Karanjot Singh

In [22]:

```python
import pandas as pd
import numpy as np
from sklearn.feature_extraction.text import CountVectorizer
from sklearn.metrics.pairwise import cosine_similarity
```

In [23]:

```python
df = pd.read_csv(r'movie_dataset.csv')
df.head(3)
```

Out[23]:

	index	budget	genres	homepage	id	keywords
0	0	237000000	Action Adventure Fantasy Science Fiction	http://www.avatarmovie.com/	19995	culture clash future space war space colony so...
1	1	300000000	Adventure Fantasy Action	http://disney.go.com/disneypictures/pirates/	285	ocean drug abuse exotic island east india trad...
2	2	245000000	Action Adventure Crime	http://www.sonypictures.com/movies/spectre/	206647	spy based on novel secret agent sequel mi6

3 rows × 24 columns

In [38]:

```
df.shape
```

```
-------------------------------------------------------------------------
-
AttributeError                                    Traceback (most recent call las
t)
<ipython-input-38-0739b3665721> in <module>
      1 df.shape
----> 2 df.type

~\Anaconda3\lib\site-packages\pandas\core\generic.py in __getattr__(self,
 name)
   5177                 if self._info_axis._can_hold_identifiers_and_holds_nam
e(name):
   5178                     return self[name]
-> 5179             return object.__getattribute__(self, name)
   5180
   5181         def __setattr__(self, name, value):

AttributeError: 'DataFrame' object has no attribute 'type'
```

In [25]:

```
features = ['keywords','cast','genres','director']
df[features].head(3)
```

Out[25]:

	keywords	cast	genres	director
0	culture clash future space war space colony so...	Sam Worthington Zoe Saldana Sigourney Weaver S...	Action Adventure Fantasy Science Fiction	James Cameron
1	ocean drug abuse exotic island east india trad...	Johnny Depp Orlando Bloom Keira Knightley Stel...	Adventure Fantasy Action	Gore Verbinski
2	spy based on novel secret agent sequel mi6	Daniel Craig Christoph Waltz L\u00e9a Seydoux ...	Action Adventure Crime	Sam Mendes

In [26]:

```
for feature in features:
    df[feature] = df[feature].fillna('')
```

In [29]:

```
def combined_features(row):
    return row['keywords']+' '+row['cast']+' '+row['genres']+' '+row['director']
```

In [30]:

```
df['combined_features'] = df.apply(combined_features,axis = 1)
```

In [31]:

```
count_matrix = CountVectorizer().fit_transform(df['combined_features'])
```

In [32]:

```python
cosine_sim = cosine_similarity(count_matrix)
print(cosine_sim)
```

```
[[1.         0.10540926 0.12038585 ... 0.         0.         0.        ]
 [0.10540926 1.         0.0761387  ... 0.03651484 0.         0.        ]
 [0.12038585 0.0761387  1.         ... 0.         0.11145564 0.        ]
 ...
 [0.         0.03651484 0.         ... 1.         0.         0.04264014]
 [0.         0.         0.11145564 ... 0.         1.         0.        ]
 [0.         0.         0.         ... 0.04264014 0.         1.        ]]
```

In [33]:

```python
cosine_sim.shape
```

Out[33]:

```
(4803, 4803)
```

In [34]:

```python
def get_title_from_index(index):
    return df[df.index == index]['title'].values[0]

def get_index_from_title(title):
    return df[df.title == title]['index'].values[0]
```

In [39]:

```python
movie_user_likes = 'The Amazing Spider-Man'

movie_index = get_index_from_title(movie_user_likes)
```

In [41]:

```python
similar_movies = list(enumerate(cosine_sim[movie_index]))
print(similar_movies)
```

[(0, 0.11785113019775793), (1, 0.14907119849998599), (2, 0.085125653075874
87), (3, 0.04003203845127179), (4, 0.12247448713915893), (5, 0.16329931618
554525), (6, 0.0), (7, 0.18633899812498247), (8, 0.17407765595569785), (9,
0.2083333333333334), (10, 0.12247448713915893), (11, 0.12247448713915893),
(12, 0.1276884796138123), (13, 0.08164965809277262), (14, 0.15430334996209
19), (15, 0.12009611535381537), (16, 0.18330889377669166), (17, 0.13055824
19667734), (18, 0.07453559924999299), (19, 0.1305582419667734), (20, 0.999
9999999999997), (21, 0.12500000000000003), (22, 0.0936585811581694), (23,
0.13693063937629155), (24, 0.07216878364870323), (25, 0.0), (26, 0.1543033
499620919), (27, 0.08333333333333336), (28, 0.08333333333333336), (29, 0.0
8703882797784893), (30, 0.24019223070763074), (31, 0.16329931618554525),
(32, 0.11572751247156893), (33, 0.1928791874526149), (34, 0.0), (35, 0.089
08708708063747481), (36, 0.08333333333333336), (37, 0.09128709291752769), (3
8, 0.5604485383178051), (39, 0.08006407690254358), (40, 0.0379049021789451
75), (41, 0.12009611535381537), (42, 0.0), (43, 0.04082482904638631), (44,
0.044543540318737404), (45, 0.08006407690254358), (46, 0.2274294130736710
7), (47, 0.09128709291752769), (48, 0.09128709291752769), (49, 0.0), (50,
0.12247448713915893), (51, 0.07715167498104596), (52, 0.0870388279778489
3), (53, 0.08703882797784893), (54, 0.042562826537937436), (55, 0.13055824
19667734), (56, 0.08908708708063747481), (57, 0.051031036307982884), (58, 0.0
4811252243246882), (59, 0.11785113019775793), (60, 0.0), (61, 0.1250000000
0000003), (62, 0.08703882797784893), (63, 0.11785113019775793), (64, 0.120
09611535381537), (65, 0.04003203845127179), (66, 0.037267799624996496), (6
7, 0.044543540318737404), (68, 0.16329931618554525), (69, 0.04166666666666
668), (70, 0.08006407690254358), (71, 0.15811388300841897), (72, 0.1178511
3019775793), (73, 0.11371470653683552), (74, 0.04351941398892446), (75, 0.
09128709291752769), (76, 0.08512565307587487), (77, 0.0), (78, 0.085125653
07587487), (79, 0.1928791874526149), (80, 0.08908708708063747481), (81, 0.140
028008402801), (82, 0.042562826537937436), (83, 0.09622504486493764), (84,
0.11785113019775793), (85, 0.17407765595569785), (86, 0.0890870806374748
1), (87, 0.04351941398892446), (88, 0.12009611535381537), (89, 0.042562826
537937436), (90, 0.08703882797784893), (91, 0.09128709291752769), (92, 0.0
8908708708063747481), (93, 0.03928371006591931), (94, 0.16329931618554525),
(95, 0.07856742013183862), (96, 0.16012815380508716), (97, 0.0800640769025
4358), (98, 0.1305582419667734), (99, 0.04166666666666668), (100, 0.043519
41398892446), (101, 0.17407765595569785), (102, 0.12009611535381537), (10
3, 0.1305582419667734), (104, 0.20412414523193156), (105, 0.04256282653793
7436), (106, 0.12500000000000003), (107, 0.1336306209562122), (108, 0.0785
6742013183862), (109, 0.08333333333333336), (110, 0.0), (111, 0.0851256530
7587487), (112, 0.17025130615174974), (113, 0.20412414523193156), (114, 0.
16329931618554525), (115, 0.12247448713915893), (116, 0.0700140042014005),
(117, 0.11785113019775793), (118, 0.04003203845127179), (119, 0.0400320384
5127179), (120, 0.0), (121, 0.12500000000000003), (122, 0.1702513061517497
4), (123, 0.07715167498104596), (124, 0.045643546458763846), (125, 0.07453
559924999299), (126, 0.23145502494313788), (127, 0.08333333333333336), (12
8, 0.0), (129, 0.21281413268968719), (130, 0.03928371006591931), (131, 0.1
3693063937629155), (132, 0.04351941398892446), (133, 0.08164965809277262),
(134, 0.08908708708063747481), (135, 0.04082482904638631), (136, 0.0400320384
5127179), (137, 0.0), (138, 0.1305582419667734), (139, 0.127688479613812
3), (140, 0.042562826537937436), (141, 0.042562826537937436), (142, 0.0435
1941398892446), (143, 0.08703882797784893), (144, 0.08512565307587487), (1
45, 0.03928371006591931), (146, 0.0), (147, 0.07580980435789035), (148, 0.
08512565307587487), (149, 0.08164965809277262), (150, 0.0758098043578903
5), (151, 0.08333333333333336), (152, 0.08333333333333336), (153, 0.089087
08708063747481), (154, 0.042562826537937436), (155, 0.0), (156, 0.08006407690
254358), (157, 0.1336306209562122), (158, 0.08703882797784893), (159, 0.17
407765595569785), (160, 0.15430334996209199), (161, 0.0468292905790847), (1
62, 0.04950737714883372), (163, 0.07715167498104596), (164, 0.087038827977
84893), (165, 0.04351941398892446), (166, 0.08908708708063747481), (167, 0.08
908708708063747481), (168, 0.12247448713915893), (169, 0.16012815380508716),
(170, 0.08908708708063747481), (171, 0.045643546458763846), (172, 0.083333333

33333336), (173, 0.0), (174, 0.17766726362967541), (175, 0.080064076902543
58), (176, 0.07715167498104596), (177, 0.0), (178, 0.04351941398892446),
(179, 0.0468292905790847), (180, 0.08512565307587487), (181, 0.04256282653
7937436), (182, 0.19641855032959654), (183, 0.08164965809277262), (184, 0.
04082482904638631), (185, 0.04082482904638631), (186, 0.0800640769025435
8), (187, 0.1666666666666667), (188, 0.044543540318737404), (189, 0.096225
04486493764), (190, 0.042562826537937436), (191, 0.12500000000000003), (19
2, 0.0), (193, 0.09128709291752769), (194, 0.0), (195, 0.0785674201318386
2), (196, 0.04003203845127179), (197, 0.1276884796138123), (198, 0.0851256
5307587487), (199, 0.12247448713915893), (200, 0.04166666666666668), (201,
0.0), (202, 0.042562826537937436), (203, 0.1928791874526149), (204, 0.0435
1941398892446), (205, 0.08703882797784893), (206, 0.1276884796138123), (20
7, 0.1276884796138123), (208, 0.1336306209562122), (209, 0.089087080637474
81), (210, 0.07856742013183862), (211, 0.042562826537937436), (212, 0.0800
6407690254358), (213, 0.1336306209562122), (214, 0.0), (215, 0.13363062095
62122), (216, 0.09128709291752769), (217, 0.07453559924999299), (218, 0.04
811252243246882), (219, 0.08908708063747481), (220, 0.08512565307587487),
(221, 0.042562826537937436), (222, 0.04351941398892446), (223, 0.080064076
90254358), (224, 0.04351941398892446), (225, 0.16012815380508716), (226,
0.0), (227, 0.044543540318737404), (228, 0.08512565307587487), (229, 0.085
12565307587487), (230, 0.08703882797784893), (231, 0.0), (232, 0.204124145
23193156), (233, 0.08908708063747481), (234, 0.24019223070763074), (235,
0.08333333333333336), (236, 0.03928371006591931), (237, 0.0851256530758748
7), (238, 0.12500000000000003), (239, 0.03666177875533833), (240, 0.085125
65307587487), (241, 0.1543033499620919), (242, 0.17407765595569785), (243,
0.12247448713915893), (244, 0.044543540318737404), (245, 0.083333333333333
36), (246, 0.12009611535381537), (247, 0.0), (248, 0.04082482904638631),
(249, 0.04166666666666668), (250, 0.0), (251, 0.0), (252, 0.04454354031873
7404), (253, 0.037904902178945175), (254, 0.109985336266015), (255, 0.0),
(256, 0.04166666666666668), (257, 0.08512565307587487), (258, 0.0416666666
6666668), (259, 0.08908708063747481), (260, 0.08164965809277262), (261, 0.
04811252243246882), (262, 0.1305582419667734), (263, 0.08164965809277262),
(264, 0.0), (265, 0.08512565307587487), (266, 0.04082482904638631), (267,
0.16329931618554525), (268, 0.03928371006591931), (269, 0.0), (270, 0.0833
3333333333336), (271, 0.12247448713915893), (272, 0.0), (273, 0.0385758374
9052298), (274, 0.1336306209562122), (275, 0.04082482904638631), (276, 0.1
2500000000000003), (277, 0.13693063937629155), (278, 0.07453559924999299),
(279, 0.042562826537937436), (280, 0.0), (281, 0.04166666666666668), (282,
0.04351941398892446), (283, 0.03450327796711771), (284, 0.0416666666666666
8), (285, 0.04082482904638631), (286, 0.042562826537937436), (287, 0.0),
(288, 0.0), (289, 0.08164965809277262), (290, 0.08164965809277262), (291,
0.07856742013183862), (292, 0.1543033499620919), (293, 0.0400320384512717
9), (294, 0.1336306209562122), (295, 0.04003203845127179), (296, 0.0851256
5307587487), (297, 0.1305582419667734), (298, 0.0), (299, 0.08512565307587
487), (300, 0.08006407690254358), (301, 0.0), (302, 0.09622504486493764),
(303, 0.09128709291752769), (304, 0.09128709291752769), (305, 0.2236067977
4997896), (306, 0.04351941398892446), (307, 0.08703882797784893), (308, 0.
03857583749052298), (309, 0.0936585811581694), (310, 0.08703882797784893),
(311, 0.044543540318737404), (312, 0.12500000000000003), (313, 0.042562826
537937436), (314, 0.08908708063747481), (315, 0.1404878717372541), (316,
0.0), (317, 0.0), (318, 0.0), (319, 0.0468292905790847), (320, 0.125000000
00000003), (321, 0.0), (322, 0.1276884796138123), (323, 0.0), (324, 0.0435
1941398892446), (325, 0.15713484026367724), (326, 0.04166666666666668), (3
27, 0.0468292905790847), (328, 0.08333333333333336), (329, 0.1250000000000
0003), (330, 0.12500000000000003), (331, 0.1178511301975793), (332, 0.125
00000000000003), (333, 0.0), (334, 0.08333333333333336), (335, 0.041666666
66666668), (336, 0.10502100630210075), (337, 0.03450327796711771), (338,
0.0), (339, 0.08333333333333336), (340, 0.09128709291752769), (341, 0.0851
2565307587487), (342, 0.07856742013183862), (343, 0.0), (344, 0.1020620726
1596577), (345, 0.04811252243246882), (346, 0.0), (347, 0.0), (348, 0.1305
582419667734), (349, 0.12247448713915893), (350, 0.08703882797784893), (35

1, 0.0), (352, 0.044543540318737404), (353, 0.03928371006591931), (354, 0.
0), (355, 0.0468292905790847), (356, 0.08333333333333336), (357, 0.0), (35
8, 0.03928371006591931), (359, 0.042562826537937436), (360, 0.0), (361, 0.
044543540318737404), (362, 0.042562826537937436), (363, 0.1224744871391589
3), (364, 0.03857583749052298), (365, 0.0), (366, 0.08006407690254358), (3
67, 0.04351941398892446), (368, 0.08908708063747481), (369, 0.125000000000
00003), (370, 0.12500000000000003), (371, 0.08164965809277262), (372, 0.09
128709291752769), (373, 0.0), (374, 0.044543540318737404), (375, 0.0), (37
6, 0.04166666666666668), (377, 0.0), (378, 0.0), (379, 0.1250000000000000
3), (380, 0.0), (381, 0.09901475429766744), (382, 0.0), (383, 0.0833333333
3333336), (384, 0.04351941398892446), (385, 0.0), (386, 0.0435194139889244
6), (387, 0.045643546458763846), (388, 0.0), (389, 0.08333333333333336),
(390, 0.044543540318737404), (391, 0.04351941398892446), (392, 0.041666666
66666668), (393, 0.034020690871988585), (394, 0.045643546458763846), (395,
0.0), (396, 0.08908708063747481), (397, 0.0), (398, 0.0), (399, 0.04454354
0318737404), (400, 0.08164965809277262), (401, 0.0), (402, 0.1157275124715
6893), (403, 0.11572751247156893), (404, 0.0), (405, 0.03355780276070122),
(406, 0.0), (407, 0.03666177875533833), (408, 0.09128709291752769), (409,
0.0), (410, 0.08006407690254358), (411, 0.11572751247156893), (412, 0.1200
9611535381537), (413, 0.04166666666666668), (414, 0.042562826537937436),
(415, 0.044543540318737404), (416, 0.04166666666666668), (417, 0.044543540
318737404), (418, 0.0), (419, 0.16329931618554525), (420, 0.08512565307587
487), (421, 0.0), (422, 0.0), (423, 0.04351941398892446), (424, 0.08164965
809277262), (425, 0.08703882797784893), (426, 0.08164965809277262), (427,
0.0), (428, 0.08333333333333336), (429, 0.0), (430, 0.0), (431, 0.04454354
0318737404), (432, 0.04351941398892446), (433, 0.042562826537937436), (43
4, 0.0), (435, 0.04351941398892446), (436, 0.0), (437, 0.045643546458763846
), (438, 0.0), (439, 0.0), (440, 0.0), (441, 0.0), (442, 0.03790490217894
5175), (443, 0.04003203845127179), (444, 0.0), (445, 0.0), (446, 0.0425628
26537937436), (447, 0.044543540318737404), (448, 0.24077170617153842), (44
9, 0.04351941398892446), (450, 0.0), (451, 0.04003203845127179), (452, 0.0
3666177875533833), (453, 0.042562826537937436), (454, 0.0435194139889244
6), (455, 0.04351941398892446), (456, 0.037267799624996496), (457, 0.09365
85811581694), (458, 0.044543540318737404), (459, 0.042562826537937436), (4
60, 0.0), (461, 0.04351941398892446), (462, 0.0), (463, 0.0), (464, 0.0),
(465, 0.0), (466, 0.0936585811581694), (467, 0.13693063937629155), (468,
0.04351941398892446), (469, 0.16329931618554525), (470, 0.0425628265379374
36), (471, 0.16012815380508716), (472, 0.12247448713915893), (473, 0.04003
203845127179), (474, 0.0), (475, 0.09128709291752769), (476, 0.04811252243
246882), (477, 0.0), (478, 0.08908708063747481), (479, 0.0495073771488337
2), (480, 0.04082482904638631), (481, 0.0), (482, 0.0), (483, 0.0816496580
9277262), (484, 0.042562826537937436), (485, 0.12500000000000003), (486,
0.12500000000000003), (487, 0.04166666666666668), (488, 0.0800640769025435
8), (489, 0.0), (490, 0.08333333333333336), (491, 0.07856742013183862), (4
92, 0.0), (493, 0.04351941398892446), (494, 0.08164965809277262), (495, 0.
08333333333333336), (496, 0.0), (497, 0.0), (498, 0.044543540318737404),
(499, 0.0), (500, 0.03857583749052298), (501, 0.1305582419667734), (502,
0.0), (503, 0.10350983390135313), (504, 0.0), (505, 0.08164965809277262),
(506, 0.04082482904638631), (507, 0.08908708063747481), (508, 0.0851256530
7587487), (509, 0.0), (510, 0.04166666666666668), (511, 0.1964185503295965
4), (512, 0.19641855032959654), (513, 0.08512565307587487), (514, 0.146647
11502135333), (515, 0.0), (516, 0.0), (517, 0.0), (518, 0.0990147542976674
4), (519, 0.0), (520, 0.0), (521, 0.0), (522, 0.045643546458763846), (523,
0.18257418583505539), (524, 0.0), (525, 0.07715167498104596), (526, 0.0),
(527, 0.0), (528, 0.042562826537937436), (529, 0.04811252243246882), (530,
0.04950737714883372), (531, 0.08164965809277262), (532, 0.0), (533, 0.0445
43540318737404), (534, 0.0468292905790847), (535, 0.12009611535381537), (5
36, 0.037904902178945175), (537, 0.09128709291752769), (538, 0.0), (539,
0.08512565307587487), (540, 0.0936585811581694), (541, 0.0800640769025435
8), (542, 0.04166666666666668), (543, 0.12500000000000003), (544, 0.085125
65307587487), (545, 0.07715167498104596), (546, 0.04351941398892446), (54

7, 0.1305582419667734), (548, 0.04166666666666668), (549, 0.04454354031873
7404), (550, 0.0), (551, 0.044543540318737404), (552, 0.0), (553, 0.045643
546458763846), (554, 0.0), (555, 0.04082482904638631), (556, 0.03857583749
052298), (557, 0.04166666666666668), (558, 0.04166666666666668), (559, 0.
0), (560, 0.045643546458763846), (561, 0.10206207261596575), (562, 0.0),
(563, 0.045643546458763846), (564, 0.0), (565, 0.12500000000000003), (566,
0.037267799624996496), (567, 0.0), (568, 0.08512565307587487), (569, 0.042
562826537937436), (570, 0.1276884796138123), (571, 0.04351941398892446),
(572, 0.12500000000000003), (573, 0.044543540318737404), (574, 0.083333333
33333336), (575, 0.0), (576, 0.03857583749052298), (577, 0.083333333333333
36), (578, 0.04003203845127179), (579, 0.04003203845127179), (580, 0.04564
3546458763846), (581, 0.07715167498104596), (582, 0.04082482904638631), (5
83, 0.1276884796138123), (584, 0.04950737714883372), (585, 0.0), (586, 0.0
32274861218395144), (587, 0.08006407690254358), (588, 0.0527046276694729
9), (589, 0.08512565307587487), (590, 0.04351941398892446), (591, 0.081649
65809277262), (592, 0.04351941398892446), (593, 0.0), (594, 0.089087080637
47481), (595, 0.08006407690254358), (596, 0.12500000000000003), (597, 0.08
512565307587487), (598, 0.0), (599, 0.03355780276070122), (600, 0.09901475
429766744), (601, 0.044543540318737404), (602, 0.17817416127494962), (603,
0.0), (604, 0.08333333333333336), (605, 0.0), (606, 0.0), (607, 0.08006407
690254358), (608, 0.04003203845127179), (609, 0.044543540318737404), (610,
0.17407765595569785), (611, 0.04166666666666668), (612, 0.0890870806374748
1), (613, 0.042562826537937436), (614, 0.044543540318737404), (615, 0.0345
03327796711771), (616, 0.0), (617, 0.04351941398892446), (618, 0.1250000000
0000003), (619, 0.0), (620, 0.0), (621, 0.03857583749052298), (622, 0.0816
4965809277262), (623, 0.0), (624, 0.08006407690254358), (625, 0.0), (626,
0.0), (627, 0.10660035817780525), (628, 0.0), (629, 0.07332355751067667),
(630, 0.0), (631, 0.20016019225635895), (632, 0.0), (633, 0.0), (634, 0.04
003203845127179), (635, 0.0), (636, 0.04351941398892446), (637, 0.0), (63
8, 0.0), (639, 0.04166666666666668), (640, 0.1305582419667734), (641, 0.
0), (642, 0.03500700210070025), (643, 0.07856742013183862), (644, 0.089087
08063747481), (645, 0.08333333333333336), (646, 0.04082482904638631), (64
7, 0.04351941398892446), (648, 0.0), (649, 0.0), (650, 0.0), (651, 0.0),
(652, 0.0), (653, 0.04351941398892446), (654, 0.08333333333333336), (655,
0.044543540318737404), (656, 0.04166666666666668), (657, 0.043519413988924
46), (658, 0.07216878364870323), (659, 0.04351941398892446), (660, 0.08333
333333333336), (661, 0.12009611535381537), (662, 0.0), (663, 0.0), (664,
0.08703882797784893), (665, 0.08006407690254358), (666, 0.0456435464587638
46), (667, 0.0), (668, 0.12009611535381537), (669, 0.0), (670, 0.081649658
09277262), (671, 0.042562826537937436), (672, 0.04351941398892446), (673,
0.0), (674, 0.04811252243246882), (675, 0.04351941398892446), (676, 0.0425
62826537937436), (677, 0.044543540318737404), (678, 0.10540925533894598),
(679, 0.0), (680, 0.04003203845127179), (681, 0.0), (682, 0.0), (683, 0.07
216878364870323), (684, 0.0), (685, 0.04166666666666668), (686, 0.0), (68
7, 0.08703882797784893), (688, 0.0), (689, 0.0), (690, 0.0400320384512717
9), (691, 0.08164965809277262), (692, 0.0), (693, 0.0), (694, 0.0408248290
4638631), (695, 0.11785113019775793), (696, 0.0), (697, 0.0), (698, 0.0435
1941398892446), (699, 0.0), (700, 0.07856742013183862), (701, 0.0), (702,
0.045643546458763846), (703, 0.04166666666666668), (704, 0.044543540318737
404), (705, 0.0), (706, 0.08908708063747481), (707, 0.045643546458763846),
(708, 0.04351941398892446), (709, 0.0), (710, 0.04082482904638631), (711,
0.08006407690254358), (712, 0.04082482904638631), (713, 0.0385758374905229
8), (714, 0.0), (715, 0.14433756729740646), (716, 0.04811252243246882), (7
17, 0.0), (718, 0.036084391824351615), (719, 0.0), (720, 0.0), (721, 0.044
543540318737404), (722, 0.0), (723, 0.0), (724, 0.1336306209562122), (725,
0.036084391824351615), (726, 0.0), (727, 0.0), (728, 0.08164965809277262),
(729, 0.0), (730, 0.042562826537937436), (731, 0.09128709291752769), (732,
0.08703882797784893), (733, 0.0), (734, 0.08908708063747481), (735, 0.0416
6666666666668), (736, 0.045643546458763846), (737, 0.04082482904638631),
(738, 0.0), (739, 0.04351941398892446), (740, 0.04351941398892446), (741,
0.08164965809277262), (742, 0.07580980435789035), (743, 0.0445435403187374

04), (744, 0.1543033499620919), (745, 0.04351941398892446), (746, 0.127688
4796138123), (747, 0.1404878717372541), (748, 0.09128709291752769), (749,
0.0), (750, 0.04811252243246882), (751, 0.0), (752, 0.03928371006591931),
(753, 0.04811252243246882), (754, 0.0700140042014005), (755, 0.08703882797
784893), (756, 0.0), (757, 0.0), (758, 0.1276884796138123), (759, 0.040032
03845127179), (760, 0.0), (761, 0.042562826537937436), (762, 0.12768847961
38123), (763, 0.0), (764, 0.044543540318737404), (765, 0.0), (766, 0.0),
(767, 0.12500000000000003), (768, 0.12009611535381537), (769, 0.0468292905
790847), (770, 0.0), (771, 0.0), (772, 0.0), (773, 0.09128709291752769),
(774, 0.04950737714883372), (775, 0.0), (776, 0.045643546458763846), (777,
0.1276884796138123), (778, 0.08006407690254358), (779, 0.0435194139889244
6), (780, 0.0), (781, 0.12500000000000003), (782, 0.07856742013183862), (7
83, 0.04082482904638631), (784, 0.24019223070763074), (785, 0.122474487139
15893), (786, 0.14433756729740646), (787, 0.07106690545187017), (788, 0.19
28791874526149), (789, 0.0), (790, 0.045643546458763846), (791, 0.08703882
797784893), (792, 0.03928371006591931), (793, 0.04082482904638631), (794,
0.08333333333333336), (795, 0.0), (796, 0.0), (797, 0.045643546458763846),
(798, 0.07453559924999299), (799, 0.08333333333333336), (800, 0.0758098043
5789035), (801, 0.0), (802, 0.0), (803, 0.04811252243246882), (804, 0.0445
43540318737404), (805, 0.17025130615174974), (806, 0.0), (807, 0.040824829
04638631), (808, 0.08703882797784893), (809, 0.0), (810, 0.040032038451271
79), (811, 0.0), (812, 0.04166666666666668), (813, 0.11785113019775793),
(814, 0.04166666666666668), (815, 0.0), (816, 0.04166666666666668), (817,
0.037267799624996496), (818, 0.045643546458763846), (819, 0.0), (820, 0.04
5643546458763846), (821, 0.04351941398892446), (822, 0.0), (823, 0.0851256
5307587487), (824, 0.0), (825, 0.1305582419667734), (826, 0.0), (827, 0.04
351941398892446), (828, 0.044543540318737404), (829, 0.0), (830, 0.0379049
02178945175), (831, 0.08908708063747481), (832, 0.0468292905790847), (833,
0.08703882797784893), (834, 0.08908708063747481), (835, 0.0), (836, 0.1305
582419667734), (837, 0.0), (838, 0.04166666666666668), (839, 0.0), (840,
0.08333333333333336), (841, 0.044543540318737404), (842, 0.0), (843, 0.0),
(844, 0.04166666666666668), (845, 0.0), (846, 0.0), (847, 0.0), (848, 0.04
351941398892446), (849, 0.0), (850, 0.08164965809277262), (851, 0.04003203
845127179), (852, 0.0), (853, 0.0), (854, 0.04166666666666668), (855, 0.
0), (856, 0.044543540318737404), (857, 0.0), (858, 0.0468292905790847), (8
59, 0.111803398874895), (860, 0.0), (861, 0.08333333333333336), (862, 0.0
8512565307587487), (863, 0.044543540318737404), (864, 0.0870388279778489
3), (865, 0.0), (866, 0.051031036307982884), (867, 0.0), (868, 0.0), (869,
0.045643546458763846), (870, 0.1543033499620919), (871, 0.0435194139889244
6), (872, 0.0), (873, 0.08006407690254358), (874, 0.0), (875, 0.0), (876,
0.08512565307587487), (877, 0.042562826537937436), (878, 0.0), (879, 0.0),
(880, 0.044543540318737404), (881, 0.0), (882, 0.0), (883, 0.0), (884, 0.
0), (885, 0.0), (886, 0.0), (887, 0.0), (888, 0.1336306209562122), (889,
0.0), (890, 0.0), (891, 0.0), (892, 0.04351941398892446), (893, 0.08908708
063747481), (894, 0.1276884796138123), (895, 0.0), (896, 0.0), (897, 0.0),
(898, 0.08703882797784893), (899, 0.1276884796138123), (900, 0.0), (901,
0.042562826537937436), (902, 0.0), (903, 0.037904902178945175), (904, 0.
0), (905, 0.0), (906, 0.0), (907, 0.0), (908, 0.0), (909, 0.0), (910, 0.
0), (911, 0.04082482904638631), (912, 0.0), (913, 0.051031036307982884),
(914, 0.04166666666666668), (915, 0.0), (916, 0.0), (917, 0.044543540318737
404), (918, 0.0), (919, 0.044543540318737404), (920, 0.0816496580927726
2), (921, 0.0), (922, 0.11785113019775793), (923, 0.0), (924, 0.0), (925,
0.08164965809277262), (926, 0.04351941398892446), (927, 0.0), (928, 0.0),
(929, 0.08512565307587487), (930, 0.04082482904638631), (931, 0.0851256530
7587487), (932, 0.08703882797784893), (933, 0.08333333333333336), (934, 0.
042562826537937436), (935, 0.08006407690254358), (936, 0.0), (937, 0.08512
565307587487), (938, 0.0), (939, 0.07580980435789035), (940, 0.0), (941,
0.04003203845127179), (942, 0.08164965809277262), (943, 0.0), (944, 0.0408
2482904638631), (945, 0.08908708063747481), (946, 0.037267799624996496),
(947, 0.042562826537937436), (948, 0.0), (949, 0.042562826537937436), (95
0, 0.08703882797784893), (951, 0.04351941398892446), (952, 0.0445435403187

37404), (953, 0.042562826537937436), (954, 0.044543540318737404), (955, 0.042562826537937436), (956, 0.04351941398892446), (957, 0.0), (958, 0.0), (959, 0.042562826537937436), (960, 0.044543540318737404), (961, 0.042562826537937436), (962, 0.11785113019775793), (963, 0.042562826537937436), (964, 0.0), (965, 0.044543540318737404), (966, 0.10540925533894598), (967, 0.051031036307982884), (968, 0.0), (969, 0.08908708063747481), (970, 0.09128709291752769), (971, 0.03928371006591931), (972, 0.11785113019775793), (973, 0.03666177875533833), (974, 0.0), (975, 0.0), (976, 0.08164965809277262), (977, 0.1118033988749895), (978, 0.12500000000000003), (979, 0.04166666666666668), (980, 0.0), (981, 0.04950737714883372), (982, 0.04082482904638631), (983, 0.037904902178945175), (984, 0.17025130615174974), (985, 0.08703882797784893), (986, 0.0), (987, 0.0), (988, 0.042562826537937436), (989, 0.08333333333333336), (990, 0.037267799624996496), (991, 0.0), (992, 0.09128709291752769), (993, 0.044543540318737404), (994, 0.04082482904638631), (995, 0.04351941398892446), (996, 0.0), (997, 0.0), (998, 0.0), (999, 0.0), (1000, 0.08164965809277262), (1001, 0.07856742013183862), (1002, 0.045643546458763846), (1003, 0.07453559924999299), (1004, 0.1276884796138123), (1005, 0.0), (1006, 0.1276884796138123), (1007, 0.0), (1008, 0.04003203845127179), (1009, 0.0), (1010, 0.0), (1011, 0.0), (1012, 0.08703882797784893), (1013, 0.0), (1014, 0.044543540318737404), (1015, 0.0), (1016, 0.07856742013183862), (1017, 0.1118033988749895), (1018, 0.0), (1019, 0.08006407690254358), (1020, 0.08908708063747481), (1021, 0.0), (1022, 0.0), (1023, 0.04003203845127179), (1024, 0.10825317547305485), (1025, 0.08512565307587487), (1026, 0.0), (1027, 0.08333333333333336), (1028, 0.15161960871578 07), (1029, 0.037904902178945175), (1030, 0.0), (1031, 0.04082482904638631), (1032, 0.0), (1033, 0.0), (1034, 0.08006407690254358), (1035, 0.08333333333333336), (1036, 0.0), (1037, 0.0), (1038, 0.0), (1039, 0.0), (1040, 0.03928371006591931), (1041, 0.042562826537937436), (1042, 0.0), (1043, 0.045643546458763846), (1044, 0.07715167498104596), (1045, 0.042562826537937436), (1046, 0.042562826537937436), (1047, 0.0), (1048, 0.04003203845127179), (1049, 0.04351941398892446), (1050, 0.04082482904638631), (1051, 0.08908708063747481), (1052, 0.07580980435789035), (1053, 0.0), (1054, 0.0), (1055, 0.0), (1056, 0.044543540318737404), (1057, 0.0), (1058, 0.08703882797784893), (1059, 0.04351941398892446), (1060, 0.0), (1061, 0.037904902178945175), (1062, 0.08703882797784893), (1063, 0.08164965809277262), (1064, 0.09622504486493764), (1065, 0.0), (1066, 0.0), (1067, 0.03928371006591931), (1068, 0.04166666666666668), (1069, 0.0), (1070, 0.04351941398892446), (1071, 0.0), (1072, 0.05270462766947299), (1073, 0.08164965809277262), (1074, 0.08512565307587487), (1075, 0.037267799624996496), (1076, 0.08703882797784893), (1077, 0.08908708063747481), (1078, 0.12009611535381537), (1079, 0.08512565307587487), (1080, 0.04082482904638631), (1081, 0.0), (1082, 0.11371470653683552), (1083, 0.08703882797784893), (1084, 0.11785113019775793), (1085, 0.08164965809277262), (1086, 0.11572751247156893), (1087, 0.0), (1088, 0.0), (1089, 0.08703882797784893), (1090, 0.0), (1091, 0.04351941398892446), (1092, 0.0), (1093, 0.08164965809277262), (1094, 0.0), (1095, 0.08512565307587487), (1096, 0.044543540318737404), (1097, 0.051031036307982884), (1098, 0.0), (1099, 0.054554472558998104), (1100, 0.08164965809277262), (1101, 0.04082482904638631), (1102, 0.0), (1103, 0.12500000000000003), (1104, 0.04351941398892446), (1105, 0.0), (1106, 0.11785113019775793), (1107, 0.0), (1108, 0.0), (1109, 0.044543540318737404), (1110, 0.1305582419667734), (1111, 0.07715167498104596), (1112, 0.0), (1113, 0.0), (1114, 0.0468292905790847), (1115, 0.0), (1116, 0.0), (1117, 0.0), (1118, 0.044543540318737404), (1119, 0.04003203845127179), (1120, 0.08512565307587487), (1121, 0.0), (1122, 0.0), (1123, 0.042562826537937436), (1124, 0.04351941398892446), (1125, 0.0), (1126, 0.0), (1127, 0.042562826537937436), (1128, 0.0), (1129, 0.0), (1130, 0.0), (1131, 0.12500000000000003), (1132, 0.08512565307587487), (1133, 0.042562826537937436), (1134, 0.07453559924999299), (1135, 0.045643546458763846), (1136, 0.1543033499620919), (1137, 0.04082482904638631), (1138, 0.03928371006591931), (1139, 0.12500000000000003), (1140, 0.04003203845127179), (1141, 0.0), (1142, 0.04082482904638631), (1143, 0.08908708063747481), (1144, 0.12247448713915893), (1145, 0.11180339887498

95), (1146, 0.03928371006591931), (1147, 0.0), (1148, 0.0), (1149, 0.0), (1150, 0.0), (1151, 0.0), (1152, 0.04003203845127179), (1153, 0.04003203845127179), (1154, 0.0), (1155, 0.08164965809277262), (1156, 0.0), (1157, 0.0), (1158, 0.04082482904638631), (1159, 0.0), (1160, 0.0), (1161, 0.09128709291752769), (1162, 0.0), (1163, 0.0), (1164, 0.08703882797784893), (1165, 0.04082482904638631), (1166, 0.0), (1167, 0.0), (1168, 0.0), (1169, 0.0), (1170, 0.0), (1171, 0.0), (1172, 0.044543540318737404), (1173, 0.0), (1174, 0.03450327796711771), (1175, 0.07580980435789035), (1176, 0.08164965809277262), (1177, 0.06711560552140244), (1178, 0.04351941398892446), (1179, 0.0), (1180, 0.0), (1181, 0.04082482904638631), (1182, 0.0), (1183, 0.04950737714883372), (1184, 0.0), (1185, 0.0), (1186, 0.03553345272593508), (1187, 0.0), (1188, 0.03857583749052298), (1189, 0.0), (1190, 0.0), (1191, 0.1928791874526149), (1192, 0.14664711502135333), (1193, 0.14213381090374033), (1194, 0.0), (1195, 0.04166666666666668), (1196, 0.0), (1197, 0.0), (1198, 0.04003203845127179), (1199, 0.16329931618554525), (1200, 0.14907119849998599), (1201, 0.07856742013183862), (1202, 0.0), (1203, 0.0), (1204, 0.0), (1205, 0.0), (1206, 0.045643546458763846), (1207, 0.04003203845127179), (1208, 0.0), (1209, 0.0), (1210, 0.0), (1211, 0.0), (1212, 0.044543540318737404), (1213, 0.08333333333333336), (1214, 0.0), (1215, 0.03857583749052298), (1216, 0.07856742013183862), (1217, 0.037267799624996496), (1218, 0.04351941398892446), (1219, 0.08908708063747481), (1220, 0.07856742013183862), (1221, 0.044543540318737404), (1222, 0.0), (1223, 0.0), (1224, 0.04166666666666668), (1225, 0.0), (1226, 0.04003203845127179), (1227, 0.0), (1228, 0.0), (1229, 0.0), (1230, 0.12009611535381537), (1231, 0.08333333333333336), (1232, 0.0), (1233, 0.08512565307587487), (1234, 0.12247448713915893), (1235, 0.0), (1236, 0.0), (1237, 0.0), (1238, 0.08908708063747481), (1239, 0.16329931618554525), (1240, 0.04166666666666668), (1241, 0.0), (1242, 0.0), (1243, 0.0), (1244, 0.0), (1245, 0.04166666666666668), (1246, 0.04811252243246882), (1247, 0.0), (1248, 0.0), (1249, 0.0936585811581694), (1250, 0.0), (1251, 0.0), (1252, 0.0), (1253, 0.04950737714883372), (1254, 0.042562826537937436), (1255, 0.0), (1256, 0.08908708063747481), (1257, 0.044543540318737404), (1258, 0.0), (1259, 0.04811252243246882), (1260, 0.0), (1261, 0.0), (1262, 0.0), (1263, 0.045643546458763846), (1264, 0.0), (1265, 0.0), (1266, 0.1305582419667734), (1267, 0.05270462766947299), (1268, 0.0), (1269, 0.05270462766947299), (1270, 0.04003203845127179), (1271, 0.04351941398892446), (1272, 0.045643546458763846), (1273, 0.09901475429766744), (1274, 0.07216878364870323), (1275, 0.0), (1276, 0.0), (1277, 0.13693063937629155), (1278, 0.04950737714883372), (1279, 0.08333333333333336), (1280, 0.0), (1281, 0.03928371006591931), (1282, 0.08333333333333336), (1283, 0.0), (1284, 0.042562826537937436), (1285, 0.09901475429766744), (1286, 0.07715167498104596), (1287, 0.08512565307587487), (1288, 0.054554472558998104), (1289, 0.09622504486493764), (1290, 0.08164965809277262), (1291, 0.04351941398892446), (1292, 0.04166666666666668), (1293, 0.0), (1294, 0.08512565307587487), (1295, 0.0), (1296, 0.21650635094610968), (1297, 0.04166666666666668), (1298, 0.08006407690254358), (1299, 0.0), (1300, 0.0), (1301, 0.0), (1302, 0.1336306209562122), (1303, 0.07715167498104596), (1304, 0.03553345272593508), (1305, 0.0), (1306, 0.09901475429766744), (1307, 0.0), (1308, 0.03928371006591931), (1309, 0.0), (1310, 0.04351941398892446), (1311, 0.0), (1312, 0.0), (1313, 0.0), (1314, 0.0), (1315, 0.0), (1316, 0.0), (1317, 0.16012815380508716), (1318, 0.0), (1319, 0.04351941398892446), (1320, 0.17407765595569785), (1321, 0.044543540318737404), (1322, 0.12247448713915893), (1323, 0.0), (1324, 0.09901475429766744), (1325, 0.0), (1326, 0.03928371006591931), (1327, 0.0), (1328, 0.0), (1329, 0.042562826537937436), (1330, 0.0), (1331, 0.08512565307587487), (1332, 0.04003203845127179), (1333, 0.0), (1334, 0.08006407690254358), (1335, 0.0), (1336, 0.0), (1337, 0.08703882797784893), (1338, 0.04003203845127179), (1339, 0.04003203845127179), (1340, 0.042562826537937436), (1341, 0.06019292654288461), (1342, 0.0468292905790847), (1343, 0.08703882797784893), (1344, 0.037904902178945175), (1345, 0.0), (1346, 0.0), (1347, 0.1336306209562122), (1348, 0.08908708063747481), (1349, 0.0), (1350, 0.0468292905790847), (1351, 0.0), (1352, 0.042562826537937436), (1353, 0.0468292905790847), (1354, 0.0), (135

5, 0.0), (1356, 0.0), (1357, 0.051031036307982884), (1358, 0.041666666666
6668), (1359, 0.08164965809277262), (1360, 0.042562826537937436), (1361,
0.07715167498104596), (1362, 0.0), (1363, 0.14213381090374033), (1364, 0.1
1572751247156893), (1365, 0.20016019225635895), (1366, 0.04256282653793743
6), (1367, 0.04082482904638631), (1368, 0.0), (1369, 0.0), (1370, 0.0), (1
371, 0.0), (1372, 0.04166666666666668), (1373, 0.04082482904638631), (137
4, 0.0), (1375, 0.04351941398892446), (1376, 0.0), (1377, 0.04454354031873
7404), (1378, 0.0), (1379, 0.0), (1380, 0.0936585811581694), (1381, 0.0468
292905790847), (1382, 0.037267799624996496), (1383, 0.0), (1384, 0.0), (13
85, 0.0), (1386, 0.045643546458763846), (1387, 0.0), (1388, 0.0), (1389,
0.0), (1390, 0.1276884796138123), (1391, 0.0), (1392, 0.0), (1393, 0.0),
(1394, 0.0), (1395, 0.044543540318737404), (1396, 0.0), (1397, 0.0), (139
8, 0.04811252243246882), (1399, 0.08164965809277262), (1400, 0.0), (1401,
0.0), (1402, 0.08703882797784893), (1403, 0.0), (1404, 0.1020620726159657
5), (1405, 0.08164965809277262), (1406, 0.0), (1407, 0.0), (1408, 0.120096
11535381537), (1409, 0.0), (1410, 0.0), (1411, 0.044543540318737404), (141
2, 0.037904902178945175), (1413, 0.0), (1414, 0.0), (1415, 0.0), (1416, 0.
0936585811581694), (1417, 0.04811252243246882), (1418, 0.0), (1419, 0.0870
3882797784893), (1420, 0.1276884796138123), (1421, 0.0), (1422, 0.0), (142
3, 0.04351941398892446), (1424, 0.0), (1425, 0.045643546458763846), (1426,
0.045643546458763846), (1427, 0.0), (1428, 0.042562826537937436), (1429,
0.0), (1430, 0.0), (1431, 0.03857583749052298), (1432, 0.0408248290463863
1), (1433, 0.044543540318737404), (1434, 0.0468292905790847), (1435, 0.0),
(1436, 0.0), (1437, 0.044543540318737404), (1438, 0.1276884796138123), (14
39, 0.18042195912175807), (1440, 0.08703882797784893), (1441, 0.0), (1442,
0.0), (1443, 0.08908708063747481), (1444, 0.03928371006591931), (1445, 0.0
8512565307587487), (1446, 0.08006407690254358), (1447, 0.0890870806374748
1), (1448, 0.0468292905790847), (1449, 0.042562826537937436), (1450, 0.041
66666666666668), (1451, 0.044543540318737404), (1452, 0.0385758374905229
8), (1453, 0.09128709291752769), (1454, 0.03857583749052298), (1455, 0.045
643546458763846), (1456, 0.04351941398892446), (1457, 0.0435194139889244
6), (1458, 0.0), (1459, 0.04082482904638631), (1460, 0.04166666666666668),
(1461, 0.04166666666666668), (1462, 0.04082482904638631), (1463, 0.0785674
2013183862), (1464, 0.0), (1465, 0.04003203845127179), (1466, 0.0495073771
4883372), (1467, 0.0), (1468, 0.08006407690254358), (1469, 0.0468292905790
847), (1470, 0.044543540318737404), (1471, 0.0468292905790847), (1472, 0.0
4166666666666668), (1473, 0.0), (1474, 0.04950737714883372), (1475, 0.0435
1941398892446), (1476, 0.0), (1477, 0.0), (1478, 0.042562826537937436), (1
479, 0.04811252243246882), (1480, 0.0), (1481, 0.0936585811581694), (1482,
0.04003203845127179), (1483, 0.03928371006591931), (1484, 0.04256282653793
7436), (1485, 0.04351941398892446), (1486, 0.04351941398892446), (1487, 0.
0), (1488, 0.04811252243246882), (1489, 0.0), (1490, 0.11371470653683552),
(1491, 0.042562826537937436), (1492, 0.0), (1493, 0.0), (1494, 0.041666666
66666668), (1495, 0.04166666666666668), (1496, 0.04351941398892446), (149
7, 0.04003203845127179), (1498, 0.0), (1499, 0.0), (1500, 0.04256282653793
7436), (1501, 0.0), (1502, 0.0), (1503, 0.04950737714883372), (1504, 0.0),
(1505, 0.04351941398892446), (1506, 0.044543540318737404), (1507, 0.085125
65307587487), (1508, 0.0), (1509, 0.045643546458763846), (1510, 0.04082482
904638631), (1511, 0.0), (1512, 0.0), (1513, 0.04003203845127179), (1514,
0.0936585811581694), (1515, 0.04082482904638631), (1516, 0.0), (1517, 0.04
166666666666668), (1518, 0.07715167498104596), (1519, 0.04454354031873740
4), (1520, 0.0), (1521, 0.04351941398892446), (1522, 0.0), (1523, 0.040032
03845127179), (1524, 0.04811252243246882), (1525, 0.0), (1526, 0.0), (152
7, 0.0), (1528, 0.0468292905790847), (1529, 0.0), (1530, 0.0), (1531, 0.07
580980435789035), (1532, 0.0), (1533, 0.042562826537937436), (1534, 0.0),
(1535, 0.0), (1536, 0.0), (1537, 0.0), (1538, 0.03666177875533833), (1539,
0.0), (1540, 0.08006407690254358), (1541, 0.0), (1542, 0.0833333333333333
6), (1543, 0.08333333333333336), (1544, 0.0), (1545, 0.0), (1546, 0.127688
4796138123), (1547, 0.0), (1548, 0.0), (1549, 0.04166666666666668), (1550,
0.044543540318737404), (1551, 0.0), (1552, 0.0), (1553, 0.0), (1554, 0.0),
(1555, 0.0), (1556, 0.07332355751067667), (1557, 0.0), (1558, 0.0), (1559,

0.04351941398892446), (1560, 0.0), (1561, 0.0), (1562, 0.0495073771488337
2), (1563, 0.0), (1564, 0.03450327796711771), (1565, 0.0), (1566, 0.0), (1
567, 0.0), (1568, 0.04166666666666668), (1569, 0.0468292905790847), (1570,
0.042562826537937436), (1571, 0.0), (1572, 0.0), (1573, 0.0400320384512717
9), (1574, 0.0), (1575, 0.0), (1576, 0.0), (1577, 0.17817416127494962), (1
578, 0.04166666666666668), (1579, 0.04351941398892446), (1580, 0.048112522
43246882), (1581, 0.0), (1582, 0.0), (1583, 0.14664711502135333), (1584,
0.04351941398892446), (1585, 0.0), (1586, 0.08333333333333336), (1587, 0.0
3928371006591931), (1588, 0.0), (1589, 0.04351941398892446), (1590, 0.0721
6878364870323), (1591, 0.0), (1592, 0.09128709291752769), (1593, 0.0), (15
94, 0.042562826537937436), (1595, 0.0), (1596, 0.08512565307587487), (159
7, 0.05270462766947299), (1598, 0.0), (1599, 0.044543540318737404), (1600,
0.0), (1601, 0.0), (1602, 0.04811252243246882), (1603, 0.1250000000000000
3), (1604, 0.0), (1605, 0.0), (1606, 0.0), (1607, 0.03857583749052298), (1
608, 0.04003203845127179), (1609, 0.04166666666666668), (1610, 0.085125653
07587487), (1611, 0.08512565307587487), (1612, 0.07856742013183862), (161
3, 0.0), (1614, 0.0), (1615, 0.1336306209562122), (1616, 0.043519413988924
46), (1617, 0.08006407690254358), (1618, 0.0), (1619, 0.0), (1620, 0.0),
(1621, 0.0), (1622, 0.04003203845127179), (1623, 0.0), (1624, 0.0870388279
7784893), (1625, 0.04082482904638631), (1626, 0.07580980435789035), (1627,
0.044543540318737404), (1628, 0.09901475429766744), (1629, 0.0), (1630, 0.
0936585811581694), (1631, 0.04950737714883372), (1632, 0.0), (1633, 0.0445
43540318737404), (1634, 0.0), (1635, 0.042562826537937436), (1636, 0.04256
2826537937436), (1637, 0.08006407690254358), (1638, 0.0), (1639, 0.0), (16
40, 0.0), (1641, 0.0), (1642, 0.04082482904638631), (1643, 0.0425628265379
37436), (1644, 0.0), (1645, 0.08703882797784893), (1646, 0.0), (1647, 0.04
166666666666668), (1648, 0.0), (1649, 0.0), (1650, 0.037904902178945175),
 (1651, 0.04082482904638631), (1652, 0.12500000000000003), (1653, 0.043519
41398892446), (1654, 0.08164965809277262), (1655, 0.0), (1656, 0.0), (165
7, 0.08164965809277262), (1658, 0.09128709291752769), (1659, 0.0), (1660,
 0.0), (1661, 0.04351941398892446), (1662, 0.0), (1663, 0.0), (1664, 0.039
28371006591931), (1665, 0.0), (1666, 0.04166666666666668), (1667, 0.093658
5811581694), (1668, 0.08512565307587487), (1669, 0.08333333333333336), (16
70, 0.08512565307587487), (1671, 0.08164965809277262), (1672, 0.0733235575
1067667), (1673, 0.0), (1674, 0.0), (1675, 0.09622504486493764), (1676, 0.
0), (1677, 0.0), (1678, 0.0), (1679, 0.0), (1680, 0.08703882797784893), (1
681, 0.0), (1682, 0.08908708063747481), (1683, 0.0), (1684, 0.0), (1685,
 0.0), (1686, 0.16012815380508716), (1687, 0.0), (1688, 0.0), (1689, 0.042
562826537937436), (1690, 0.0), (1691, 0.0), (1692, 0.0), (1693, 0.0), (169
4, 0.042562826537937436), (1695, 0.1305582419667734), (1696, 0.0), (1697,
 0.08512565307587487), (1698, 0.0), (1699, 0.042562826537937436), (1700,
 0.0), (1701, 0.05270462766947299), (1702, 0.044543540318737404), (1703,
 0.04351941398892446), (1704, 0.0), (1705, 0.0), (1706, 0.0), (1707, 0.085
12565307587487), (1708, 0.07332355751067667), (1709, 0.0), (1710, 0.0), (1
711, 0.0), (1712, 0.0), (1713, 0.08333333333333336), (1714, 0.0), (1715,
 0.03666177875533833), (1716, 0.0), (1717, 0.04166666666666668), (1718, 0.
042562826537937436), (1719, 0.1928791874526149), (1720, 0.0771516749810459
6), (1721, 0.1118033988749895), (1722, 0.0), (1723, 0.0), (1724, 0.0), (17
25, 0.04003203845127179), (1726, 0.044543540318737404), (1727, 0.045643546
458763846), (1728, 0.04351941398892446), (1729, 0.0), (1730, 0.0), (1731,
 0.03857583749052298), (1732, 0.0), (1733, 0.04950737714883372), (1734, 0.
08908708063747481), (1735, 0.037904902178945175), (1736, 0.0), (1737, 0.
0), (1738, 0.0), (1739, 0.04950737714883372), (1740, 0.1516196087157807),
 (1741, 0.051031036307982884), (1742, 0.044543540318737404), (1743, 0.0833
3333333333336), (1744, 0.0), (1745, 0.0), (1746, 0.0), (1747, 0.0456435464
58763846), (1748, 0.0), (1749, 0.08164965809277262), (1750, 0.083333333333
33336), (1751, 0.0), (1752, 0.0), (1753, 0.04003203845127179), (1754, 0.04
003203845127179), (1755, 0.0), (1756, 0.0), (1757, 0.042562826537937436),
 (1758, 0.0), (1759, 0.04351941398892446), (1760, 0.1336306209562122), (17
61, 0.08333333333333336), (1762, 0.0), (1763, 0.0), (1764, 0.1443375672974
0646), (1765, 0.04351941398892446), (1766, 0.0), (1767, 0.0), (1768, 0.043

51941398892446), (1769, 0.044543540318737404), (1770, 0.0), (1771, 0.14048
78717372541), (1772, 0.0), (1773, 0.04082482904638631), (1774, 0.0), (177
5, 0.0), (1776, 0.0), (1777, 0.0936585811581694), (1778, 0.0), (1779, 0.
0), (1780, 0.03928371006591931), (1781, 0.037904902178945175), (1782, 0.
0), (1783, 0.045643546458763846), (1784, 0.042562826537937436), (1785, 0.
0), (1786, 0.0), (1787, 0.0), (1788, 0.0), (1789, 0.0), (1790, 0.077151674
98104596), (1791, 0.0481252243246882), (1792, 0.042562826537937436), (179
3, 0.0), (1794, 0.04351941398892446), (1795, 0.08006407690254358), (1796,
 0.06019292654288461), (1797, 0.0), (1798, 0.0), (1799, 0.0), (1800, 0.0),
(1801, 0.0), (1802, 0.12247448713915893), (1803, 0.0), (1804, 0.0435194139
8892446), (1805, 0.0), (1806, 0.0), (1807, 0.044543540318737404), (1808,
 0.0), (1809, 0.0), (1810, 0.0), (1811, 0.0), (1812, 0.1336306209562122),
 (1813, 0.0), (1814, 0.04003203845127179), (1815, 0.045643546458763846),
 (1816, 0.0), (1817, 0.037904902178945175), (1818, 0.0), (1819, 0.08703882
797784893), (1820, 0.0), (1821, 0.08006407690254358), (1822, 0.08908708063
747481), (1823, 0.0), (1824, 0.0), (1825, 0.08703882797784893), (1826, 0.0
4351941398892446), (1827, 0.12500000000000003), (1828, 0.0), (1829, 0.0),
 (1830, 0.034020690871988585), (1831, 0.0), (1832, 0.0), (1833, 0.04454354
0318737404), (1834, 0.054554472558998104), (1835, 0.08333333333333336), (1
836, 0.08164965809277262), (1837, 0.042562826537937436), (1838, 0.0), (183
9, 0.04351941398892446), (1840, 0.04082482904638631), (1841, 0.04256282653
7937436), (1842, 0.08512565307587487), (1843, 0.0), (1844, 0.0435194139889
2446), (1845, 0.08512565307587487), (1846, 0.0), (1847, 0.0), (1848, 0.043
51941398892446), (1849, 0.17025130615174974), (1850, 0.04256282653793743
6), (1851, 0.1305582419667734), (1852, 0.0), (1853, 0.04351941398892446),
 (1854, 0.1543033499620919), (1855, 0.0), (1856, 0.04166666666666668), (18
57, 0.0), (1858, 0.042562826537937436), (1859, 0.042562826537937436), (186
0, 0.0468292905790847), (1861, 0.0936585811581694), (1862, 0.0), (1863, 0.
0), (1864, 0.0), (1865, 0.0), (1866, 0.044543540318737404), (1867, 0.0),
 (1868, 0.045643546458763846), (1869, 0.0), (1870, 0.0), (1871, 0.04351941
398892446), (1872, 0.08512565307587487), (1873, 0.0), (1874, 0.12247448713
915893), (1875, 0.0), (1876, 0.0), (1877, 0.07580980435789035), (1878, 0.1
118033988749895), (1879, 0.0), (1880, 0.04003203845127179), (1881, 0.0),
 (1882, 0.044543540318737404), (1883, 0.0), (1884, 0.0), (1885, 0.0), (188
6, 0.0), (1887, 0.0), (1888, 0.0), (1889, 0.04166666666666668), (1890, 0.
0), (1891, 0.04351941398892446), (1892, 0.07715167498104596), (1893, 0.045
643546458763846), (1894, 0.04351941398892446), (1895, 0.0), (1896, 0.04811
252243246882), (1897, 0.044543540318737404), (1898, 0.0), (1899, 0.0), (19
00, 0.08333333333333336), (1901, 0.0), (1902, 0.04351941398892446), (1903,
0.0), (1904, 0.0), (1905, 0.0), (1906, 0.0), (1907, 0.07332355751067667),
 (1908, 0.045643546458763846), (1909, 0.0), (1910, 0.09128709291752769),
 (1911, 0.0), (1912, 0.0), (1913, 0.0), (1914, 0.04166666666666668), (191
5, 0.0), (1916, 0.0), (1917, 0.0), (1918, 0.1336306209562122), (1919, 0.
0), (1920, 0.044543540318737404), (1921, 0.0), (1922, 0.0), (1923, 0.0),
 (1924, 0.0), (1925, 0.0), (1926, 0.0), (1927, 0.0), (1928, 0.0), (1929,
 0.0), (1930, 0.044543540318737404), (1931, 0.045643546458763846), (1932,
 0.23145502494313788), (1933, 0.0468292905790847), (1934, 0.0), (1935, 0.
0), (1936, 0.08703882797784893), (1937, 0.05103103036307982884), (1938, 0.
0), (1939, 0.12009611535381537), (1940, 0.0), (1941, 0.0), (1942, 0.089087
08063747481), (1943, 0.0), (1944, 0.0), (1945, 0.0), (1946, 0.0), (1947,
 0.0), (1948, 0.0), (1949, 0.0), (1950, 0.03450327796711771), (1951, 0.0),
(1952, 0.04003203845127179), (1953, 0.08908708063747481), (1954, 0.0468292
905790847), (1955, 0.044543540318737404), (1956, 0.042562826537937436), (1
957, 0.0), (1958, 0.044543540318737404), (1959, 0.037904902178945175), (19
60, 0.03928371006591931), (1961, 0.0468292905790847), (1962, 0.05270462766
947299), (1963, 0.0), (1964, 0.0), (1965, 0.0), (1966, 0.0), (1967, 0.1157
2751247156893), (1968, 0.0), (1969, 0.042562826537937436), (1970, 0.037904
902178945175), (1971, 0.0), (1972, 0.0), (1973, 0.08908708063747481), (197
4, 0.0), (1975, 0.0), (1976, 0.045643546458763846), (1977, 0.0710669054518
7017), (1978, 0.09901475429766744), (1979, 0.0), (1980, 0.0), (1981, 0.040
82482904638631), (1982, 0.0), (1983, 0.0), (1984, 0.08512565307587487), (1

985, 0.0), (1986, 0.04811252243246882), (1987, 0.08908708063747481), (198
8, 0.08006407690254358), (1989, 0.0), (1990, 0.08333333333333336), (1991,
0.042562826537937436), (1992, 0.0), (1993, 0.04166666666666668), (1994,
0.0), (1995, 0.04166666666666668), (1996, 0.0), (1997, 0.0), (1998, 0.044
543540318737404), (1999, 0.12247448713915893), (2000, 0.0), (2001, 0.05270
462766947299), (2002, 0.044543540318737404), (2003, 0.04082482904638631),
(2004, 0.0), (2005, 0.0), (2006, 0.0), (2007, 0.042562826537937436), (200
8, 0.04003203845127179), (2009, 0.0), (2010, 0.0), (2011, 0.0), (2012, 0.0
4351941398892446), (2013, 0.04082482904638631), (2014, 0.0), (2015, 0.0),
(2016, 0.036084391824351615), (2017, 0.03928371006591931), (2018, 0.0),
(2019, 0.04003203845127179), (2020, 0.04166666666666668), (2021, 0.0), (2
022, 0.0), (2023, 0.044543540318737404), (2024, 0.0), (2025, 0.0), (2026,
0.04003203845127179), (2027, 0.0), (2028, 0.0), (2029, 0.1702513061517497
4), (2030, 0.0), (2031, 0.045643546458763846), (2032, 0.0435194139889244
6), (2033, 0.0), (2034, 0.051031036307982884), (2035, 0.0), (2036, 0.0),
(2037, 0.0), (2038, 0.0), (2039, 0.0700140042014005), (2040, 0.0785674201
3183862), (2041, 0.0), (2042, 0.0), (2043, 0.03928371006591931), (2044, 0.
0), (2045, 0.0), (2046, 0.08006407690254358), (2047, 0.04564354645876384
6), (2048, 0.0), (2049, 0.0), (2050, 0.04351941398892446), (2051, 0.0), (2
052, 0.0), (2053, 0.0), (2054, 0.04166666666666668), (2055, 0.046829290579
0847), (2056, 0.0), (2057, 0.09128709291752769), (2058, 0.0), (2059, 0.0),
(2060, 0.037904902178945175), (2061, 0.042562826537937436), (2062, 0.0),
(2063, 0.0), (2064, 0.03857583749052298), (2065, 0.0), (2066, 0.078567420
13183862), (2067, 0.037904902178945175), (2068, 0.03500700210070025), (206
9, 0.1276884796138123), (2070, 0.0), (2071, 0.0), (2072, 0.044543540318737
404), (2073, 0.0), (2074, 0.042562826537937436), (2075, 0.0456435464587638
46), (2076, 0.0), (2077, 0.04003203845127179), (2078, 0.0), (2079, 0.0),
(2080, 0.0), (2081, 0.0), (2082, 0.0), (2083, 0.0), (2084, 0.040032038451
27179), (2085, 0.1305582419667734), (2086, 0.03928371006591931), (2087, 0.
0), (2088, 0.044543540318737404), (2089, 0.12500000000000003), (2090, 0.
0), (2091, 0.04082482904638631), (2092, 0.0), (2093, 0.04454354031873740
4), (2094, 0.0), (2095, 0.04166666666666668), (2096, 0.0), (2097, 0.041666
66666666668), (2098, 0.0), (2099, 0.0), (2100, 0.08908708063747481), (210
1, 0.037267799624996496), (2102, 0.042562826537937436), (2103, 0.080064076
90254358), (2104, 0.0), (2105, 0.0), (2106, 0.036084391824351615), (2107,
0.04811252243246882), (2108, 0.04082482904638631), (2109, 0.0), (2110, 0.
0), (2111, 0.04082482904638631), (2112, 0.0), (2113, 0.04564354645876384
6), (2114, 0.0936585811581694), (2115, 0.0), (2116, 0.04351941398892446),
(2117, 0.0), (2118, 0.07715167498104596), (2119, 0.0), (2120, 0.0), (212
1, 0.04166666666666668), (2122, 0.15811388300841897), (2123, 0.0), (2124,
0.0), (2125, 0.0), (2126, 0.0), (2127, 0.07856742013183862), (2128, 0.0),
(2129, 0.08164965809277262), (2130, 0.0), (2131, 0.0), (2132, 0.0), (2133,
0.08006407690254358), (2134, 0.08164965809277262), (2135, 0.0), (2136, 0.1
928791874526149), (2137, 0.0), (2138, 0.0), (2139, 0.0), (2140, 0.04682929
05790847), (2141, 0.0), (2142, 0.0468292905790847), (2143, 0.0), (2144, 0.
0), (2145, 0.04351941398892446), (2146, 0.04811252243246882), (2147, 0.0),
(2148, 0.0), (2149, 0.07715167498104596), (2150, 0.0), (2151, 0.0435194139
8892446), (2152, 0.0), (2153, 0.0), (2154, 0.0468292905790847), (2155, 0.0
8512565307587487), (2156, 0.16329931618554525), (2157, 0.1250000000000000
3), (2158, 0.0), (2159, 0.04166666666666668), (2160, 0.0), (2161, 0.091287
09291752769), (2162, 0.0), (2163, 0.12247448713915893), (2164, 0.0), (216
5, 0.0), (2166, 0.042562826537937436), (2167, 0.08703882797784893), (2168,
0.0), (2169, 0.07856742013183862), (2170, 0.0), (2171, 0.0), (2172, 0.0962
2504486493764), (2173, 0.0), (2174, 0.0), (2175, 0.08908708063747481), (21
76, 0.0), (2177, 0.0), (2178, 0.04003203845127179), (2179, 0.0), (2180, 0.
0), (2181, 0.04003203845127179), (2182, 0.0), (2183, 0.0), (2184, 0.074535
59924999299), (2185, 0.04166666666666668), (2186, 0.04166666666666668), (2
187, 0.07580980435789035), (2188, 0.04950737714883372), (2189, 0.046829290
5790847), (2190, 0.0), (2191, 0.0), (2192, 0.0), (2193, 0.0), (2194, 0.043
51941398892446), (2195, 0.04166666666666668), (2196, 0.03857583749052298),
(2197, 0.0), (2198, 0.04166666666666668), (2199, 0.0), (2200, 0.0416666666

6666668), (2201, 0.04351941398892446), (2202, 0.0), (2203, 0.0400320384512
7179), (2204, 0.0), (2205, 0.09901475429766744), (2206, 0.0870388279778489
3), (2207, 0.12009611535381537), (2208, 0.0), (2209, 0.08333333333333336),
(2210, 0.0), (2211, 0.0), (2212, 0.04811252243246882), (2213, 0.0), (2214,
0.0468292905790847), (2215, 0.0), (2216, 0.0), (2217, 0.0), (2218, 0.12247
448713915893), (2219, 0.0), (2220, 0.09128709291752769), (2221, 0.04082482
904638631), (2222, 0.04950737714883372), (2223, 0.0), (2224, 0.0), (2225,
 0.0), (2226, 0.0), (2227, 0.0), (2228, 0.0468292905790847), (2229, 0.0400
3203845127179), (2230, 0.0), (2231, 0.051031036307982884), (2232, 0.0), (2
233, 0.0), (2234, 0.0), (2235, 0.0), (2236, 0.0), (2237, 0.089087080637474
81), (2238, 0.08006407690254358), (2239, 0.08333333333333336), (2240, 0.
0), (2241, 0.0), (2242, 0.054554472558998104), (2243, 0.0), (2244, 0.04682
92905790847), (2245, 0.0468292905790847), (2246, 0.0), (2247, 0.0870388279
7784893), (2248, 0.0), (2249, 0.0), (2250, 0.08703882797784893), (2251, 0.
0), (2252, 0.0), (2253, 0.04351941398892446), (2254, 0.0468292905790847),
 (2255, 0.04351941398892446), (2256, 0.0), (2257, 0.0), (2258, 0.043519413
98892446), (2259, 0.0), (2260, 0.04003203845127179), (2261, 0.087038827977
84893), (2262, 0.037904902178945175), (2263, 0.03500700210070025), (2264,
 0.042562826537937436), (2265, 0.0), (2266, 0.0468292905790847), (2267, 0.
0936585811581694), (2268, 0.0468292905790847), (2269, 0.04454354031873740
4), (2270, 0.0468292905790847), (2271, 0.0), (2272, 0.0), (2273, 0.0), (22
74, 0.0), (2275, 0.04351941398892446), (2276, 0.0), (2277, 0.0456435464587
63846), (2278, 0.10825317547305485), (2279, 0.0), (2280, 0.0), (2281, 0.
0), (2282, 0.044543540318737404), (2283, 0.0), (2284, 0.0), (2285, 0.04166
666666666668), (2286, 0.0), (2287, 0.0), (2288, 0.044543540318737404), (22
89, 0.0), (2290, 0.0), (2291, 0.045643546458763846), (2292, 0.0), (2293,
 0.042562826537937436), (2294, 0.08512565307587487), (2295, 0.042562826537
937436), (2296, 0.04082482904638631), (2297, 0.0), (2298, 0.04564354645876
3846), (2299, 0.045643546458763846), (2300, 0.0), (2301, 0.0), (2302, 0.
0), (2303, 0.04811252243246882), (2304, 0.0), (2305, 0.0), (2306, 0.040824
82904638631), (2307, 0.0), (2308, 0.0), (2309, 0.051031036307982884), (231
0, 0.04082482904638631), (2311, 0.04811252243246882), (2312, 0.0), (2313,
 0.04351941398892446), (2314, 0.04082482904638631), (2315, 0.0), (2316, 0.
0), (2317, 0.08908708063747481), (2318, 0.12500000000000003), (2319, 0.0),
(2320, 0.042562826537937436), (2321, 0.0), (2322, 0.0), (2323, 0.0), (232
4, 0.0), (2325, 0.0), (2326, 0.0), (2327, 0.08164965809277262), (2328, 0.
0), (2329, 0.08512565307587487), (2330, 0.04166666666666668), (2331, 0.0),
(2332, 0.0), (2333, 0.04351941398892446), (2334, 0.08006407690254358), (23
35, 0.0), (2336, 0.03928371006591931), (2337, 0.0), (2338, 0.0425628265379
37436), (2339, 0.0), (2340, 0.04351941398892446), (2341, 0.0), (2342, 0.
0), (2343, 0.1336306209562122), (2344, 0.0), (2345, 0.0), (2346, 0.0785674
2013183862), (2347, 0.0), (2348, 0.08333333333333336), (2349, 0.0758098043
5789035), (2350, 0.0), (2351, 0.0), (2352, 0.09901475429766744), (2353, 0.
08908708063747481), (2354, 0.04082482904638631), (2355, 0.0), (2356, 0.043
51941398892446), (2357, 0.07106690545187017), (2358, 0.0), (2359, 0.0), (2
360, 0.054554472558998104), (2361, 0.0), (2362, 0.0), (2363, 0.04811252243
246882), (2364, 0.0), (2365, 0.0), (2366, 0.042562826537937436), (2367, 0.
0), (2368, 0.0), (2369, 0.0), (2370, 0.0), (2371, 0.03857583749052298), (2
372, 0.08512565307587487), (2373, 0.12500000000000003), (2374, 0.0), (237
5, 0.08512565307587487), (2376, 0.0), (2377, 0.0), (2378, 0.0), (2379, 0.
0), (2380, 0.03928371006591931), (2381, 0.0), (2382, 0.0), (2383, 0.044543
540318737404), (2384, 0.0), (2385, 0.0), (2386, 0.044543540318737404), (23
87, 0.0), (2388, 0.04082482904638631), (2389, 0.044543540318737404), (239
0, 0.2175970699446223), (2391, 0.0), (2392, 0.0), (2393, 0.0), (2394, 0.04
950737714883372), (2395, 0.0), (2396, 0.0), (2397, 0.0), (2398, 0.08512565
307587487), (2399, 0.0), (2400, 0.04351941398892446), (2401, 0.0), (2402,
 0.0), (2403, 0.04003203845127179), (2404, 0.0), (2405, 0.0), (2406, 0.0),
(2407, 0.0), (2408, 0.0), (2409, 0.0), (2410, 0.0), (2411, 0.0), (2412, 0.
04351941398892446), (2413, 0.0), (2414, 0.0), (2415, 0.0), (2416, 0.040032
03845127179), (2417, 0.0), (2418, 0.051031036307982884), (2419, 0.0), (242
0, 0.0), (2421, 0.0), (2422, 0.0), (2423, 0.0), (2424, 0.0), (2425, 0.0456

43546458763846), (2426, 0.0), (2427, 0.0), (2428, 0.0), (2429, 0.048112522
43246882), (2430, 0.0), (2431, 0.0), (2432, 0.0), (2433, 0.122474487139158
93), (2434, 0.08703882797784893), (2435, 0.04003203845127179), (2436, 0.
0), (2437, 0.058925565098878974), (2438, 0.04351941398892446), (2439, 0.04
4543540318737404), (2440, 0.0), (2441, 0.0), (2442, 0.1118033988749895),
 (2443, 0.0), (2444, 0.08006407690254358), (2445, 0.0468292905790847), (24
46, 0.0), (2447, 0.0), (2448, 0.04351941398892446), (2449, 0.0425628265379
37436), (2450, 0.0), (2451, 0.0), (2452, 0.0), (2453, 0.0), (2454, 0.0),
 (2455, 0.0), (2456, 0.0), (2457, 0.08703882797784893), (2458, 0.0), (245
9, 0.0), (2460, 0.0), (2461, 0.0), (2462, 0.0), (2463, 0.0), (2464, 0.0),
 (2465, 0.042562826537937436), (2466, 0.04950737714883372), (2467, 0.0),
 (2468, 0.0), (2469, 0.10350983390135313), (2470, 0.11572751247156893), (2
471, 0.045643546458763846), (2472, 0.0), (2473, 0.0), (2474, 0.09365858115
81694), (2475, 0.0), (2476, 0.19641855032959654), (2477, 0.0), (2478, 0.04
4543540318737404), (2479, 0.0), (2480, 0.03928371006591931), (2481, 0.0),
 (2482, 0.0), (2483, 0.0), (2484, 0.0), (2485, 0.0), (2486, 0.038575837490
52298), (2487, 0.04811252243246882), (2488, 0.0), (2489, 0.0), (2490, 0.12
76884796138123), (2491, 0.1336306209562122), (2492, 0.08703882797784893),
 (2493, 0.0), (2494, 0.0), (2495, 0.0), (2496, 0.0), (2497, 0.0), (2498,
 0.0), (2499, 0.042562826537937436), (2500, 0.0), (2501, 0.0), (2502, 0.
0), (2503, 0.0), (2504, 0.0), (2505, 0.0468292905790847), (2506, 0.0962250
4486493764), (2507, 0.0), (2508, 0.042562826537937436), (2509, 0.0), (251
0, 0.044543540318737404), (2511, 0.0), (2512, 0.0), (2513, 0.0), (2514, 0.
1543033499620919), (2515, 0.08006407690254358), (2516, 0.0), (2517, 0.0),
 (2518, 0.042562826537937436), (2519, 0.0), (2520, 0.0), (2521, 0.18952451
089472588), (2522, 0.0), (2523, 0.04811252243246882), (2524, 0.0), (2525,
 0.03857583749052298), (2526, 0.0), (2527, 0.04082482904638631), (2528, 0.
0), (2529, 0.08333333333333336), (2530, 0.045643546458763846), (2531, 0.04
68292905790847), (2532, 0.0), (2533, 0.0), (2534, 0.04351941398892446), (2
535, 0.0), (2536, 0.0), (2537, 0.0), (2538, 0.0), (2539, 0.042562826537937
436), (2540, 0.08512565307587487), (2541, 0.0), (2542, 0.0345032779671177
1), (2543, 0.04351941398892446), (2544, 0.0), (2545, 0.03790490217894517
5), (2546, 0.0), (2547, 0.0), (2548, 0.0), (2549, 0.0), (2550, 0.041666666
66666668), (2551, 0.0), (2552, 0.08512565307587487), (2553, 0.0), (2554,
 0.0), (2555, 0.0), (2556, 0.07106690545187017), (2557, 0.0), (2558, 0.040
03203845127179), (2559, 0.0), (2560, 0.0), (2561, 0.14664711502135333), (2
562, 0.0), (2563, 0.0), (2564, 0.04082482904638631), (2565, 0.077151674981
04596), (2566, 0.0), (2567, 0.0), (2568, 0.12247448713915893), (2569, 0.04
082482904638631), (2570, 0.03072872744833188), (2571, 0.0435194139889244
6), (2572, 0.0), (2573, 0.08703882797784893), (2574, 0.0), (2575, 0.0), (2
576, 0.0), (2577, 0.09622504486493764), (2578, 0.07715167498104596), (257
9, 0.04166666666666668), (2580, 0.0), (2581, 0.0), (2582, 0.04454354031873
7404), (2583, 0.04811252243246882), (2584, 0.0), (2585, 0.0), (2586, 0.089
08708063747481), (2587, 0.044543540318737404), (2588, 0.0), (2589, 0.0),
 (2590, 0.03666177875533833), (2591, 0.0), (2592, 0.241522945769824), (259
3, 0.0), (2594, 0.0), (2595, 0.0), (2596, 0.04351941398892446), (2597, 0.0
3666177875533833), (2598, 0.09128709291752769), (2599, 0.0), (2600, 0.0),
 (2601, 0.0), (2602, 0.04351941398892446), (2603, 0.0), (2604, 0.0), (260
5, 0.0), (2606, 0.0), (2607, 0.0), (2608, 0.0), (2609, 0.0851256530758748
7), (2610, 0.045643546458763846), (2611, 0.0), (2612, 0.0), (2613, 0.0),
 (2614, 0.15811388300841897), (2615, 0.0), (2616, 0.0), (2617, 0.0), (261
8, 0.0936585811581694), (2619, 0.0), (2620, 0.0), (2621, 0.0), (2622, 0.
0), (2623, 0.03355780276070122), (2624, 0.0), (2625, 0.04256282653793743
6), (2626, 0.0), (2627, 0.11785113019775793), (2628, 0.03666177875533833),
 (2629, 0.0), (2630, 0.08512565307587487), (2631, 0.0), (2632, 0.0), (2633,
 0.12009611535381537), (2634, 0.0), (2635, 0.0), (2636, 0.0), (2637, 0.0481
12252243246882), (2638, 0.0), (2639, 0.04351941398892446), (2640, 0.0816496
5809277262), (2641, 0.04082482904638631), (2642, 0.04166666666666668), (26
43, 0.0), (2644, 0.09622504486493764), (2645, 0.08164965809277262), (2646,
 0.056613851707229795), (2647, 0.0), (2648, 0.0), (2649, 0.0), (2650, 0.044
543540318737404), (2651, 0.04082482904638631), (2652, 0.0495073771488337

2), (2653, 0.04950737714883372), (2654, 0.0), (2655, 0.13693063937629155), (2656, 0.0), (2657, 0.04082482904638631), (2658, 0.0), (2659, 0.04003203845127179), (2660, 0.0), (2661, 0.0), (2662, 0.04811252243246882), (2663, 0.0), (2664, 0.0), (2665, 0.0), (2666, 0.0), (2667, 0.0), (2668, 0.0), (2669, 0.042562826537937436), (2670, 0.0), (2671, 0.04166666666666668), (2672, 0.0), (2673, 0.0), (2674, 0.08512565307587487), (2675, 0.08512565307587487), (2676, 0.0), (2677, 0.0), (2678, 0.08006407690254358), (2679, 0.0), (2680, 0.0), (2681, 0.08164965809277262), (2682, 0.08512565307587487), (2683, 0.08908708063747481), (2684, 0.0), (2685, 0.04166666666666668), (2686, 0.0), (2687, 0.0), (2688, 0.04351941398892446), (2689, 0.0), (2690, 0.04351941398892446), (2691, 0.08164965809277262), (2692, 0.0), (2693, 0.0), (2694, 0.0), (2695, 0.0), (2696, 0.04082482904638631), (2697, 0.0), (2698, 0.0), (2699, 0.0), (2700, 0.0), (2701, 0.0), (2702, 0.044543540318737404), (2703, 0.0), (2704, 0.04166666666666668), (2705, 0.0), (2706, 0.0), (2707, 0.05270462766947299), (2708, 0.10206207261596577), (2709, 0.0), (2710, 0.0), (2711, 0.0), (2712, 0.042562826537937436), (2713, 0.0), (2714, 0.0), (2715, 0.0), (2716, 0.0), (2717, 0.08908708063747481), (2718, 0.0), (2719, 0.0), (2720, 0.0468292905790847), (2721, 0.0), (2722, 0.0), (2723, 0.0), (2724, 0.0), (2725, 0.0), (2726, 0.04082482904638631), (2727, 0.0), (2728, 0.051031036307982884), (2729, 0.0), (2730, 0.0), (2731, 0.0), (2732, 0.0), (2733, 0.0), (2734, 0.0), (2735, 0.0468292905790847), (2736, 0.07715167498104596), (2737, 0.04351941398892446), (2738, 0.0), (2739, 0.0), (2740, 0.0), (2741, 0.0), (2742, 0.0), (2743, 0.042562826537937436), (2744, 0.0), (2745, 0.0), (2746, 0.0), (2747, 0.07580980435789035), (2748, 0.0), (2749, 0.0), (2750, 0.0), (2751, 0.04166666666666668), (2752, 0.0), (2753, 0.04082482904638631), (2754, 0.0), (2755, 0.0468292905790847), (2756, 0.04003203845127179), (2757, 0.07580980435789035), (2758, 0.037904902178945175), (2759, 0.0), (2760, 0.0), (2761, 0.0), (2762, 0.0), (2763, 0.0468292905790847), (2764, 0.0), (2765, 0.045643546458763846), (2766, 0.042562826537937436), (2767, 0.0), (2768, 0.0), (2769, 0.0), (2770, 0.0), (2771, 0.0), (2772, 0.0), (2773, 0.04166666666666668), (2774, 0.0), (2775, 0.042562826537937436), (2776, 0.0468292905790847), (2777, 0.03857583749052298), (2778, 0.0), (2779, 0.0), (2780, 0.045643546458763846), (2781, 0.04351941398892446), (2782, 0.029774566708770687), (2783, 0.0), (2784, 0.03112864031823452), (2785, 0.09622504486493764), (2786, 0.0), (2787, 0.10660035817780525), (2788, 0.0), (2789, 0.0), (2790, 0.22742941307367107), (2791, 0.0), (2792, 0.0), (2793, 0.0), (2794, 0.042562826537937436), (2795, 0.0), (2796, 0.04166666666666668), (2797, 0.042562826537937436), (2798, 0.0), (2799, 0.0), (2800, 0.0), (2801, 0.0), (2802, 0.0), (2803, 0.07332355751067667), (2804, 0.0), (2805, 0.12500000000000003), (2806, 0.06900655593423542), (2807, 0.0), (2808, 0.0), (2809, 0.04351941398892446), (2810, 0.04003203845127179), (2811, 0.0), (2812, 0.08908708063747481), (2813, 0.0), (2814, 0.0), (2815, 0.08164965809277262), (2816, 0.0), (2817, 0.0), (2818, 0.0), (2819, 0.04166666666666668), (2820, 0.0), (2821, 0.0), (2822, 0.0), (2823, 0.04811252243246882), (2824, 0.0), (2825, 0.0), (2826, 0.08333333333333336), (2827, 0.08703882797784893), (2828, 0.0), (2829, 0.04082482904638631), (2830, 0.0), (2831, 0.0), (2832, 0.0), (2833, 0.0), (2834, 0.0), (2835, 0.04082482904638631), (2836, 0.04166666666666668), (2837, 0.0), (2838, 0.0), (2839, 0.0), (2840, 0.0), (2841, 0.0), (2842, 0.0), (2843, 0.0), (2844, 0.0), (2845, 0.0), (2846, 0.08333333333333336), (2847, 0.0), (2848, 0.0), (2849, 0.044543540318737404), (2850, 0.0), (2851, 0.04950737714883372), (2852, 0.0), (2853, 0.044543540318737404), (2854, 0.0), (2855, 0.0), (2856, 0.0), (2857, 0.0468292905790847), (2858, 0.0), (2859, 0.0), (2860, 0.08006407690254358), (2861, 0.0), (2862, 0.042562826537937436), (2863, 0.08333333333333336), (2864, 0.0), (2865, 0.0), (2866, 0.0), (2867, 0.10910894511799621), (2868, 0.042562826537937436), (2869, 0.0), (2870, 0.0), (2871, 0.0), (2872, 0.0), (2873, 0.0), (2874, 0.0), (2875, 0.0468292905790847), (2876, 0.03928371006591931), (2877, 0.0), (2878, 0.05270462766947299), (2879, 0.0), (2880, 0.0), (2881, 0.0), (2882, 0.0), (2883, 0.0), (2884, 0.03666177875533833), (2885, 0.0), (2886, 0.2553769592276246), (2887, 0.0), (2888, 0.0), (2889, 0.0), (2890, 0.0), (2891, 0.0), (2892, 0.0), (2893, 0.0), (289

4, 0.0), (2895, 0.0), (2896, 0.0), (2897, 0.0), (2898, 0.0), (2899, 0.0962
2504486493764), (2900, 0.0), (2901, 0.0), (2902, 0.04811252243246882), (29
03, 0.0), (2904, 0.0), (2905, 0.0), (2906, 0.0), (2907, 0.0), (2908, 0.0),
(2909, 0.0), (2910, 0.0), (2911, 0.04166666666666668), (2912, 0.0870388279
7784893), (2913, 0.0), (2914, 0.07856742013183862), (2915, 0.0425628265379
37436), (2916, 0.03928371006591931), (2917, 0.0), (2918, 0.046829290579084
7), (2919, 0.0), (2920, 0.0), (2921, 0.051031036307982884), (2922, 0.0),
 (2923, 0.0), (2924, 0.0), (2925, 0.0), (2926, 0.0), (2927, 0.0), (2928,
 0.0), (2929, 0.04166666666666668), (2930, 0.051031036307982884), (2931,
 0.0468292905790847), (2932, 0.0), (2933, 0.054554472558998104), (2934, 0.
0), (2935, 0.0), (2936, 0.0), (2937, 0.0), (2938, 0.0), (2939, 0.0), (294
0, 0.043519413988924446), (2941, 0.12009611535381537), (2942, 0.0), (2943,
 0.0), (2944, 0.09128709291752769), (2945, 0.0), (2946, 0.0), (2947, 0.0),
(2948, 0.0), (2949, 0.0), (2950, 0.0), (2951, 0.0), (2952, 0.0435194139889
2446), (2953, 0.037904902178945175), (2954, 0.0), (2955, 0.0), (2956, 0.
0), (2957, 0.0), (2958, 0.042562826537937436), (2959, 0.0481125224324688
2), (2960, 0.037904902178945175), (2961, 0.0), (2962, 0.0), (2963, 0.0),
 (2964, 0.0), (2965, 0.08333333333333336), (2966, 0.04166666666666668), (2
967, 0.08512565307587487), (2968, 0.0), (2969, 0.08512565307587487), (297
0, 0.0), (2971, 0.0), (2972, 0.0468292905790847), (2973, 0.0), (2974, 0.03
857583749052298), (2975, 0.0), (2976, 0.0), (2977, 0.0), (2978, 0.04682929
05790847), (2979, 0.0), (2980, 0.0468292905790847), (2981, 0.0), (2982, 0.
044543540318737404), (2983, 0.0), (2984, 0.0), (2985, 0.0), (2986, 0.04003
203845127179), (2987, 0.0), (2988, 0.0), (2989, 0.20016019225635895), (299
0, 0.0), (2991, 0.03857583749052298), (2992, 0.0), (2993, 0.0), (2994, 0.
0), (2995, 0.08908708063747481), (2996, 0.1276884796138123), (2997, 0.0),
 (2998, 0.0), (2999, 0.0), (3000, 0.045643546458763846), (3001, 0.09622504
486493764), (3002, 0.0), (3003, 0.0), (3004, 0.08512565307587487), (3005,
 0.0), (3006, 0.04082482904638631), (3007, 0.04351941398892446), (3008, 0.
06804138174397717), (3009, 0.0), (3010, 0.0), (3011, 0.0), (3012, 0.039283
71006591931), (3013, 0.08703882797784893), (3014, 0.0), (3015, 0.0), (301
6, 0.0), (3017, 0.0), (3018, 0.0), (3019, 0.0), (3020, 0.05455447255899810
4), (3021, 0.054554472558998104), (3022, 0.0), (3023, 0.0), (3024, 0.0),
 (3025, 0.0), (3026, 0.0), (3027, 0.0), (3028, 0.0), (3029, 0.177667263629
67541), (3030, 0.044543540318737404), (3031, 0.07715167498104596), (3032,
 0.0), (3033, 0.03928371006591931), (3034, 0.0), (3035, 0.0816496580927726
2), (3036, 0.0), (3037, 0.0), (3038, 0.0), (3039, 0.0), (3040, 0.081649658
09277262), (3041, 0.0), (3042, 0.0), (3043, 0.04950737714883372), (3044,
 0.0), (3045, 0.0), (3046, 0.0), (3047, 0.0), (3048, 0.0), (3049, 0.0), (3
050, 0.0), (3051, 0.09901475429766744), (3052, 0.0), (3053, 0.091287092917
52769), (3054, 0.03928371006591931), (3055, 0.04003203845127179), (3056,
 0.0), (3057, 0.0), (3058, 0.0468292905790847), (3059, 0.0), (3060, 0.0),
 (3061, 0.0), (3062, 0.08703882797784893), (3063, 0.04003203845127179), (3
064, 0.042562826537937436), (3065, 0.0), (3066, 0.0), (3067, 0.0), (3068,
 0.04003203845127179), (3069, 0.0), (3070, 0.0), (3071, 0.0), (3072, 0.0),
(3073, 0.04003203845127179), (3074, 0.037904902178945175), (3075, 0.0), (3
076, 0.0), (3077, 0.10206207261596577), (3078, 0.054554472558998104), (307
9, 0.0), (3080, 0.0), (3081, 0.0), (3082, 0.042562826537937436), (3083, 0.
04166666666666668), (3084, 0.0), (3085, 0.0), (3086, 0.04166666666666668),
(3087, 0.10206207261596577), (3088, 0.0), (3089, 0.051031036307982884), (3
090, 0.0), (3091, 0.0), (3092, 0.0), (3093, 0.0), (3094, 0.0), (3095, 0.
0), (3096, 0.0), (3097, 0.0), (3098, 0.08908708063747481), (3099, 0.038575
83749052298), (3100, 0.0), (3101, 0.0), (3102, 0.0), (3103, 0.0), (3104,
 0.0), (3105, 0.0), (3106, 0.04351941398892446), (3107, 0.0), (3108, 0.0),
(3109, 0.0), (3110, 0.045643546458763846), (3111, 0.0), (3112, 0.0), (311
3, 0.0), (3114, 0.04950737714883372), (3115, 0.0), (3116, 0.0), (3117, 0.1
0206207261596577), (3118, 0.0), (3119, 0.0), (3120, 0.0), (3121, 0.0), (31
22, 0.044543540318737404), (3123, 0.0), (3124, 0.037904902178945175), (312
5, 0.0), (3126, 0.04811252243246882), (3127, 0.0), (3128, 0.04454354031873
7404), (3129, 0.04950737714883372), (3130, 0.0), (3131, 0.0), (3132, 0.0),
 (3133, 0.03928371006591931), (3134, 0.045643546458763846), (3135, 0.0), (3

136, 0.08006407690254358), (3137, 0.0), (3138, 0.04166666666666668), (313
9, 0.0), (3140, 0.0), (3141, 0.0), (3142, 0.0468292905790847), (3143, 0.08
333333333333336), (3144, 0.09901475429766744), (3145, 0.0), (3146, 0.0),
(3147, 0.042562826537937436), (3148, 0.08908708063747481), (3149, 0.0),
(3150, 0.0), (3151, 0.044543540318737404), (3152, 0.045643546458763846),
(3153, 0.08908708063747481), (3154, 0.05270462766947299), (3155, 0.037904
902178945175), (3156, 0.0), (3157, 0.0), (3158, 0.07856742013183862), (315
9, 0.0), (3160, 0.0), (3161, 0.0), (3162, 0.08512565307587487), (3163, 0.
0), (3164, 0.0), (3165, 0.04166666666666668), (3166, 0.0), (3167, 0.0), (3
168, 0.0), (3169, 0.0), (3170, 0.037267799624996496), (3171, 0.03857583749
052298), (3172, 0.0), (3173, 0.042562826537937436), (3174, 0.0), (3175, 0.
0), (3176, 0.0), (3177, 0.037267799624996496), (3178, 0.0345032779671177
1), (3179, 0.0), (3180, 0.042562826537937436), (3181, 0.04256282653793743
6), (3182, 0.0), (3183, 0.0), (3184, 0.04082482904638631), (3185, 0.0), (3
186, 0.0), (3187, 0.04082482904638631), (3188, 0.04351941398892446), (318
9, 0.0), (3190, 0.0), (3191, 0.0), (3192, 0.0), (3193, 0.0), (3194, 0.0),
(3195, 0.04166666666666668), (3196, 0.0), (3197, 0.0), (3198, 0.0), (319
9, 0.10206207261596577), (3200, 0.0), (3201, 0.0), (3202, 0.04454354031873
7404), (3203, 0.0), (3204, 0.0), (3205, 0.0), (3206, 0.0), (3207, 0.0), (3
208, 0.12247448713915893), (3209, 0.04082482904638631), (3210, 0.041666666
66666668), (3211, 0.042562826537937436), (3212, 0.0), (3213, 0.0), (3214,
0.04082482904638631), (3215, 0.04351941398892446), (3216, 0.0481125224324
6882), (3217, 0.0), (3218, 0.0), (3219, 0.0), (3220, 0.0), (3221, 0.041666
66666666668), (3222, 0.0), (3223, 0.0), (3224, 0.10910894511799621), (322
5, 0.054554472558998104), (3226, 0.0), (3227, 0.0), (3228, 0.0), (3229, 0.
0), (3230, 0.0), (3231, 0.08333333333333336), (3232, 0.0), (3233, 0.045643
546458763846), (3234, 0.0), (3235, 0.0), (3236, 0.0), (3237, 0.04950737714
883372), (3238, 0.0), (3239, 0.037904902178945175), (3240, 0.0408248290463
8631), (3241, 0.0), (3242, 0.0), (3243, 0.0), (3244, 0.0), (3245, 0.042562
826537937436), (3246, 0.0), (3247, 0.0), (3248, 0.0), (3249, 0.03857583749
052298), (3250, 0.0), (3251, 0.08333333333333336), (3252, 0.04082482904638
631), (3253, 0.0), (3254, 0.0), (3255, 0.0), (3256, 0.0), (3257, 0.0), (32
58, 0.0), (3259, 0.04351941398892446), (3260, 0.04351941398892446), (3261,
0.0), (3262, 0.0), (3263, 0.08703882797784893), (3264, 0.0), (3265, 0.0),
(3266, 0.045643546458763846), (3267, 0.0), (3268, 0.0), (3269, 0.0), (327
0, 0.07106690545187017), (3271, 0.0), (3272, 0.0), (3273, 0.04082482904638
631), (3274, 0.045643546458763846), (3275, 0.0), (3276, 0.0833333333333333
6), (3277, 0.0), (3278, 0.045643546458763846), (3279, 0.0), (3280, 0.05270
462766947299), (3281, 0.04351941398892446), (3282, 0.0), (3283, 0.0), (328
4, 0.051031036307982884), (3285, 0.0), (3286, 0.0), (3287, 0.0), (3288, 0.
04003203845127179), (3289, 0.0), (3290, 0.04351941398892446), (3291, 0.080
06407690254358), (3292, 0.05270462766947299), (3293, 0.04166666666666668),
(3294, 0.0), (3295, 0.0), (3296, 0.0), (3297, 0.04082482904638631), (3298,
0.0), (3299, 0.04950737714883372), (3300, 0.0), (3301, 0.0), (3302, 0.0),
(3303, 0.04082482904638631), (3304, 0.10910894511799621), (3305, 0.122474
48713915893), (3306, 0.05270462766947299), (3307, 0.0), (3308, 0.0), (330
9, 0.08006407690254358), (3310, 0.0), (3311, 0.042562826537937436), (3312,
0.0), (3313, 0.04003203845127179), (3314, 0.0), (3315, 0.0), (3316, 0.0435
1941398892446), (3317, 0.0), (3318, 0.08908708063747481), (3319, 0.0), (33
20, 0.0), (3321, 0.0), (3322, 0.0), (3323, 0.0), (3324, 0.0), (3325, 0.0),
(3326, 0.051031036307982884), (3327, 0.0), (3328, 0.0), (3329, 0.093658581
1581694), (3330, 0.0), (3331, 0.0), (3332, 0.0468292905790847), (3333, 0.
0), (3334, 0.0), (3335, 0.05270462766947299), (3336, 0.08164965809277262),
(3337, 0.11572751247156893), (3338, 0.0), (3339, 0.08333333333333336), (33
40, 0.0), (3341, 0.0), (3342, 0.127684796138123), (3343, 0.08333333333333
336), (3344, 0.0), (3345, 0.04351941398892446), (3346, 0.0), (3347, 0.0),
(3348, 0.0), (3349, 0.04351941398892446), (3350, 0.07580980435789035), (3
351, 0.08006407690254358), (3352, 0.15430334996209919), (3353, 0.0468292905
790847), (3354, 0.0), (3355, 0.0), (3356, 0.0), (3357, 0.0), (3358, 0.0408
2482904638631), (3359, 0.051031036307982884), (3360, 0.0), (3361, 0.049507
37714883372), (3362, 0.0), (3363, 0.0), (3364, 0.08703882797784893), (336

5, 0.0), (3366, 0.04082482904638631), (3367, 0.0), (3368, 0.0), (3369, 0.
0), (3370, 0.07856742013183862), (3371, 0.0), (3372, 0.04351941398892446),
(3373, 0.09622504486493764), (3374, 0.04166666666666668), (3375, 0.0), (33
76, 0.0), (3377, 0.0), (3378, 0.0), (3379, 0.0), (3380, 0.0), (3381, 0.0),
(3382, 0.04003203845127179), (3383, 0.0), (3384, 0.0), (3385, 0.0851256530
7587487), (3386, 0.03500700210070025), (3387, 0.0), (3388, 0.0), (3389, 0.
0468292905790847), (3390, 0.20134681656420733), (3391, 0.0), (3392, 0.0510
31036307982884), (3393, 0.0), (3394, 0.0), (3395, 0.0), (3396, 0.0), (339
7, 0.0), (3398, 0.0), (3399, 0.03928371006591931), (3400, 0.0), (3401, 0.
0), (3402, 0.054554472558998104), (3403, 0.045643546458763846), (3404, 0.
0), (3405, 0.04351941398892446), (3406, 0.04166666666666668), (3407, 0.0),
(3408, 0.0), (3409, 0.0), (3410, 0.0), (3411, 0.042562826537937436), (341
2, 0.051031036307982884), (3413, 0.03553345272593508), (3414, 0.0435194139
8892446), (3415, 0.0), (3416, 0.04950737714883372), (3417, 0.0379049021789
45175), (3418, 0.0), (3419, 0.0), (3420, 0.0), (3421, 0.0), (3422, 0.0),
(3423, 0.0), (3424, 0.08006407690254358), (3425, 0.0), (3426, 0.0), (342
7, 0.0), (3428, 0.0), (3429, 0.08512565307587487), (3430, 0.0), (3431, 0.
0), (3432, 0.0), (3433, 0.0), (3434, 0.0), (3435, 0.0), (3436, 0.0), (343
7, 0.102062072261596577), (3438, 0.0), (3439, 0.04166666666666668), (3440,
0.08164965809277262), (3441, 0.0), (3442, 0.0), (3443, 0.0), (3444, 0.0),
(3445, 0.08333333333333336), (3446, 0.0), (3447, 0.0), (3448, 0.0385758374
9052298), (3449, 0.0), (3450, 0.0), (3451, 0.0), (3452, 0.0), (3453, 0.0),
(3454, 0.0), (3455, 0.0), (3456, 0.0), (3457, 0.0), (3458, 0.0), (3459, 0.
0), (3460, 0.04166666666666668), (3461, 0.051031036307982884), (3462, 0.
0), (3463, 0.044543540318737404), (3464, 0.0), (3465, 0.0), (3466, 0.08006
407690254358), (3467, 0.0), (3468, 0.0), (3469, 0.0), (3470, 0.0), (3471,
0.0), (3472, 0.0), (3473, 0.0), (3474, 0.0), (3475, 0.0), (3476, 0.0), (3
477, 0.04082482904638631), (3478, 0.045643546458763846), (3479, 0.0), (348
0, 0.0), (3481, 0.0), (3482, 0.0), (3483, 0.0), (3484, 0.0392837100659193
1), (3485, 0.054554472558998104), (3486, 0.051031036307982884), (3487, 0.
0), (3488, 0.0), (3489, 0.0), (3490, 0.044543540318737404), (3491, 0.04682
92905790847), (3492, 0.08006407690254358), (3493, 0.0), (3494, 0.157134840
26367724), (3495, 0.08908708063747481), (3496, 0.0), (3497, 0.0), (3498,
0.0), (3499, 0.04351941398892446), (3500, 0.054554472558998104), (3501,
0.0), (3502, 0.0), (3503, 0.0), (3504, 0.0), (3505, 0.04564354645876384
6), (3506, 0.0), (3507, 0.0), (3508, 0.0), (3509, 0.05270462766947299), (3
510, 0.0), (3511, 0.0), (3512, 0.0), (3513, 0.0), (3514, 0.042562826537937
436), (3515, 0.0), (3516, 0.07856742013183862), (3517, 0.0), (3518, 0.0445
43540318737404), (3519, 0.0), (3520, 0.04166666666666668), (3521, 0.0), (3
522, 0.08333333333333336), (3523, 0.054554472558998104), (3524, 0.0), (352
5, 0.0), (3526, 0.0), (3527, 0.045643546458763846), (3528, 0.0), (3529, 0.
045643546458763846), (3530, 0.0), (3531, 0.0), (3532, 0.0), (3533, 0.03928
371006591931), (3534, 0.0), (3535, 0.0), (3536, 0.04351941398892446), (353
7, 0.0), (3538, 0.0), (3539, 0.0), (3540, 0.0), (3541, 0.0), (3542, 0.0),
(3543, 0.03928371006591931), (3544, 0.0), (3545, 0.044543540318737404),
(3546, 0.0), (3547, 0.04811252243246882), (3548, 0.03857583749052298), (3
549, 0.0), (3550, 0.0936585811581694), (3551, 0.0), (3552, 0.0425628265379
37436), (3553, 0.044543540318737404), (3554, 0.0), (3555, 0.0), (3556, 0.
0), (3557, 0.0), (3558, 0.04003203845127179), (3559, 0.0), (3560, 0.041666
66666666668), (3561, 0.0), (3562, 0.0), (3563, 0.0), (3564, 0.0), (3565,
0.0), (3566, 0.042562826537937436), (3567, 0.0), (3568, 0.043519413988924
46), (3569, 0.04811252243246882), (3570, 0.0), (3571, 0.0833333333333333
6), (3572, 0.0468292905790847), (3573, 0.0), (3574, 0.0), (3575, 0.0), (35
76, 0.0), (3577, 0.0), (3578, 0.04351941398892446), (3579, 0.0435194139889
2446), (3580, 0.0), (3581, 0.0), (3582, 0.0), (3583, 0.0360843918243516l
5), (3584, 0.042562826537937436), (3585, 0.0), (3586, 0.0), (3587, 0.0),
(3588, 0.0), (3589, 0.0), (3590, 0.0), (3591, 0.051031036307982884), (359
2, 0.04351941398892446), (3593, 0.0), (3594, 0.0), (3595, 0.0), (3596, 0.
0), (3597, 0.0), (3598, 0.0), (3599, 0.0), (3600, 0.0), (3601, 0.0), (360
2, 0.0), (3603, 0.04082482904638631), (3604, 0.04082482904638631), (3605,
0.0), (3606, 0.04351941398892446), (3607, 0.14852213144650117), (3608, 0.

0), (3609, 0.0), (3610, 0.0), (3611, 0.0), (3612, 0.04351941398892446), (3613, 0.12009611535381537), (3614, 0.04082482904638631), (3615, 0.037267799624996496), (3616, 0.07715167498104596), (3617, 0.08908708063747481), (3618, 0.08908708063747481), (3619, 0.0), (3620, 0.0), (3621, 0.0), (3622, 0.08512565307587487), (3623, 0.0468292905790847), (3624, 0.0), (3625, 0.04811252243246882), (3626, 0.0), (3627, 0.0), (3628, 0.0), (3629, 0.0), (3630, 0.0), (3631, 0.0468292905790847), (3632, 0.0), (3633, 0.0), (3634, 0.0), (3635, 0.0), (3636, 0.0), (3637, 0.0), (3638, 0.08908708063747481), (3639, 0.0), (3640, 0.0), (3641, 0.0), (3642, 0.0), (3643, 0.03666177875533833), (3644, 0.0), (3645, 0.0), (3646, 0.0), (3647, 0.07856742013183862), (3648, 0.0), (3649, 0.054554472558998104), (3650, 0.0468292905790847), (3651, 0.0), (3652, 0.0), (3653, 0.0), (3654, 0.0), (3655, 0.0), (3656, 0.0), (3657, 0.0), (3658, 0.042562826537937436), (3659, 0.044543540318737404), (3660, 0.0), (3661, 0.0), (3662, 0.08333333333333336), (3663, 0.0), (3664, 0.0), (3665, 0.0), (3666, 0.0), (3667, 0.042562826537937436), (3668, 0.044543540318737404), (3669, 0.0), (3670, 0.0), (3671, 0.03928371006591931), (3672, 0.044543540318737404), (3673, 0.0), (3674, 0.0), (3675, 0.0), (3676, 0.0), (3677, 0.0), (3678, 0.0), (3679, 0.044543540318737404), (3680, 0.0), (3681, 0.0), (3682, 0.08333333333333336), (3683, 0.0), (3684, 0.0), (3685, 0.04166666666666668), (3686, 0.051031036307982884), (3687, 0.0), (3688, 0.18330889377669163), (3689, 0.042562826537937436), (3690, 0.0), (3691, 0.0), (3692, 0.0), (3693, 0.0), (3694, 0.04811252243246882), (3695, 0.042562826537937436), (3696, 0.0), (3697, 0.0), (3698, 0.04351941398892446), (3699, 0.0), (3700, 0.0), (3701, 0.0), (3702, 0.0), (3703, 0.0), (3704, 0.13363062095621220), (3705, 0.0), (3706, 0.037904902178945175), (3707, 0.04950737714883372), (3708, 0.0), (3709, 0.0), (3710, 0.0), (3711, 0.0), (3712, 0.08333333333333336), (3713, 0.0), (3714, 0.05270462766947299), (3715, 0.08703882797784893), (3716, 0.0), (3717, 0.0), (3718, 0.0), (3719, 0.0), (3720, 0.0), (3721, 0.0), (3722, 0.04082482904638631), (3723, 0.0), (3724, 0.09622504486493764), (3725, 0.045643546458763846), (3726, 0.0), (3727, 0.0), (3728, 0.14907119849998599), (3729, 0.0), (3730, 0.0), (3731, 0.0), (3732, 0.0), (3733, 0.09128709291752769), (3734, 0.04082482904638631), (3735, 0.0), (3736, 0.0), (3737, 0.1276884796138123), (3738, 0.0), (3739, 0.0), (3740, 0.045643546458763846), (3741, 0.11572751247156893), (3742, 0.0), (3743, 0.0), (3744, 0.0), (3745, 0.0), (3746, 0.0), (3747, 0.0), (3748, 0.0), (3749, 0.04082482904638631), (3750, 0.03928371006591931), (3751, 0.0), (3752, 0.04811252243246882), (3753, 0.0), (3754, 0.0), (3755, 0.03857583749052298), (3756, 0.05270462766947299), (3757, 0.0), (3758, 0.04351941398892446), (3759, 0.0), (3760, 0.0), (3761, 0.0), (3762, 0.0), (3763, 0.0), (3764, 0.042562826537937436), (3765, 0.1276884796138123), (3766, 0.0), (3767, 0.0), (3768, 0.0), (3769, 0.04351941398892446), (3770, 0.0), (3771, 0.0), (3772, 0.0), (3773, 0.0), (3774, 0.04351941398892446), (3775, 0.0936585811581694), (3776, 0.0), (3777, 0.09622504486493764), (3778, 0.0468292905790847), (3779, 0.0), (3780, 0.0), (3781, 0.0), (3782, 0.08908708063747481), (3783, 0.0), (3784, 0.044543540318737404), (3785, 0.0), (3786, 0.0), (3787, 0.0), (3788, 0.0), (3789, 0.0), (3790, 0.0), (3791, 0.0), (3792, 0.0), (3793, 0.0), (3794, 0.0), (3795, 0.04351941398892446), (3796, 0.0), (3797, 0.0), (3798, 0.0), (3799, 0.08908708063747481), (3800, 0.08512565307587487), (3801, 0.0), (3802, 0.0), (3803, 0.0), (3804, 0.037904902178945175), (3805, 0.0), (3806, 0.0), (3807, 0.0), (3808, 0.0), (3809, 0.0), (3810, 0.1305582419667734), (3811, 0.0), (3812, 0.0), (3813, 0.07453559924999299), (3814, 0.0), (3815, 0.04166666666666668), (3816, 0.044543540318737404), (3817, 0.0), (3818, 0.0), (3819, 0.04351941398892446), (3820, 0.0), (3821, 0.0), (3822, 0.0), (3823, 0.0), (3824, 0.0), (3825, 0.0), (3826, 0.08512565307587487), (3827, 0.0), (3828, 0.042562826537937436), (3829, 0.0), (3830, 0.044543540318737404), (3831, 0.045643546458763846), (3832, 0.0), (3833, 0.044543540318737404), (3834, 0.0), (3835, 0.0), (3836, 0.058925565098878974), (3837, 0.03666177875533833), (3838, 0.0), (3839, 0.0), (3840, 0.0), (3841, 0.08703882797784893), (3842, 0.0468292905790847), (3843, 0.0), (3844, 0.0), (3845, 0.08703882797784893), (3846, 0.0), (3847, 0.0), (3848, 0.042562826537937436), (3849, 0.045643546458763846),

(3850, 0.04351941398892446), (3851, 0.044543540318737404), (3852, 0.0),
(3853, 0.0), (3854, 0.042562826537937436), (3855, 0.0), (3856, 0.13693063
937629155), (3857, 0.05270462766947299), (3858, 0.04811252243246882), (385
9, 0.0), (3860, 0.0), (3861, 0.0), (3862, 0.0), (3863, 0.0), (3864, 0.0),
(3865, 0.0), (3866, 0.0), (3867, 0.0), (3868, 0.0), (3869, 0.0), (3870,
0.04166666666666668), (3871, 0.0), (3872, 0.0), (3873, 0.0385758374905229
8), (3874, 0.04351941398892446), (3875, 0.0), (3876, 0.0), (3877, 0.0), (3
878, 0.0), (3879, 0.0), (3880, 0.0), (3881, 0.18952451089472588), (3882,
0.04811252243246882), (3883, 0.0), (3884, 0.07580980435789035), (3885, 0.
0), (3886, 0.042562826537937436), (3887, 0.0), (3888, 0.0), (3889, 0.0),
(3890, 0.0), (3891, 0.0), (3892, 0.0), (3893, 0.0), (3894, 0.0), (3895,
0.04166666666666668), (3896, 0.04082482904638631), (3897, 0.0), (3898, 0.
0), (3899, 0.044543540318737404), (3900, 0.0), (3901, 0.1276884796138123),
(3902, 0.0), (3903, 0.04166666666666668), (3904, 0.0), (3905, 0.0), (3906,
0.0), (3907, 0.037267799624996496), (3908, 0.0), (3909, 0.0), (3910, 0.0),
(3911, 0.0), (3912, 0.051031036307982884), (3913, 0.0), (3914, 0.0), (391
5, 0.049507377148833372), (3916, 0.0), (3917, 0.0), (3918, 0.0), (3919, 0.0
49507377148833372), (3920, 0.04166666666666668), (3921, 0.0), (3922, 0.0),
(3923, 0.04351941398892446), (3924, 0.045643546458763846), (3925, 0.0),
(3926, 0.0), (3927, 0.0), (3928, 0.04166666666666668), (3929, 0.048112522
43246882), (3930, 0.0), (3931, 0.0), (3932, 0.0), (3933, 0.0), (3934, 0.
0), (3935, 0.04003203845127179), (3936, 0.0), (3937, 0.0), (3938, 0.0), (3
939, 0.0), (3940, 0.037267799624996496), (3941, 0.044543540318737404), (39
42, 0.044543540318737404), (3943, 0.05270462766947299), (3944, 0.041666666
66666668), (3945, 0.0468292905790847), (3946, 0.0), (3947, 0.0), (3948, 0.
0), (3949, 0.04351941398892446), (3950, 0.0), (3951, 0.0), (3952, 0.0), (3
953, 0.0), (3954, 0.0), (3955, 0.0), (3956, 0.0), (3957, 0.0), (3958, 0.
0), (3959, 0.0), (3960, 0.0), (3961, 0.0), (3962, 0.04082482904638631), (3
963, 0.0), (3964, 0.0), (3965, 0.04351941398892446), (3966, 0.043519413988
92446), (3967, 0.0), (3968, 0.05270462766947299), (3969, 0.046829290579084
7), (3970, 0.0), (3971, 0.0), (3972, 0.05270462766947299), (3973, 0.0), (3
974, 0.0), (3975, 0.0), (3976, 0.10540925533894598), (3977, 0.0), (3978,
0.0), (3979, 0.0468292905790847), (3980, 0.0), (3981, 0.0), (3982, 0.0468
292905790847), (3983, 0.0), (3984, 0.0), (3985, 0.0), (3986, 0.08512565307
587487), (3987, 0.045643546458763846), (3988, 0.0468292905790847), (3989,
0.0), (3990, 0.042562826537937436), (3991, 0.0468292905790847), (3992, 0.
0), (3993, 0.0936585811581694), (3994, 0.04166666666666668), (3995, 0.0),
(3996, 0.0), (3997, 0.0), (3998, 0.0), (3999, 0.0), (4000, 0.037904902178
945175), (4001, 0.0), (4002, 0.0), (4003, 0.0), (4004, 0.09901475429766674
4), (4005, 0.0), (4006, 0.0), (4007, 0.0), (4008, 0.0), (4009, 0.0), (401
0, 0.03553345272593508), (4011, 0.0), (4012, 0.044543540318737404), (4013,
0.044543540318737404), (4014, 0.0), (4015, 0.04351941398892446), (4016, 0.
07580980435789035), (4017, 0.0), (4018, 0.0), (4019, 0.07715167498104596),
(4020, 0.0), (4021, 0.0), (4022, 0.0), (4023, 0.04351941398892446), (4024,
0.03857583749052298), (4025, 0.04351941398892446), (4026, 0.0), (4027, 0.
0), (4028, 0.0), (4029, 0.0), (4030, 0.0), (4031, 0.0), (4032, 0.0), (403
3, 0.08703882797784893), (4034, 0.056613851707229795), (4035, 0.0495073771
4883372), (4036, 0.04351941398892446), (4037, 0.0), (4038, 0.0527046276694
7299), (4039, 0.042562826537937436), (4040, 0.0), (4041, 0.045643546458763
846), (4042, 0.08512565307587487), (4043, 0.0), (4044, 0.0), (4045, 0.0),
(4046, 0.0), (4047, 0.0), (4048, 0.10206207261596577), (4049, 0.117851130
19775793), (4050, 0.0), (4051, 0.0), (4052, 0.0), (4053, 0.0), (4054, 0.
0), (4055, 0.05270462766947299), (4056, 0.0), (4057, 0.0), (4058, 0.0), (4
059, 0.0), (4060, 0.0), (4061, 0.0468292905790847), (4062, 0.0), (4063, 0.
0), (4064, 0.0), (4065, 0.0), (4066, 0.0), (4067, 0.0), (4068, 0.0), (406
9, 0.0), (4070, 0.05270462766947299), (4071, 0.08333333333333336), (4072,
0.044543540318737404), (4073, 0.0), (4074, 0.0), (4075, 0.0), (4076, 0.
0), (4077, 0.08512565307587487), (4078, 0.07453559924999299), (4079, 0.0),
(4080, 0.0), (4081, 0.0), (4082, 0.0468292905790847), (4083, 0.04564354645
8763846), (4084, 0.03857583749052298), (4085, 0.03857583749052298), (4086,
0.0), (4087, 0.0), (4088, 0.0), (4089, 0.0), (4090, 0.0), (4091, 0.0495073

7714883372), (4092, 0.0468292905790847), (4093, 0.09128709291752769), (409
4, 0.0), (4095, 0.0), (4096, 0.0), (4097, 0.0), (4098, 0.044543540318737404), (4099, 0.04351941398892446), (4100, 0.0), (4101, 0.0), (4102, 0.0), (4103, 0.0), (4104, 0.0), (4105, 0.0), (4106, 0.0936585811581694), (4107, 0.0), (4108, 0.0), (4109, 0.0), (4110, 0.0), (4111, 0.05270462766947299), (4112, 0.0), (4113, 0.0771516749804596), (4114, 0.044543540318737404), (4115, 0.0), (4116, 0.0), (4117, 0.0936585811581694), (4118, 0.0), (4119, 0.08333333333333336), (4120, 0.0), (4121, 0.0), (4122, 0.04950737714883372), (4123, 0.0), (4124, 0.04166666666666668), (4125, 0.054554472558998104), (4126, 0.0), (4127, 0.0), (4128, 0.0), (4129, 0.04811252243246882), (4130, 0.0), (4131, 0.0), (4132, 0.0), (4133, 0.0), (4134, 0.0), (4135, 0.08333333333333336), (4136, 0.09128709291752769), (4137, 0.0), (4138, 0.0), (4139, 0.0), (4140, 0.0), (4141, 0.0), (4142, 0.0), (4143, 0.10540925533894598), (4144, 0.0), (4145, 0.0), (4146, 0.09901475429766744), (4147, 0.0), (4148, 0.0), (4149, 0.04950737714883372), (4150, 0.0), (4151, 0.0), (4152, 0.0), (4153, 0.0), (4154, 0.0), (4155, 0.08908708063747481), (4156, 0.045643546458763846), (4157, 0.0), (4158, 0.0), (4159, 0.0), (4160, 0.051031036307982884), (4161, 0.054554472558998104), (4162, 0.0), (4163, 0.0), (4164, 0.0), (4165, 0.04166666666666668), (4166, 0.0), (4167, 0.0), (4168, 0.0), (4169, 0.0), (4170, 0.0), (4171, 0.037904902178945175), (4172, 0.10998533626260615), (4173, 0.03928371006591931), (4174, 0.0), (4175, 0.08333333333333336), (4176, 0.0468292905790847), (4177, 0.0), (4178, 0.0), (4179, 0.0), (4180, 0.0), (4181, 0.0), (4182, 0.03928371006591931), (4183, 0.0), (4184, 0.0), (4185, 0.0), (4186, 0.0), (4187, 0.04811252243246882), (4188, 0.0), (4189, 0.044543540318737404), (4190, 0.0), (4191, 0.044543540318737404), (4192, 0.0), (4193, 0.044543540318737404), (4194, 0.0), (4195, 0.0), (4196, 0.0), (4197, 0.0), (4198, 0.0), (4199, 0.0), (4200, 0.0), (4201, 0.0), (4202, 0.0), (4203, 0.0), (4204, 0.0), (4205, 0.0), (4206, 0.0), (4207, 0.051031036307982884), (4208, 0.0), (4209, 0.0), (4210, 0.0), (4211, 0.03928371006591931), (4212, 0.0), (4213, 0.0), (4214, 0.0), (4215, 0.037904902178945175), (4216, 0.0), (4217, 0.0), (4218, 0.0), (4219, 0.0), (4220, 0.037267799624996496), (4221, 0.0), (4222, 0.0), (4223, 0.0), (4224, 0.0), (4225, 0.0), (4226, 0.0), (4227, 0.0), (4228, 0.0), (4229, 0.0), (4230, 0.042562826537937436), (4231, 0.0), (4232, 0.0), (4233, 0.056613851707229795), (4234, 0.0), (4235, 0.0), (4236, 0.0), (4237, 0.0), (4238, 0.0), (4239, 0.0), (4240, 0.08908708063747481), (4241, 0.0), (4242, 0.0), (4243, 0.051031036307982884), (4244, 0.0), (4245, 0.0), (4246, 0.0), (4247, 0.0), (4248, 0.0), (4249, 0.03857583749052298), (4250, 0.03666177875533833), (4251, 0.09128709291752769), (4252, 0.0), (4253, 0.0), (4254, 0.0), (4255, 0.0), (4256, 0.04950737714883372), (4257, 0.0), (4258, 0.05270462766947299), (4259, 0.042562826537937436), (4260, 0.0), (4261, 0.0), (4262, 0.051031036307982884), (4263, 0.0), (4264, 0.0), (4265, 0.0), (4266, 0.0), (4267, 0.04082482904638631), (4268, 0.0), (4269, 0.0), (4270, 0.03928371006591931), (4271, 0.0), (4272, 0.0), (4273, 0.0), (4274, 0.0), (4275, 0.04950737714883372), (4276, 0.0), (4277, 0.05270462766947299), (4278, 0.0), (4279, 0.051031036307982884), (4280, 0.0), (4281, 0.0), (4282, 0.0), (4283, 0.0), (4284, 0.0), (4285, 0.0), (4286, 0.08703882797784893), (4287, 0.04351941398892446), (4288, 0.0), (4289, 0.0), (4290, 0.0), (4291, 0.0), (4292, 0.0), (4293, 0.0), (4294, 0.0), (4295, 0.0), (4296, 0.0), (4297, 0.0), (4298, 0.0), (4299, 0.05270462766947299), (4300, 0.0), (4301, 0.051031036307982884), (4302, 0.0), (4303, 0.0), (4304, 0.0), (4305, 0.0), (4306, 0.0), (4307, 0.0), (4308, 0.0), (4309, 0.0), (4310, 0.042562826537937436), (4311, 0.0), (4312, 0.08512565307587487), (4313, 0.0), (4314, 0.0), (4315, 0.09901475429766744), (4316, 0.10206207261596577), (4317, 0.0), (4318, 0.0), (4319, 0.0), (4320, 0.0), (4321, 0.0), (4322, 0.0), (4323, 0.0), (4324, 0.0), (4325, 0.08703882797784893), (4326, 0.04082482904638631), (4327, 0.03928371006591931), (4328, 0.0), (4329, 0.0), (4330, 0.0), (4331, 0.0), (4332, 0.04082482904638631), (4333, 0.0), (4334, 0.0), (4335, 0.04351941398892446), (4336, 0.0), (4337, 0.0), (4338, 0.04811252243246882), (4339, 0.08512565307587487), (4340, 0.0), (4341, 0.04811252243246882), (4342, 0.0), (4343, 0.0), (4344, 0.08333333333333336), (4345, 0.0), (4346, 0.0), (434

7, 0.0), (4348, 0.0), (4349, 0.1336306209562122), (4350, 0.0), (4351, 0.04
4543540318737404), (4352, 0.0), (4353, 0.08512565307587487), (4354, 0.0495
0737714883372), (4355, 0.0), (4356, 0.0), (4357, 0.056613851707229795), (4
358, 0.0), (4359, 0.0), (4360, 0.0), (4361, 0.0), (4362, 0.0), (4363, 0.
0), (4364, 0.0), (4365, 0.0), (4366, 0.0), (4367, 0.0), (4368, 0.089087080
63747481), (4369, 0.056613851707229795), (4370, 0.0), (4371, 0.08908708063
747481), (4372, 0.042562826537937436), (4373, 0.0), (4374, 0.0), (4375, 0.
0), (4376, 0.04166666666666668), (4377, 0.0), (4378, 0.03726779962499649
6), (4379, 0.0), (4380, 0.044543540318737404), (4381, 0.0), (4382, 0.0),
 (4383, 0.0), (4384, 0.0), (4385, 0.0), (4386, 0.04950737714883372), (438
7, 0.0), (4388, 0.044543540318737404), (4389, 0.0), (4390, 0.0), (4391, 0.
0), (4392, 0.0), (4393, 0.0), (4394, 0.0), (4395, 0.051031036307982884),
 (4396, 0.0), (4397, 0.03928371006591931), (4398, 0.0), (4399, 0.045643546
458763846), (4400, 0.0), (4401, 0.10206207261596577), (4402, 0.04256282653
7937436), (4403, 0.0), (4404, 0.0), (4405, 0.0), (4406, 0.0), (4407, 0.0),
(4408, 0.044543540318737404), (4409, 0.0), (4410, 0.0), (4411, 0.0), (441
2, 0.0), (4413, 0.0), (4414, 0.0), (4415, 0.0), (4416, 0.0), (4417, 0.0),
 (4418, 0.0), (4419, 0.0), (4420, 0.0), (4421, 0.0), (4422, 0.0), (4423,
 0.0), (4424, 0.0), (4425, 0.044543540318737404), (4426, 0.0), (4427, 0.04
4543540318737404), (4428, 0.0), (4429, 0.0), (4430, 0.0), (4431, 0.0), (44
32, 0.0), (4433, 0.0), (4434, 0.0), (4435, 0.0), (4436, 0.0), (4437, 0.0),
(4438, 0.0), (4439, 0.0), (4440, 0.11785113019775793), (4441, 0.1178511301
9775793), (4442, 0.0), (4443, 0.0), (4444, 0.0), (4445, 0.0456435464587638
46), (4446, 0.0), (4447, 0.03857583749052298), (4448, 0.0), (4449, 0.04950
737714883372), (4450, 0.051031036307982884), (4451, 0.0), (4452, 0.0), (44
53, 0.03857583749052298), (4454, 0.0), (4455, 0.0), (4456, 0.0), (4457, 0.
08512565307587487), (4458, 0.0), (4459, 0.0), (4460, 0.04564354645876384
6), (4461, 0.045643546458763846), (4462, 0.0), (4463, 0.0), (4464, 0.0),
 (4465, 0.08006407690254358), (4466, 0.0), (4467, 0.0), (4468, 0.0), (446
9, 0.04003203845127179), (4470, 0.0), (4471, 0.0), (4472, 0.0), (4473, 0.
0), (4474, 0.0), (4475, 0.0), (4476, 0.0), (4477, 0.0), (4478, 0.0), (447
9, 0.0), (4480, 0.0), (4481, 0.0), (4482, 0.0), (4483, 0.0), (4484, 0.0),
 (4485, 0.0), (4486, 0.0), (4487, 0.11785113019775793), (4488, 0.0), (448
9, 0.05270462766947299), (4490, 0.0), (4491, 0.0), (4492, 0.0), (4493, 0.
0), (4494, 0.04950737714883372), (4495, 0.0), (4496, 0.0), (4497, 0.0), (4
498, 0.042562826537937436), (4499, 0.10206207261596577), (4500, 0.0), (450
1, 0.056613851707229795), (4502, 0.0), (4503, 0.0), (4504, 0.0), (4505, 0.
0), (4506, 0.0), (4507, 0.0), (4508, 0.0), (4509, 0.0), (4510, 0.0), (451
1, 0.045643546458763846), (4512, 0.0), (4513, 0.044543540318737404), (451
4, 0.0), (4515, 0.056613851707229795), (4516, 0.0), (4517, 0.0), (4518, 0.
0), (4519, 0.0), (4520, 0.0), (4521, 0.0), (4522, 0.0), (4523, 0.0), (452
4, 0.0), (4525, 0.0), (4526, 0.0), (4527, 0.0), (4528, 0.045643546458763846
6), (4529, 0.0), (4530, 0.0), (4531, 0.0), (4532, 0.0), (4533, 0.0), (453
4, 0.0), (4535, 0.045643546458763846), (4536, 0.0), (4537, 0.0), (4538, 0.
0468292905790847), (4539, 0.045643546458763846), (4540, 0.0), (4541, 0.0),
(4542, 0.0), (4543, 0.0), (4544, 0.0), (4545, 0.0), (4546, 0.0510310363079
82884), (4547, 0.09901475429766744), (4548, 0.051031036307982884), (4549,
 0.08512565307587487), (4550, 0.0), (4551, 0.0), (4552, 0.0), (4553, 0.0),
(4554, 0.04811252243246882), (4555, 0.037904902178945175), (4556, 0.0), (4
557, 0.051031036307982884), (4558, 0.042562826537937436), (4559, 0.0), (45
60, 0.0), (4561, 0.0), (4562, 0.0), (4563, 0.04082482904638631), (4564, 0.
0), (4565, 0.08703882797784893), (4566, 0.0), (4567, 0.0), (4568, 0.0), (4
569, 0.0), (4570, 0.0), (4571, 0.0), (4572, 0.0), (4573, 0.081649658092772
62), (4574, 0.0), (4575, 0.0), (4576, 0.0), (4577, 0.0), (4578, 0.0), (457
9, 0.0745355992499299), (4580, 0.0), (4581, 0.0), (4582, 0.0), (4583, 0.
0), (4584, 0.0), (4585, 0.0468292905790847), (4586, 0.0), (4587, 0.0), (45
88, 0.0), (4589, 0.0), (4590, 0.0), (4591, 0.0), (4592, 0.0), (4593, 0.0),
(4594, 0.0), (4595, 0.04351941398892446), (4596, 0.0), (4597, 0.0), (4598,
0.04811252243246882), (4599, 0.0936585811581694), (4600, 0.0), (4601, 0.
0), (4602, 0.0468292905790847), (4603, 0.0), (4604, 0.0), (4605, 0.0), (46
06, 0.0), (4607, 0.0), (4608, 0.0468292905790847), (4609, 0.0), (4610, 0.

0), (4611, 0.0), (4612, 0.0), (4613, 0.0), (4614, 0.0), (4615, 0.0), (461
6, 0.0), (4617, 0.0), (4618, 0.0), (4619, 0.0), (4620, 0.0870388279778489
3), (4621, 0.0468292905790847), (4622, 0.0), (4623, 0.044543540318737404),
(4624, 0.0), (4625, 0.0), (4626, 0.12009611535381537), (4627, 0.0), (4628,
0.0), (4629, 0.0), (4630, 0.0), (4631, 0.037904902178945175), (4632, 0.0),
(4633, 0.0), (4634, 0.0), (4635, 0.0), (4636, 0.0), (4637, 0.0), (4638, 0.
117851113019775795), (4639, 0.042562826537937436), (4640, 0.046829290579084
7), (4641, 0.0), (4642, 0.08006407690254358), (4643, 0.0), (4644, 0.0), (4
645, 0.0), (4646, 0.0), (4647, 0.0), (4648, 0.0), (4649, 0.127688479613812
3), (4650, 0.0), (4651, 0.0), (4652, 0.0), (4653, 0.0), (4654, 0.140487871
7372541), (4655, 0.0), (4656, 0.0), (4657, 0.0), (4658, 0.1132277034144595
9), (4659, 0.0), (4660, 0.0), (4661, 0.0), (4662, 0.0), (4663, 0.0), (466
4, 0.04811252243246882), (4665, 0.0), (4666, 0.0), (4667, 0.0), (4668, 0.
0), (4669, 0.04166666666666668), (4670, 0.08333333333333336), (4671, 0.0),
(4672, 0.037904902178945175), (4673, 0.0), (4674, 0.0), (4675, 0.0), (467
6, 0.0), (4677, 0.0), (4678, 0.0), (4679, 0.0), (4680, 0.0), (4681, 0.0372
67799624996496), (4682, 0.0), (4683, 0.0), (4684, 0.042562826537937436),
 (4685, 0.0), (4686, 0.0), (4687, 0.0), (4688, 0.0), (4689, 0.0), (4690,
 0.0), (4691, 0.0), (4692, 0.0), (4693, 0.0), (4694, 0.0), (4695, 0.0), (4
696, 0.04003203845127179), (4697, 0.0), (4698, 0.0), (4699, 0.0), (4700,
 0.0), (4701, 0.031497039417435604), (4702, 0.0), (4703, 0.0), (4704, 0.03
7267799624996496), (4705, 0.0), (4706, 0.045643546458763846), (4707, 0.0),
(4708, 0.061545745489666376), (4709, 0.0), (4710, 0.0), (4711, 0.0), (471
2, 0.0), (4713, 0.0), (4714, 0.0), (4715, 0.0), (4716, 0.0), (4717, 0.0),
 (4718, 0.0), (4719, 0.0), (4720, 0.0), (4721, 0.0), (4722, 0.0), (4723,
 0.0), (4724, 0.04166666666666668), (4725, 0.0), (4726, 0.0833333333333333
6), (4727, 0.0468292905790847), (4728, 0.04082482904638631), (4729, 0.0),
 (4730, 0.0), (4731, 0.0), (4732, 0.0), (4733, 0.0), (4734, 0.049507377148
83372), (4735, 0.0), (4736, 0.0), (4737, 0.0), (4738, 0.0), (4739, 0.04950
737714883372), (4740, 0.0), (4741, 0.0), (4742, 0.03553345272593508), (474
3, 0.0), (4744, 0.0), (4745, 0.044543540318737404), (4746, 0.0), (4747, 0.
0), (4748, 0.0), (4749, 0.0), (4750, 0.0), (4751, 0.0), (4752, 0.0), (475
3, 0.0468292905790847), (4754, 0.0), (4755, 0.0), (4756, 0.091287092917527
69), (4757, 0.0), (4758, 0.0), (4759, 0.13608276348795434), (4760, 0.0),
 (4761, 0.0), (4762, 0.0), (4763, 0.0), (4764, 0.0), (4765, 0.0), (4766,
 0.0), (4767, 0.0), (4768, 0.0), (4769, 0.058925565098878974), (4770, 0.09
36585811581694), (4771, 0.0), (4772, 0.04166666666666668), (4773, 0.0), (4
774, 0.0), (4775, 0.05270462766947299), (4776, 0.0), (4777, 0.0), (4778,
 0.044543540318737404), (4779, 0.0), (4780, 0.0), (4781, 0.0), (4782, 0.09
128709291752769), (4783, 0.0), (4784, 0.0), (4785, 0.0), (4786, 0.0), (478
7, 0.0), (4788, 0.0), (4789, 0.0), (4790, 0.0), (4791, 0.05455447255899810
4), (4792, 0.0), (4793, 0.0), (4794, 0.0), (4795, 0.0), (4796, 0.0), (479
7, 0.0), (4798, 0.04003203845127179), (4799, 0.0), (4800, 0.04082482904638
631), (4801, 0.0), (4802, 0.0)]

In [47]:

```python
sorted_similar_movies = sorted(similar_movies,key = lambda x:x[1],reverse = True)[1:]
```

In [48]:

```python
i = 0
print('Top 5 similar movies to '+movie_user_likes+' are:')
for element in sorted_similar_movies:
    print(get_title_from_index(element[0]))
    i =  i+1
    if i>=5:
        break
```

```
Top 5 similar movies to The Amazing Spider-Man are:
The Amazing Spider-Man 2
Duma
Highlander: Endgame
Cold Mountain
Spider-Man 2
```

In [49]:

```python
i = 0
print('Top 5 similar movies to '+movie_user_likes+' are:')
for element in sorted_similar_movies:
    print("Movie title:",get_title_from_index(sort_similar_movies[i][0]),',Similarity S
core:',sorted_similar_movies[i][1])
    i =  i+1
    if i>=5:
        break
```

```
Top 5 similar movies to The Amazing Spider-Man are:
Movie title: The Amazing Spider-Man 2 ,Similarity Score: 0.560448538317805
1
Movie title: Duma ,Similarity Score: 0.2553769592276246
Movie title: Highlander: Endgame ,Similarity Score: 0.241522945769824
Movie title: Cold Mountain ,Similarity Score: 0.24077170617153842
Movie title: Spider-Man 2 ,Similarity Score: 0.24019223070763074
```