.6	0.5	0.5	7.07	1.11
297	Wen et al. (2019)	0.47	1.35	0.64	0.6	0.5	0.5	7.01	1.29
298	Wen et al. (2019)	0.47	1.35	0.64	0.6	0.5	0.5	8.42	1.3
299	Wen et al. (2019)	0.47	1.35	0.64	0.6	0.5	0.5	10.55	1.43
300	Wen et al. (2019)	0.47	1.35	0.64	0.6	0.5	0.5	15.95	2.49
301	Wen et al. (2019)	0.47	1.35	0.64	0.6	0.5	0.5	21.25	2.96
302	Wen et al. (2019)	0.47	1.35	0.64	0.6	0.5	0.5	21.91	2.85
303	Wen et al. (2019)	0.47	1.35	0.64	0.6	0.5	0.5	22.53	3.56
304	Wen et al. (2019)	0.47	1.35	0.64	0.6	0.5	0.5	23.57	3.39
305	Wen et al. (2019)	0.47	1.35	0.64	0.6	0.5	0.5	23.51	3.56
306	Wen et al. (2019)	0.47	1.35	0.64	0.6	0.5	0.5	23.95	3.95
307	Wen et al. (2019)	0.47	1.35	0.64	0.6	0.5	0.5	25.92	4.08
308	Wen et al. (2019)	0.47	1.35	0.64	0.6	0.5	0.5	28.4	4.88
309	Wen et al. (2019)	0.47	1.35	0.64	0.6	0.75	0.75	8.96	1.82
310	Wen et al. (2019)	0.47	1.35	0.64	0.6	0.75	0.75	9.74	1.84
311	Wen et al. (2019)	0.47	1.35	0.64	0.6	0.75	0.75	10.77	2.22
312	Wen et al. (2019)	0.47	1.35	0.64	0.6	0.75	0.75	12.42	2.13
313	Wen et al. (2019)	0.47	1.35	0.64	0.6	0.75	0.75	12.17	2.78
314	Wen et al. (2019)	0.47	1.35	0.64	0.6	0.75	0.75	14.82	4.33
315	Wen et al. (2019)	0.47	1.35	0.64	0.6	0.75	0.75	15.79	4.01
316	Wen et al. (2019)	0.47	1.35	0.64	0.6	0.75	0.75	16.16	4.61
317	Wen et al. (2019)	0.47	1.35	0.64	0.6	0.75	0.75	17.87	5.36
318	Wen et al. (2019)	0.47	1.35	0.64	0.6	0.75	0.75	18.72	5.13
319	Wen et al. (2019)	0.47	1.35	0.64	0.6	0.75	0.75	22.27	5.05
320	Wen et al. (2019)	0.47	1.35	0.64	0.6	0.75	0.75	23.49	5.86
321	Wen et al. (2019)	0.47	1.35	0.64	0.6	0.75	0.75	25.42	5.88
322	Wen et al. (2019)	0.47	1.35	0.64	0.6	0.75	0.75	26.38	6.11
323	Wen et al. (2019)	0.47	1.35	0.64	0.6	0.75	0.75	27.16	5.94
324	Wen et al. (2019)	0.47	1.35	0.64	0.6	0.75	0.75	28.5	5.81
325	Wen et al. (2019)	0.47	1.35	0.64	0.6	0.75	0.75	28.97	6.11

326	Wen et al. (2019)	0.47	1.35	0.64	0.6	0.75	0.75	29.47	6.83
327	Xiao et al. (2019a)	0.25	1.3	1.04	1	0.5	0.5	12.1	0.58
328	Xiao et al. (2019a)	0.25	1.3	1.02	1	0.5	0.5	12.8	0.66
329	Xiao et al. (2019a)	0.25	1.3	0.98	1	0.5	0.5	20.3	2.75
330	Zhao et al. (2014)	0.47	1.35	0.64	0.6	0.25	0.25	2.02	0.18
331	Zhao et al. (2014)	0.47	1.35	0.64	0.6	0.25	0.25	1.9	0.12
332	Zhao et al. (2014)	0.47	1.35	0.64	0.6	0.25	0.25	2	0.08
333	Zhao et al. (2014)	0.47	1.35	0.64	0.3	0.5	0.5	4.87	0.41
334	Zhao et al. (2014)	0.47	1.35	0.64	0.3	0.5	0.5	5.28	0.42
335	Zhao et al. (2014)	0.47	1.35	0.64	0.3	0.5	0.5	5.23	0.49
336	Zhao et al. (2014)	0.47	1.35	0.64	0.3	0.5	0.5	5.04	0.48
337	Zhao et al. (2014)	0.47	1.35	0.64	0.3	0.5	0.5	4.96	0.51
338	Zhao et al. (2014)	0.47	1.35	0.64	0.3	0.5	0.5	5.11	0.53
339	Zhao et al. (2014)	0.47	1.35	0.64	0.3	0.5	0.5	4.82	0.59
340	Zhao et al. (2014)	0.47	1.35	0.64	0.6	0.5	0.5	7.23	1.28
341	Zhao et al. (2014)	0.47	1.35	0.64	0.6	0.5	0.5	7.48	1.29
342	Zhao et al. (2014)	0.47	1.35	0.64	0.6	0.5	0.5	7.91	1.36
343	Zhao et al. (2014)	0.47	1.35	0.64	0.9	0.5	0.5	8.62	1.39
344	Zhao et al. (2014)	0.47	1.35	0.64	0.9	0.5	0.5	9.23	1.45
345	Zhao et al. (2014)	0.47	1.35	0.64	0.9	0.5	0.5	9.5	1.42
346	Zhao et al. (2014)	0.47	1.35	0.64	1.2	0.5	0.5	10.75	1.9
347	Zhao et al. (2014)	0.47	1.35	0.64	0.6	1	1	10.34	1.85
348	Zhao et al. (2014)	0.47	1.35	0.64	0.6	1.5	1.5	13.71	2.14
349	Zhao et al. (2014)	0.47	1.35	0.64	0.6	1.5	1.5	14.51	2.23
350	Zhao et al. (2014)	0.47	1.35	0.64	0.6	1.5	1.5	12.18	2.08
351	Zhao et al. (2014)	0.47	1.35	0.64	0.6	1.5	1.5	13.32	2.11

Note: d_{50} is median grain size; C_u is coefficient of uniformity; e_0 is initial void ratio; OD_{600} is the optical density of bacterial solution; M_u is urea concentration; M_{Ca} is calcium concentration; F_{Ca} is calcium carbonate content; UCS is unconfined compressive strength.

Optimum solution code for Group A

```
#include <math.h>
#include <stdio.h>

void mepx(double *x /*inputs*/, double *outputs)
{
   double prg[50];
   prg[0] = x[0];
   prg[1] = pow(prg[0], prg[0]);
   prg[2] = prg[1] - prg[0];
   prg[3] = x[6];
   prg[4] = prg[2] * prg[0];
   prg[5] = prg[1] * prg[4];
   prg[6] = x[2];
   prg[7] = prg[6] + prg[6];
   prg[8] = prg[5] * prg[0];
   prg[9] = prg[7] - prg[8];
   prg[10] = pow(prg[4], prg[6]);
   prg[11] = pow(prg[7], prg[5]);
   prg[12] = x[5];
   prg[13] = prg[10] * prg[3];
   prg[14] = prg[8] * prg[3];
   prg[15] = x[3];
   prg[16] = prg[3] - prg[9];
   prg[17] = prg[15] - prg[14];
   prg[18] = prg[16] + prg[1];
   prg[19] = prg[1] - prg[6];
   prg[20] = prg[15] * prg[15];
   prg[21] = pow(prg[12], prg[17]);
   prg[22] = x[3];
   prg[23] = prg[21] / prg[8];
   prg[24] = x[1];
   prg[25] = prg[13] - prg[10];
   prg[26] = prg[25] / prg[18];
   prg[27] = prg[23] + prg[20];
   prg[28] = prg[24] / prg[25];
   prg[29] = prg[7] + prg[16];
   prg[30] = x[5];
   prg[31] = prg[19] / prg[26];
   prg[32] = prg[10] * prg[27];
   prg[33] = pow(prg[21], prg[32]);
   prg[34] = prg[29] + prg[28];
   prg[35] = prg[34] / prg[18];
   prg[36] = prg[16] + prg[31];
   prg[37] = prg[26] / prg[11];
   prg[38] = x[3];
   prg[39] = pow(prg[34], prg[23]);
   prg[40] = prg[22] - prg[15];
```

```
    prg[41] = x[2];
    prg[42] = pow(prg[33], prg[19]);
    prg[43] = prg[37] / prg[42];
    prg[44] = x[2];
    prg[45] = prg[43] / prg[35];
    prg[46] = x[5];
    prg[47] = prg[20] * prg[4];
    prg[48] = prg[36] * prg[45];
    prg[49] = prg[43] - prg[3];

    outputs[0] = prg[48];
}

int main(void)
{

//example of utilization ...

    double x[7];
    x[0] = 0.260000;
    x[1] = 1.650000;
    x[2] = 0.670000;
    x[3] = 1.240000;
    x[4] = 0.250000;
    x[5] = 0.250000;
    x[6] = 2.690000;

    double outputs[1];

    mepx(x, outputs);
    printf("%lf", outputs[0]);
    getchar();
}
```

Optimum solution code for Group B

```
#include <math.h>
#include <stdio.h>

void mepx(double *x /*inputs*/, double *outputs)
{
   double prg[50];
   prg[0] = x[1];
   prg[1] = x[0];
   prg[2] = prg[0] + prg[0];
   prg[3] = x[4];
   prg[4] = prg[1] / prg[3];
   prg[5] = pow(prg[1], prg[2]);
   prg[6] = prg[4] + prg[2];
   prg[7] = x[3];
   prg[8] = prg[5] - prg[2];
   prg[9] = prg[7] - prg[4];
   prg[10] = prg[0] * prg[4];
   prg[11] = x[4];
   prg[12] = prg[2] - prg[8];
   prg[13] = x[5];
   prg[14] = x[6];
   prg[15] = x[2];
   prg[16] = prg[9] * prg[14];
   prg[17] = prg[9] * prg[13];
   prg[18] = pow(prg[4], prg[16]);
   prg[19] = prg[18] * prg[9];
   prg[20] = pow(prg[15], prg[6]);
   prg[21] = prg[14] / prg[12];
   prg[22] = prg[21] - prg[20];
   prg[23] = pow(prg[11], prg[4]);
   prg[24] = prg[19] * prg[21];
   prg[25] = pow(prg[23], prg[10]);
   prg[26] = prg[24] / prg[9];
   prg[27] = prg[24] - prg[17];
   prg[28] = prg[24] + prg[27];
   prg[29] = pow(prg[10], prg[23]);
   prg[30] = prg[25] - prg[3];
   prg[31] = prg[5] + prg[12];
   prg[32] = pow(prg[18], prg[31]);
   prg[33] = prg[32] / prg[29];
   prg[34] = prg[28] - prg[26];
   prg[35] = prg[11] - prg[13];
   prg[36] = pow(prg[35], prg[33]);
   prg[37] = x[3];
   prg[38] = x[3];
   prg[39] = prg[34] * prg[30];
   prg[40] = prg[27] + prg[0];
```

```
    prg[41] = prg[22] + prg[36];
    prg[42] = pow(prg[1], prg[10]);
    prg[43] = x[5];
    prg[44] = x[5];
    prg[45] = prg[41] - prg[39];
    prg[46] = prg[45] + prg[36];
    prg[47] = x[2];
    prg[48] = prg[2] - prg[9];
    prg[49] = x[6];

    outputs[0] = prg[46];
}

int main(void)
{

//example of utilization ...

    double x[7];
    x[0] = 0.260000;
    x[1] = 1.650000;
    x[2] = 0.670000;
    x[3] = 4.460000;
    x[4] = 1.000000;
    x[5] = 1.000000;
    x[6] = 6.970000;

    double outputs[1];

    mepx(x, outputs);
    printf("%lf", outputs[0]);
    getchar();
}
```

Optimum solution code for Group C

```
#include <math.h>
#include <stdio.h>

void mepx(double *x /*inputs*/, double *outputs)
{
   double prg[50];
   prg[0] = x[6];
   prg[1] = log10(prg[0]);
   prg[2] = prg[1] * prg[1];
   prg[3] = x[0];
   prg[4] = prg[3] * prg[2];
   prg[5] = pow(prg[3], prg[3]);
   prg[6] = prg[3] + prg[0];
   prg[7] = prg[0] * prg[0];
   prg[8] = pow(prg[3], prg[7]);
   prg[9] = prg[8] + prg[1];
   prg[10] = prg[2] * prg[5];
   prg[11] = x[5];
   prg[12] = prg[2] * prg[4];
   prg[13] = prg[12] + prg[10];
   prg[14] = prg[12] / prg[6];
   prg[15] = log10(prg[13]);
   prg[16] = x[0];
   prg[17] = prg[11] * prg[14];
   prg[18] = prg[9] + prg[16];
   prg[19] = x[4];
   prg[20] = x[2];
   prg[21] = prg[19] - prg[5];
   prg[22] = prg[4] + prg[17];
   prg[23] = prg[22] / prg[18];
   prg[24] = prg[19] - prg[11];
   prg[25] = pow(prg[24], prg[8]);
   prg[26] = prg[18] - prg[9];
   prg[27] = prg[14] / prg[21];
   prg[28] = prg[2] - prg[26];
   prg[29] = prg[13] - prg[23];
   prg[30] = prg[27] * prg[15];
   prg[31] = log10(prg[17]);
   prg[32] = x[0];
   prg[33] = pow(prg[20], prg[31]);
   prg[34] = prg[28] - prg[14];
   prg[35] = x[3];
   prg[36] = prg[35] / prg[34];
   prg[37] = prg[33] * prg[29];
   prg[38] = prg[25] / prg[5];
   prg[39] = prg[36] + prg[30];
   prg[40] = x[5];
```

```
    prg[41] = prg[27] / prg[39];
    prg[42] = x[5];
    prg[43] = prg[37] + prg[27];
    prg[44] = prg[28] / prg[15];
    prg[45] = prg[14] - prg[41];
    prg[46] = x[1];
    prg[47] = prg[41] + prg[37];
    prg[48] = prg[0] - prg[34];
    prg[49] = prg[38] + prg[47];

    outputs[0] = prg[49];
}

int main(void)
{

//example of utilization ...

    double x[7];
    x[0] = 0.470000;
    x[1] = 1.350000;
    x[2] = 0.640000;
    x[3] = 0.300000;
    x[4] = 0.500000;
    x[5] = 0.500000;
    x[6] = 4.870000;

    double outputs[1];

    mepx(x, outputs);
    printf("%lf", outputs[0]);
    getchar();
}
```

Optimum solution code for Group D

```
#include <math.h>
#include <stdio.h>

void mepx(double *x /*inputs*/, double *outputs)
{
  double prg[50];
  prg[0] = x[0];
  prg[1] = pow(prg[0], prg[0]);
  prg[2] = prg[1] - prg[0];
  prg[3] = prg[2] * prg[0];
  prg[4] = x[3];
  prg[5] = prg[3] * prg[1];
  prg[6] = prg[3] + prg[3];
  prg[7] = x[2];
  prg[8] = x[6];
  prg[9] = prg[6] + prg[6];
  prg[10] = pow(prg[7], prg[8]);
  prg[11] = x[5];
  prg[12] = prg[6] + prg[10];
  prg[13] = prg[12] + prg[12];
  prg[14] = prg[13] + prg[11];
  prg[15] = prg[2] * prg[2];
  prg[16] = prg[11] * prg[4];
  prg[17] = prg[2] * prg[14];
  prg[18] = prg[16] - prg[4];
  prg[19] = prg[8] - prg[18];
  prg[20] = prg[5] / prg[13];
  prg[21] = pow(prg[20], prg[13]);
  prg[22] = x[4];
  prg[23] = prg[21] + prg[19];
  prg[24] = prg[22] - prg[11];
  prg[25] = pow(prg[17], prg[23]);
  prg[26] = pow(prg[23], prg[13]);
  prg[27] = prg[23] * prg[20];
  prg[28] = pow(prg[24], prg[25]);
  prg[29] = prg[23] * prg[26];
  prg[30] = prg[18] * prg[21];
  prg[31] = prg[0] - prg[14];
  prg[32] = prg[28] + prg[27];
  prg[33] = prg[15] + prg[24];
  prg[34] = prg[28] / prg[33];
  prg[35] = x[3];
  prg[36] = x[6];
  prg[37] = prg[28] * prg[34];
  prg[38] = prg[30] / prg[31];
  prg[39] = pow(prg[33], prg[32]);
  prg[40] = prg[31] - prg[19];
```

```
    prg[41] = x[3];
    prg[42] = pow(prg[17], prg[39]);
    prg[43] = prg[42] * prg[32];
    prg[44] = x[2];
    prg[45] = x[3];
    prg[46] = prg[43] + prg[37];
    prg[47] = prg[38] * prg[30];
    prg[48] = x[3];
    prg[49] = prg[46] - prg[47];

    outputs[0] = prg[49];
}

int main(void)
{

//example of utilization ...

    double x[7];
    x[0] = 0.470000;
    x[1] = 1.350000;
    x[2] = 0.640000;
    x[3] = 0.600000;
    x[4] = 0.500000;
    x[5] = 0.500000;
    x[6] = 23.510000;

    double outputs[1];

    mepx(x, outputs);
    printf("%lf", outputs[0]);
    getchar();
}
```

Optimum solution code for Group E

```
#include <math.h>
#include <stdio.h>

void mepx(double *x /*inputs*/, double *outputs)
{
  double prg[50];
  prg[0] = x[6];
  prg[1] = x[0];
  prg[2] = log10(prg[0]);
  prg[3] = prg[2] * prg[2];
  prg[4] = prg[3] * prg[3];
  prg[5] = prg[4] + prg[1];
  prg[6] = prg[2] * prg[1];
  prg[7] = pow(prg[1], prg[0]);
  prg[8] = pow(prg[7], prg[0]);
  prg[9] = pow(prg[0], prg[0]);
  prg[10] = x[4];
  prg[11] = prg[2] * prg[5];
  prg[12] = x[5];
  prg[13] = prg[0] * prg[8];
  prg[14] = prg[1] * prg[11];
  prg[15] = prg[0] * prg[13];
  prg[16] = prg[15] / prg[9];
  prg[17] = pow(prg[16], prg[6]);
  prg[18] = prg[10] - prg[12];
  prg[19] = prg[6] + prg[12];
  prg[20] = pow(prg[19], prg[12]);
  prg[21] = prg[18] * prg[11];
  prg[22] = pow(prg[21], prg[17]);
  prg[23] = prg[22] / prg[20];
  prg[24] = prg[3] + prg[14];
  prg[25] = prg[23] + prg[24];
  prg[26] = log10(prg[20]);
  prg[27] = prg[26] + prg[21];
  prg[28] = prg[10] * prg[0];
  prg[29] = prg[23] + prg[25];
  prg[30] = prg[28] / prg[29];
  prg[31] = prg[27] * prg[1];
  prg[32] = prg[29] - prg[21];
  prg[33] = x[3];
  prg[34] = prg[24] / prg[32];
  prg[35] = log10(prg[7]);
  prg[36] = pow(prg[30], prg[11]);
  prg[37] = prg[4] / prg[36];
  prg[38] = prg[33] * prg[37];
  prg[39] = x[4];
  prg[40] = prg[38] * prg[38];
```

```
    prg[41] = x[2];
    prg[42] = prg[31] / prg[35];
    prg[43] = prg[40] - prg[31];
    prg[44] = prg[11] + prg[1];
    prg[45] = prg[32] + prg[43];
    prg[46] = prg[22] + prg[24];
    prg[47] = x[2];
    prg[48] = prg[3] + prg[1];
    prg[49] = prg[42] + prg[45];

    outputs[0] = prg[49];
}

int main(void)
{

//example of utilization ...

    double x[7];
    x[0] = 0.470000;
    x[1] = 1.350000;
    x[2] = 0.640000;
    x[3] = 0.600000;
    x[4] = 0.250000;
    x[5] = 0.250000;
    x[6] = 14.600000;

    double outputs[1];

    mepx(x, outputs);
    printf("%lf", outputs[0]);
    getchar();
}
```