

SDEV 300 - Project 2

Author: Tyler D Clark

Date: 29 March 2020

This post will serve as documentation for the project 2. Includes 5 test cases for the lottery number application and charts for the outputs of math functions.

lottery_numbers Application

Test Case	Input	Expected Output	Actual Output	Pass?
1	1	Random 3 digit lotto number	Your 3 digit lottery number is: 9 4 0	Yes
2	1	Random 3 digit lotto number	Your 3 digit lottery number is: 0 9 1	Yes
3	2	Random 4 digit lotto number	Your 4 digit lottery number is: 3 0 4 1	Yes
4	4	error	Not a valid response!	Yes
5	d	error	error	n/a; outside instruction

Test Case 1

```
**** Welcome to the Pick-3, Pick-4 lottery number generator ****

Select from the following menu:
1. Generate 3-Digit Lottery number
2. Generate 4-Digit Lottery number
3. Exit the Application
1

Your 3 digit lottery number is:

9 4 0

Select from the following menu:
1. Generate 3-Digit Lottery number
2. Generate 4-Digit Lottery number
3. Exit the Application
█
```

Output in Cloud9 IDE of test case 1 (3-digit lotto number)

Test Case 2

```
9 4 0

Select from the following menu:
1. Generate 3-Digit Lottery number
2. Generate 4-Digit Lottery number
3. Exit the Application
1

Your 3 digit lottery number is:

0 9 1

Select from the following menu:
1. Generate 3-Digit Lottery number
2. Generate 4-Digit Lottery number
3. Exit the Application
█
```

Output in Cloud9 IDE of test case 2 (3-digit lotto number showing correct consecutive use)

Test Case 3

```
0 9 1

Select from the following menu:
1. Generate 3-Digit Lottery number
2. Generate 4-Digit Lottery number
3. Exit the Application
2

Your 4 digit lottery number is:

3 0 4 1

Select from the following menu:
1. Generate 3-Digit Lottery number
2. Generate 4-Digit Lottery number
3. Exit the Application
█
```

Output in Cloud9 IDE of test case 3 (4-digit lotto number)

Test Case 4

```

Your 4 digit lottery number is:

3 0 4 1

Select from the following menu:
1. Generate 3-Digit Lottery number
2. Generate 4-Digit Lottery number
3. Exit the Application
4

Not a valid response!

Select from the following menu:
1. Generate 3-Digit Lottery number
2. Generate 4-Digit Lottery number
3. Exit the Application
█

```

Output in Cloud9 IDE of test case 4 (invalid response)

Test case 5

```

Not a valid response!

Select from the following menu:
1. Generate 3-Digit Lottery number
2. Generate 4-Digit Lottery number
3. Exit the Application
d
Traceback (most recent call last):
  File "/home/ec2-user/environment/lottery_numbers.py", line 23, in <module>
    user_choice = menu() # each run of while loop will grab choice at beginning
  File "/home/ec2-user/environment/lottery_numbers.py", line 10, in menu
    return int(input("\nSelect from the following menu: \n1. Generate 3-Digit Lottery number \n2. Generate 4-Digit "
ValueError: invalid literal for int() with base 10: 'd'

Process exited with code: 0

```

Output in Cloud9 IDE of test case 5 (error with characters)

math_functions application

Sin and cos

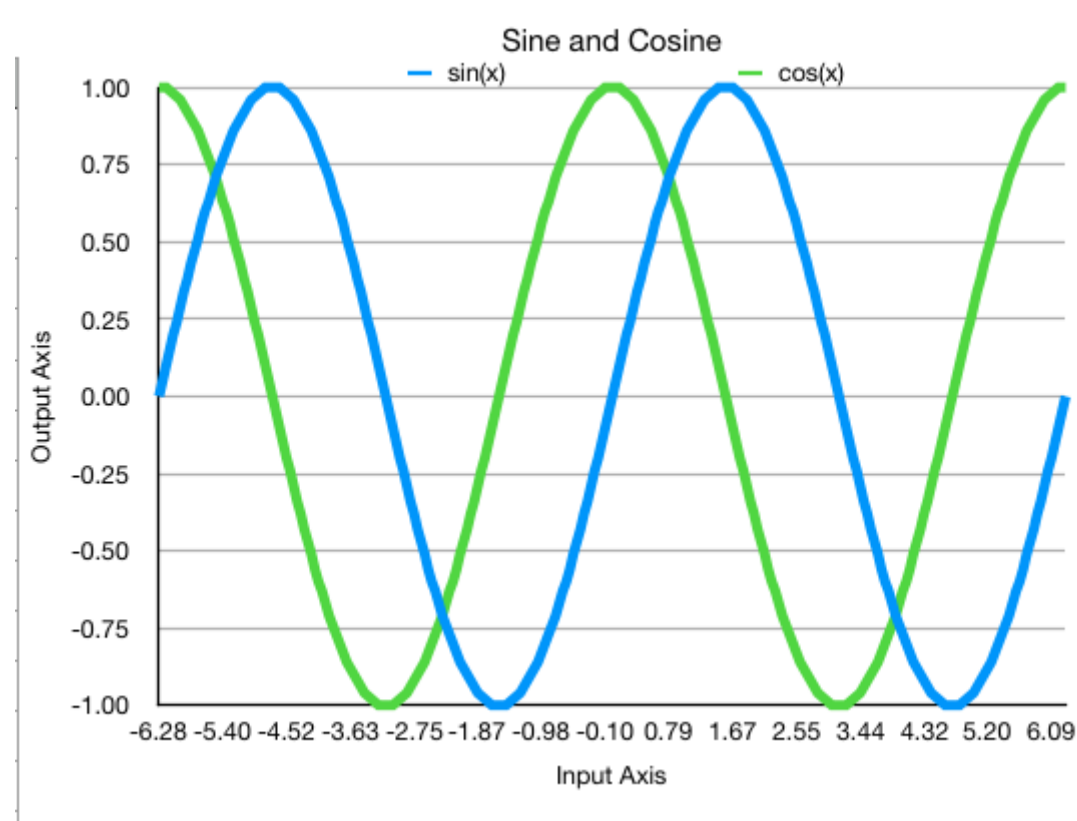


chart of the outputs of the sin and cos functions

Square root and log10

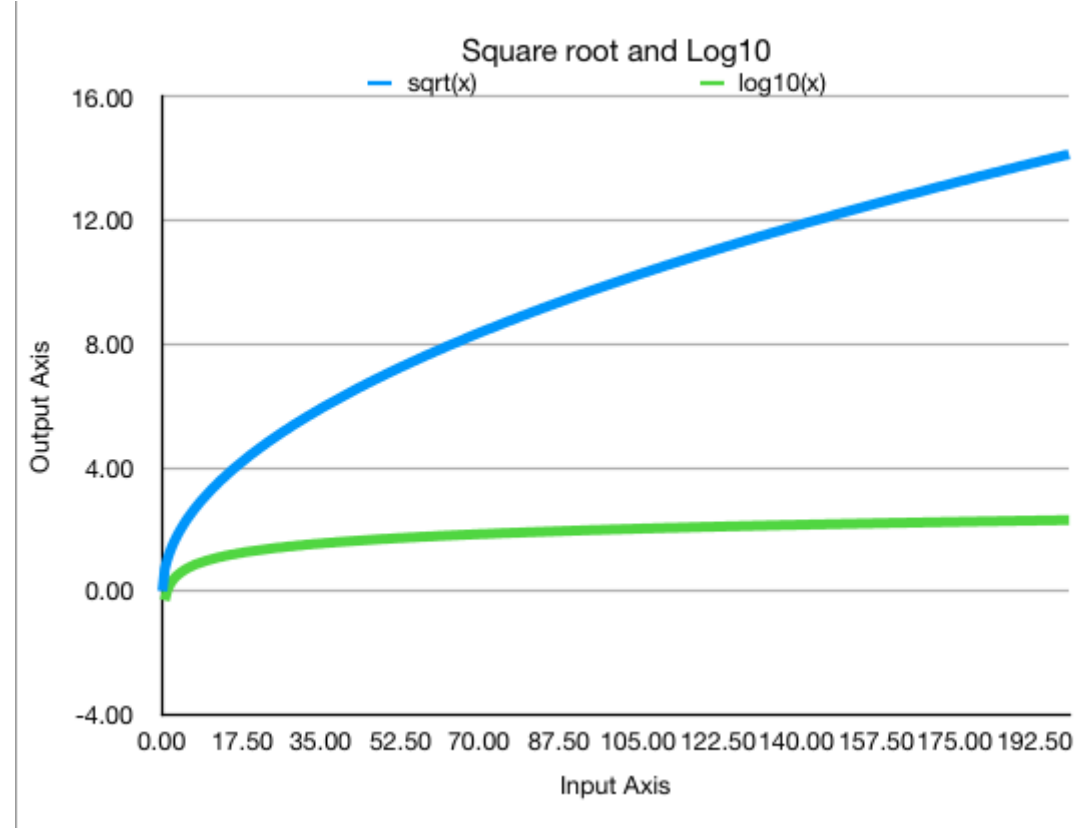


chart of the outputs of the sqrt and log10 functions

Tables of data

(also attached as csv)

x	sin(x)	x	cos(x)	x	sqrt(x)	x	log10(x)
-6.28	0.00	-6.28	1.00	0.00	0.00	0	undefined
-6.23	0.05	-6.23	1.00	0.50	0.71	0.50	-0.30
-6.19	0.10	-6.19	1.00	1.00	1.00	1.00	0.00
-6.14	0.15	-6.14	0.99	1.50	1.22	1.50	0.18
-6.09	0.20	-6.09	0.98	2.00	1.41	2.00	0.30
-6.04	0.24	-6.04	0.97	2.50	1.58	2.50	0.40
-5.99	0.29	-5.99	0.96	3.00	1.73	3.00	0.48
-5.94	0.34	-5.94	0.94	3.50	1.87	3.50	0.54
-5.89	0.38	-5.89	0.92	4.00	2.00	4.00	0.60
-5.84	0.43	-5.84	0.90	4.50	2.12	4.50	0.65
-5.79	0.47	-5.79	0.88	5.00	2.24	5.00	0.70
-5.74	0.51	-5.74	0.86	5.50	2.35	5.50	0.74
-5.69	0.56	-5.69	0.83	6.00	2.45	6.00	0.78
-5.65	0.60	-5.65	0.80	6.50	2.55	6.50	0.81
-5.60	0.63	-5.60	0.77	7.00	2.65	7.00	0.85
-5.55	0.67	-5.55	0.74	7.50	2.74	7.50	0.88
-5.50	0.71	-5.50	0.71	8.00	2.83	8.00	0.90
-5.45	0.74	-5.45	0.67	8.50	2.92	8.50	0.93
-5.40	0.77	-5.40	0.63	9.00	3.00	9.00	0.95
-5.35	0.80	-5.35	0.60	9.50	3.08	9.50	0.98
-5.30	0.83	-5.30	0.56	10.00	3.16	10.00	1.00
-5.25	0.86	-5.25	0.51	10.50	3.24	10.50	1.02
-5.20	0.88	-5.20	0.47	11.00	3.32	11.00	1.04
-5.15	0.90	-5.15	0.43	11.50	3.39	11.50	1.06
-5.11	0.92	-5.11	0.38	12.00	3.46	12.00	1.08
-5.06	0.94	-5.06	0.34	12.50	3.54	12.50	1.10
-5.01	0.96	-5.01	0.29	13.00	3.61	13.00	1.11
-4.96	0.97	-4.96	0.24	13.50	3.67	13.50	1.13
-4.91	0.98	-4.91	0.20	14.00	3.74	14.00	1.15
-4.86	0.99	-4.86	0.15	14.50	3.81	14.50	1.16

x	sin(x)	x	cos(x)	x	sqrt(x)	x	log10(x)
-4.81	1.00	-4.81	0.10	15.00	3.87	15.00	1.18
-4.76	1.00	-4.76	0.05	15.50	3.94	15.50	1.19
-4.71	1.00	-4.71	0.00	16.00	4.00	16.00	1.20
-4.66	1.00	-4.66	-0.05	16.50	4.06	16.50	1.22
-4.61	1.00	-4.61	-0.10	17.00	4.12	17.00	1.23
-4.57	0.99	-4.57	-0.15	17.50	4.18	17.50	1.24
-4.52	0.98	-4.52	-0.20	18.00	4.24	18.00	1.26
-4.47	0.97	-4.47	-0.24	18.50	4.30	18.50	1.27
-4.42	0.96	-4.42	-0.29	19.00	4.36	19.00	1.28
-4.37	0.94	-4.37	-0.34	19.50	4.42	19.50	1.29
-4.32	0.92	-4.32	-0.38	20.00	4.47	20.00	1.30
-4.27	0.90	-4.27	-0.43	20.50	4.53	20.50	1.31
-4.22	0.88	-4.22	-0.47	21.00	4.58	21.00	1.32
-4.17	0.86	-4.17	-0.51	21.50	4.64	21.50	1.33
-4.12	0.83	-4.12	-0.56	22.00	4.69	22.00	1.34
-4.07	0.80	-4.07	-0.60	22.50	4.74	22.50	1.35
-4.03	0.77	-4.03	-0.63	23.00	4.80	23.00	1.36
-3.98	0.74	-3.98	-0.67	23.50	4.85	23.50	1.37
-3.93	0.71	-3.93	-0.71	24.00	4.90	24.00	1.38
-3.88	0.67	-3.88	-0.74	24.50	4.95	24.50	1.39
-3.83	0.63	-3.83	-0.77	25.00	5.00	25.00	1.40
-3.78	0.60	-3.78	-0.80	25.50	5.05	25.50	1.41
-3.73	0.56	-3.73	-0.83	26.00	5.10	26.00	1.41
-3.68	0.51	-3.68	-0.86	26.50	5.15	26.50	1.42
-3.63	0.47	-3.63	-0.88	27.00	5.20	27.00	1.43
-3.58	0.43	-3.58	-0.90	27.50	5.24	27.50	1.44
-3.53	0.38	-3.53	-0.92	28.00	5.29	28.00	1.45
-3.49	0.34	-3.49	-0.94	28.50	5.34	28.50	1.45
-3.44	0.29	-3.44	-0.96	29.00	5.39	29.00	1.46
-3.39	0.24	-3.39	-0.97	29.50	5.43	29.50	1.47

x	sin(x)	x	cos(x)	x	sqrt(x)	x	log10(x)
-3.34	0.20	-3.34	-0.98	30.00	5.48	30.00	1.48
-3.29	0.15	-3.29	-0.99	30.50	5.52	30.50	1.48
-3.24	0.10	-3.24	-1.00	31.00	5.57	31.00	1.49
-3.19	0.05	-3.19	-1.00	31.50	5.61	31.50	1.50
-3.14	0.00	-3.14	-1.00	32.00	5.66	32.00	1.51
-3.09	-0.05	-3.09	-1.00	32.50	5.70	32.50	1.51
-3.04	-0.10	-3.04	-1.00	33.00	5.74	33.00	1.52
-2.99	-0.15	-2.99	-0.99	33.50	5.79	33.50	1.53
-2.95	-0.20	-2.95	-0.98	34.00	5.83	34.00	1.53
-2.90	-0.24	-2.90	-0.97	34.50	5.87	34.50	1.54
-2.85	-0.29	-2.85	-0.96	35.00	5.92	35.00	1.54
-2.80	-0.34	-2.80	-0.94	35.50	5.96	35.50	1.55
-2.75	-0.38	-2.75	-0.92	36.00	6.00	36.00	1.56
-2.70	-0.43	-2.70	-0.90	36.50	6.04	36.50	1.56
-2.65	-0.47	-2.65	-0.88	37.00	6.08	37.00	1.57
-2.60	-0.51	-2.60	-0.86	37.50	6.12	37.50	1.57
-2.55	-0.56	-2.55	-0.83	38.00	6.16	38.00	1.58
-2.50	-0.60	-2.50	-0.80	38.50	6.20	38.50	1.59
-2.45	-0.63	-2.45	-0.77	39.00	6.24	39.00	1.59
-2.41	-0.67	-2.41	-0.74	39.50	6.28	39.50	1.60
-2.36	-0.71	-2.36	-0.71	40.00	6.32	40.00	1.60
-2.31	-0.74	-2.31	-0.67	40.50	6.36	40.50	1.61
-2.26	-0.77	-2.26	-0.63	41.00	6.40	41.00	1.61
-2.21	-0.80	-2.21	-0.60	41.50	6.44	41.50	1.62
-2.16	-0.83	-2.16	-0.56	42.00	6.48	42.00	1.62
-2.11	-0.86	-2.11	-0.51	42.50	6.52	42.50	1.63
-2.06	-0.88	-2.06	-0.47	43.00	6.56	43.00	1.63
-2.01	-0.90	-2.01	-0.43	43.50	6.60	43.50	1.64
-1.96	-0.92	-1.96	-0.38	44.00	6.63	44.00	1.64
-1.91	-0.94	-1.91	-0.34	44.50	6.67	44.50	1.65

x	sin(x)	x	cos(x)	x	sqrt(x)	x	log10(x)
-1.87	-0.96	-1.87	-0.29	45.00	6.71	45.00	1.65
-1.82	-0.97	-1.82	-0.24	45.50	6.75	45.50	1.66
-1.77	-0.98	-1.77	-0.20	46.00	6.78	46.00	1.66
-1.72	-0.99	-1.72	-0.15	46.50	6.82	46.50	1.67
-1.67	-1.00	-1.67	-0.10	47.00	6.86	47.00	1.67
-1.62	-1.00	-1.62	-0.05	47.50	6.89	47.50	1.68
-1.57	-1.00	-1.57	0.00	48.00	6.93	48.00	1.68
-1.52	-1.00	-1.52	0.05	48.50	6.96	48.50	1.69
-1.47	-1.00	-1.47	0.10	49.00	7.00	49.00	1.69
-1.42	-0.99	-1.42	0.15	49.50	7.04	49.50	1.69
-1.37	-0.98	-1.37	0.20	50.00	7.07	50.00	1.70
-1.33	-0.97	-1.33	0.24	50.50	7.11	50.50	1.70
-1.28	-0.96	-1.28	0.29	51.00	7.14	51.00	1.71
-1.23	-0.94	-1.23	0.34	51.50	7.18	51.50	1.71
-1.18	-0.92	-1.18	0.38	52.00	7.21	52.00	1.72
-1.13	-0.90	-1.13	0.43	52.50	7.25	52.50	1.72
-1.08	-0.88	-1.08	0.47	53.00	7.28	53.00	1.72
-1.03	-0.86	-1.03	0.51	53.50	7.31	53.50	1.73
-0.98	-0.83	-0.98	0.56	54.00	7.35	54.00	1.73
-0.93	-0.80	-0.93	0.60	54.50	7.38	54.50	1.74
-0.88	-0.77	-0.88	0.63	55.00	7.42	55.00	1.74
-0.83	-0.74	-0.83	0.67	55.50	7.45	55.50	1.74
-0.79	-0.71	-0.79	0.71	56.00	7.48	56.00	1.75
-0.74	-0.67	-0.74	0.74	56.50	7.52	56.50	1.75
-0.69	-0.63	-0.69	0.77	57.00	7.55	57.00	1.76
-0.64	-0.60	-0.64	0.80	57.50	7.58	57.50	1.76
-0.59	-0.56	-0.59	0.83	58.00	7.62	58.00	1.76
-0.54	-0.51	-0.54	0.86	58.50	7.65	58.50	1.77
-0.49	-0.47	-0.49	0.88	59.00	7.68	59.00	1.77
-0.44	-0.43	-0.44	0.90	59.50	7.71	59.50	1.77

x	sin(x)	x	cos(x)	x	sqrt(x)	x	log10(x)
-0.39	-0.38	-0.39	0.92	60.00	7.75	60.00	1.78
-0.34	-0.34	-0.34	0.94	60.50	7.78	60.50	1.78
-0.29	-0.29	-0.29	0.96	61.00	7.81	61.00	1.79
-0.25	-0.24	-0.25	0.97	61.50	7.84	61.50	1.79
-0.20	-0.20	-0.20	0.98	62.00	7.87	62.00	1.79
-0.15	-0.15	-0.15	0.99	62.50	7.91	62.50	1.80
-0.10	-0.10	-0.10	1.00	63.00	7.94	63.00	1.80
-0.05	-0.05	-0.05	1.00	63.50	7.97	63.50	1.80
0.00	0.00	0.00	1.00	64.00	8.00	64.00	1.81
0.05	0.05	0.05	1.00	64.50	8.03	64.50	1.81
0.10	0.10	0.10	1.00	65.00	8.06	65.00	1.81
0.15	0.15	0.15	0.99	65.50	8.09	65.50	1.82
0.20	0.20	0.20	0.98	66.00	8.12	66.00	1.82
0.25	0.24	0.25	0.97	66.50	8.15	66.50	1.82
0.29	0.29	0.29	0.96	67.00	8.19	67.00	1.83
0.34	0.34	0.34	0.94	67.50	8.22	67.50	1.83
0.39	0.38	0.39	0.92	68.00	8.25	68.00	1.83
0.44	0.43	0.44	0.90	68.50	8.28	68.50	1.84
0.49	0.47	0.49	0.88	69.00	8.31	69.00	1.84
0.54	0.51	0.54	0.86	69.50	8.34	69.50	1.84
0.59	0.56	0.59	0.83	70.00	8.37	70.00	1.85
0.64	0.60	0.64	0.80	70.50	8.40	70.50	1.85
0.69	0.63	0.69	0.77	71.00	8.43	71.00	1.85
0.74	0.67	0.74	0.74	71.50	8.46	71.50	1.85
0.79	0.71	0.79	0.71	72.00	8.49	72.00	1.86
0.83	0.74	0.83	0.67	72.50	8.51	72.50	1.86
0.88	0.77	0.88	0.63	73.00	8.54	73.00	1.86
0.93	0.80	0.93	0.60	73.50	8.57	73.50	1.87
0.98	0.83	0.98	0.56	74.00	8.60	74.00	1.87
1.03	0.86	1.03	0.51	74.50	8.63	74.50	1.87

x	sin(x)	x	cos(x)	x	sqrt(x)	x	log10(x)
1.08	0.88	1.08	0.47	75.00	8.66	75.00	1.88
1.13	0.90	1.13	0.43	75.50	8.69	75.50	1.88
1.18	0.92	1.18	0.38	76.00	8.72	76.00	1.88
1.23	0.94	1.23	0.34	76.50	8.75	76.50	1.88
1.28	0.96	1.28	0.29	77.00	8.77	77.00	1.89
1.33	0.97	1.33	0.24	77.50	8.80	77.50	1.89
1.37	0.98	1.37	0.20	78.00	8.83	78.00	1.89
1.42	0.99	1.42	0.15	78.50	8.86	78.50	1.89
1.47	1.00	1.47	0.10	79.00	8.89	79.00	1.90
1.52	1.00	1.52	0.05	79.50	8.92	79.50	1.90
1.57	1.00	1.57	0.00	80.00	8.94	80.00	1.90
1.62	1.00	1.62	-0.05	80.50	8.97	80.50	1.91
1.67	1.00	1.67	-0.10	81.00	9.00	81.00	1.91
1.72	0.99	1.72	-0.15	81.50	9.03	81.50	1.91
1.77	0.98	1.77	-0.20	82.00	9.06	82.00	1.91
1.82	0.97	1.82	-0.24	82.50	9.08	82.50	1.92
1.87	0.96	1.87	-0.29	83.00	9.11	83.00	1.92
1.91	0.94	1.91	-0.34	83.50	9.14	83.50	1.92
1.96	0.92	1.96	-0.38	84.00	9.17	84.00	1.92
2.01	0.90	2.01	-0.43	84.50	9.19	84.50	1.93
2.06	0.88	2.06	-0.47	85.00	9.22	85.00	1.93
2.11	0.86	2.11	-0.51	85.50	9.25	85.50	1.93
2.16	0.83	2.16	-0.56	86.00	9.27	86.00	1.93
2.21	0.80	2.21	-0.60	86.50	9.30	86.50	1.94
2.26	0.77	2.26	-0.63	87.00	9.33	87.00	1.94
2.31	0.74	2.31	-0.67	87.50	9.35	87.50	1.94
2.36	0.71	2.36	-0.71	88.00	9.38	88.00	1.94
2.41	0.67	2.41	-0.74	88.50	9.41	88.50	1.95
2.45	0.63	2.45	-0.77	89.00	9.43	89.00	1.95
2.50	0.60	2.50	-0.80	89.50	9.46	89.50	1.95

x	sin(x)	x	cos(x)	x	sqrt(x)	x	log10(x)
2.55	0.56	2.55	-0.83	90.00	9.49	90.00	1.95
2.60	0.51	2.60	-0.86	90.50	9.51	90.50	1.96
2.65	0.47	2.65	-0.88	91.00	9.54	91.00	1.96
2.70	0.43	2.70	-0.90	91.50	9.57	91.50	1.96
2.75	0.38	2.75	-0.92	92.00	9.59	92.00	1.96
2.80	0.34	2.80	-0.94	92.50	9.62	92.50	1.97
2.85	0.29	2.85	-0.96	93.00	9.64	93.00	1.97
2.90	0.24	2.90	-0.97	93.50	9.67	93.50	1.97
2.95	0.20	2.95	-0.98	94.00	9.70	94.00	1.97
2.99	0.15	2.99	-0.99	94.50	9.72	94.50	1.98
3.04	0.10	3.04	-1.00	95.00	9.75	95.00	1.98
3.09	0.05	3.09	-1.00	95.50	9.77	95.50	1.98
3.14	0.00	3.14	-1.00	96.00	9.80	96.00	1.98
3.19	-0.05	3.19	-1.00	96.50	9.82	96.50	1.98
3.24	-0.10	3.24	-1.00	97.00	9.85	97.00	1.99
3.29	-0.15	3.29	-0.99	97.50	9.87	97.50	1.99
3.34	-0.20	3.34	-0.98	98.00	9.90	98.00	1.99
3.39	-0.24	3.39	-0.97	98.50	9.92	98.50	1.99
3.44	-0.29	3.44	-0.96	99.00	9.95	99.00	2.00
3.49	-0.34	3.49	-0.94	99.50	9.97	99.50	2.00
3.53	-0.38	3.53	-0.92	100.00	10.00	100.00	2.00
3.58	-0.43	3.58	-0.90	100.50	10.02	100.50	2.00
3.63	-0.47	3.63	-0.88	101.00	10.05	101.00	2.00
3.68	-0.51	3.68	-0.86	101.50	10.07	101.50	2.01
3.73	-0.56	3.73	-0.83	102.00	10.10	102.00	2.01
3.78	-0.60	3.78	-0.80	102.50	10.12	102.50	2.01
3.83	-0.63	3.83	-0.77	103.00	10.15	103.00	2.01
3.88	-0.67	3.88	-0.74	103.50	10.17	103.50	2.01
3.93	-0.71	3.93	-0.71	104.00	10.20	104.00	2.02
3.98	-0.74	3.98	-0.67	104.50	10.22	104.50	2.02

x	sin(x)	x	cos(x)	x	sqrt(x)	x	log10(x)
4.03	-0.77	4.03	-0.63	105.00	10.25	105.00	2.02
4.07	-0.80	4.07	-0.60	105.50	10.27	105.50	2.02
4.12	-0.83	4.12	-0.56	106.00	10.30	106.00	2.03
4.17	-0.86	4.17	-0.51	106.50	10.32	106.50	2.03
4.22	-0.88	4.22	-0.47	107.00	10.34	107.00	2.03
4.27	-0.90	4.27	-0.43	107.50	10.37	107.50	2.03
4.32	-0.92	4.32	-0.38	108.00	10.39	108.00	2.03
4.37	-0.94	4.37	-0.34	108.50	10.42	108.50	2.04
4.42	-0.96	4.42	-0.29	109.00	10.44	109.00	2.04
4.47	-0.97	4.47	-0.24	109.50	10.46	109.50	2.04
4.52	-0.98	4.52	-0.20	110.00	10.49	110.00	2.04
4.57	-0.99	4.57	-0.15	110.50	10.51	110.50	2.04
4.61	-1.00	4.61	-0.10	111.00	10.54	111.00	2.05
4.66	-1.00	4.66	-0.05	111.50	10.56	111.50	2.05
4.71	-1.00	4.71	0.00	112.00	10.58	112.00	2.05
4.76	-1.00	4.76	0.05	112.50	10.61	112.50	2.05
4.81	-1.00	4.81	0.10	113.00	10.63	113.00	2.05
4.86	-0.99	4.86	0.15	113.50	10.65	113.50	2.05
4.91	-0.98	4.91	0.20	114.00	10.68	114.00	2.06
4.96	-0.97	4.96	0.24	114.50	10.70	114.50	2.06
5.01	-0.96	5.01	0.29	115.00	10.72	115.00	2.06
5.06	-0.94	5.06	0.34	115.50	10.75	115.50	2.06
5.11	-0.92	5.11	0.38	116.00	10.77	116.00	2.06
5.15	-0.90	5.15	0.43	116.50	10.79	116.50	2.07
5.20	-0.88	5.20	0.47	117.00	10.82	117.00	2.07
5.25	-0.86	5.25	0.51	117.50	10.84	117.50	2.07
5.30	-0.83	5.30	0.56	118.00	10.86	118.00	2.07
5.35	-0.80	5.35	0.60	118.50	10.89	118.50	2.07
5.40	-0.77	5.40	0.63	119.00	10.91	119.00	2.08
5.45	-0.74	5.45	0.67	119.50	10.93	119.50	2.08

x	sin(x)	x	cos(x)	x	sqrt(x)	x	log10(x)
5.50	-0.71	5.50	0.71	120.00	10.95	120.00	2.08
5.55	-0.67	5.55	0.74	120.50	10.98	120.50	2.08
5.60	-0.63	5.60	0.77	121.00	11.00	121.00	2.08
5.65	-0.60	5.65	0.80	121.50	11.02	121.50	2.08
5.69	-0.56	5.69	0.83	122.00	11.05	122.00	2.09
5.74	-0.51	5.74	0.86	122.50	11.07	122.50	2.09
5.79	-0.47	5.79	0.88	123.00	11.09	123.00	2.09
5.84	-0.43	5.84	0.90	123.50	11.11	123.50	2.09
5.89	-0.38	5.89	0.92	124.00	11.14	124.00	2.09
5.94	-0.34	5.94	0.94	124.50	11.16	124.50	2.10
5.99	-0.29	5.99	0.96	125.00	11.18	125.00	2.10
6.04	-0.24	6.04	0.97	125.50	11.20	125.50	2.10
6.09	-0.20	6.09	0.98	126.00	11.22	126.00	2.10
6.14	-0.15	6.14	0.99	126.50	11.25	126.50	2.10
6.19	-0.10	6.19	1.00	127.00	11.27	127.00	2.10
6.23	-0.05	6.23	1.00	127.50	11.29	127.50	2.11
6.28	0.00	6.28	1.00	128.00	11.31	128.00	2.11
				128.50	11.34	128.50	2.11
				129.00	11.36	129.00	2.11
				129.50	11.38	129.50	2.11
				130.00	11.40	130.00	2.11
				130.50	11.42	130.50	2.12
				131.00	11.45	131.00	2.12
				131.50	11.47	131.50	2.12
				132.00	11.49	132.00	2.12
				132.50	11.51	132.50	2.12
				133.00	11.53	133.00	2.12
				133.50	11.55	133.50	2.13
				134.00	11.58	134.00	2.13
				134.50	11.60	134.50	2.13

x	sin(x)	x	cos(x)	x	sqrt(x)	x	log10(x)
				135.00	11.62	135.00	2.13
				135.50	11.64	135.50	2.13
				136.00	11.66	136.00	2.13
				136.50	11.68	136.50	2.14
				137.00	11.70	137.00	2.14
				137.50	11.73	137.50	2.14
				138.00	11.75	138.00	2.14
				138.50	11.77	138.50	2.14
				139.00	11.79	139.00	2.14
				139.50	11.81	139.50	2.14
				140.00	11.83	140.00	2.15
				140.50	11.85	140.50	2.15
				141.00	11.87	141.00	2.15
				141.50	11.90	141.50	2.15
				142.00	11.92	142.00	2.15
				142.50	11.94	142.50	2.15
				143.00	11.96	143.00	2.16
				143.50	11.98	143.50	2.16
				144.00	12.00	144.00	2.16
				144.50	12.02	144.50	2.16
				145.00	12.04	145.00	2.16
				145.50	12.06	145.50	2.16
				146.00	12.08	146.00	2.16
				146.50	12.10	146.50	2.17
				147.00	12.12	147.00	2.17
				147.50	12.14	147.50	2.17
				148.00	12.17	148.00	2.17
				148.50	12.19	148.50	2.17
				149.00	12.21	149.00	2.17
				149.50	12.23	149.50	2.17

x	sin(x)	x	cos(x)	x	sqrt(x)	x	log10(x)
				150.00	12.25	150.00	2.18
				150.50	12.27	150.50	2.18
				151.00	12.29	151.00	2.18
				151.50	12.31	151.50	2.18
				152.00	12.33	152.00	2.18
				152.50	12.35	152.50	2.18
				153.00	12.37	153.00	2.18
				153.50	12.39	153.50	2.19
				154.00	12.41	154.00	2.19
				154.50	12.43	154.50	2.19
				155.00	12.45	155.00	2.19
				155.50	12.47	155.50	2.19
				156.00	12.49	156.00	2.19
				156.50	12.51	156.50	2.19
				157.00	12.53	157.00	2.20
				157.50	12.55	157.50	2.20
				158.00	12.57	158.00	2.20
				158.50	12.59	158.50	2.20
				159.00	12.61	159.00	2.20
				159.50	12.63	159.50	2.20
				160.00	12.65	160.00	2.20
				160.50	12.67	160.50	2.21
				161.00	12.69	161.00	2.21
				161.50	12.71	161.50	2.21
				162.00	12.73	162.00	2.21
				162.50	12.75	162.50	2.21
				163.00	12.77	163.00	2.21
				163.50	12.79	163.50	2.21
				164.00	12.81	164.00	2.21
				164.50	12.83	164.50	2.22

x	sin(x)	x	cos(x)	x	sqrt(x)	x	log10(x)
				165.00	12.85	165.00	2.22
				165.50	12.86	165.50	2.22
				166.00	12.88	166.00	2.22
				166.50	12.90	166.50	2.22
				167.00	12.92	167.00	2.22
				167.50	12.94	167.50	2.22
				168.00	12.96	168.00	2.23
				168.50	12.98	168.50	2.23
				169.00	13.00	169.00	2.23
				169.50	13.02	169.50	2.23
				170.00	13.04	170.00	2.23
				170.50	13.06	170.50	2.23
				171.00	13.08	171.00	2.23
				171.50	13.10	171.50	2.23
				172.00	13.11	172.00	2.24
				172.50	13.13	172.50	2.24
				173.00	13.15	173.00	2.24
				173.50	13.17	173.50	2.24
				174.00	13.19	174.00	2.24
				174.50	13.21	174.50	2.24
				175.00	13.23	175.00	2.24
				175.50	13.25	175.50	2.24
				176.00	13.27	176.00	2.25
				176.50	13.29	176.50	2.25
				177.00	13.30	177.00	2.25
				177.50	13.32	177.50	2.25
				178.00	13.34	178.00	2.25
				178.50	13.36	178.50	2.25
				179.00	13.38	179.00	2.25
				179.50	13.40	179.50	2.25

x	sin(x)	x	cos(x)	x	sqrt(x)	x	log10(x)
				180.00	13.42	180.00	2.26
				180.50	13.44	180.50	2.26
				181.00	13.45	181.00	2.26
				181.50	13.47	181.50	2.26
				182.00	13.49	182.00	2.26
				182.50	13.51	182.50	2.26
				183.00	13.53	183.00	2.26
				183.50	13.55	183.50	2.26
				184.00	13.56	184.00	2.26
				184.50	13.58	184.50	2.27
				185.00	13.60	185.00	2.27
				185.50	13.62	185.50	2.27
				186.00	13.64	186.00	2.27
				186.50	13.66	186.50	2.27
				187.00	13.67	187.00	2.27
				187.50	13.69	187.50	2.27
				188.00	13.71	188.00	2.27
				188.50	13.73	188.50	2.28
				189.00	13.75	189.00	2.28
				189.50	13.77	189.50	2.28
				190.00	13.78	190.00	2.28
				190.50	13.80	190.50	2.28
				191.00	13.82	191.00	2.28
				191.50	13.84	191.50	2.28
				192.00	13.86	192.00	2.28
				192.50	13.87	192.50	2.28
				193.00	13.89	193.00	2.29
				193.50	13.91	193.50	2.29
				194.00	13.93	194.00	2.29
				194.50	13.95	194.50	2.29

x	sin(x)	x	cos(x)	x	sqrt(x)	x	log10(x)
				195.00	13.96	195.00	2.29
				195.50	13.98	195.50	2.29
				196.00	14.00	196.00	2.29
				196.50	14.02	196.50	2.29
				197.00	14.04	197.00	2.29
				197.50	14.05	197.50	2.30
				198.00	14.07	198.00	2.30
				198.50	14.09	198.50	2.30
				199.00	14.11	199.00	2.30
				199.50	14.12	199.50	2.30
				200.00	14.14	200.00	2.30