C:\Anaconda\envs\tensorflow\python.exe "C:/Users/yongping/python work/new j60 sets experiment with 480 cases.py"

aver\_result\_1000\_time 201.9308858424425 seconds

aver\_result\_1000\_deviation 2.0156293550781665%

k\_1000 0

opm 85

the random choice case path in j60 ./rcpsp/j60.sm/j6010\_1.sm case j6010\_1.sm

v5 4 44.64087677001953 s [85, 86] 0.0 [0, 0, 0, 0, 1, 1, 7, 9, 9, 28, 10, 16, 5, 18, 13, 50, 18, 22, 1, 42, 25, 22, 35, 7, 35, 17, 18, 38, 58, 13, 30, 32, 17, 32, 41, 38, 49, 49, 46, 26, 25, 30, 55, 42, 50, 53, 28, 55, 57, 10, 57, 65, 43, 49, 61, 67, 58, 17, 67, 76, 63, 85] 0

k\_1000 1

opm 73

the random choice case path in j60 ./rcpsp/j60.sm/j6010\_10.sm case j6010\_10.sm

v5 1 7.739068031311035 s [73, 102] 0.0 [0, 0, 0, 0, 8, 8, 8, 9, 11, 9, 19, 18, 18, 19, 20, 25, 12, 24, 22, 9, 18, 24, 19, 24, 5, 29, 13, 24, 29, 25, 32, 12, 26, 34, 17, 34, 36, 36, 39, 46, 11, 32, 41, 47, 51, 48, 41, 41, 26, 51, 58, 49, 17, 41, 49, 55, 57, 49, 54, 55, 66, 73] 0

k\_1000 2

opm 62

the random choice case path in j60 ./rcpsp/j60.sm/j6010\_2.sm case j6010\_2.sm

v5 37 188.03259587287903 s [62, 93] 0.0 [0, 0, 0, 0, 7, 37, 7, 9, 22, 7, 12, 9, 10, 9, 9, 31, 9, 18, 23, 19, 17, 18, 25, 12, 29, 27, 13, 16, 29, 22, 10, 32, 20, 18, 20, 18, 32, 22, 16, 33, 18, 16, 22, 25, 25, 12, 39, 30, 30, 39, 27, 30, 41, 36, 36, 51, 33, 45, 41, 46, 55, 62] 0

k\_1000 3

opm 72

the random choice case path in j60 ./rcpsp/j60.sm/j6010\_3.sm case j6010\_3.sm

v5 42 355.4815158843994 s [72, 77] 0.0 [0, 0, 0, 0, 4, 4, 8, 4, 3, 8, 6, 10, 18, 21, 13, 30, 33, 30, 10, 8, 31, 37, 17, 31, 41, 18, 37, 18, 20, 23, 28, 27, 17, 13, 47, 27, 40, 21, 17, 40, 40, 51, 48, 18, 48, 40, 57, 34, 52, 53, 41, 57, 62, 53, 8, 34, 63, 67, 71, 60, 50, 72] 0

k\_1000 4

opm 80

the random choice case path in j60 ./rcpsp/j60.sm/j6010\_4.sm case j6010\_4.sm

v5 1 9.35765528678894 s [80, 89] 0.0 [0, 0, 0, 0, 6, 15, 18, 22, 22, 25, 32, 33, 6, 25, 29, 12, 33, 2, 29, 2, 13, 6, 21, 33, 8, 13, 36, 25, 3, 25, 42, 25, 18, 13, 50, 52, 61, 10, 41, 18, 23, 2, 35, 39, 23, 39, 42, 53, 59, 21, 28, 32, 44, 60, 41, 63, 68, 53, 55, 72, 62, 80] 0

k\_1000 5

opm 79

the random choice case path in j60 ./rcpsp/j60.sm/j6010\_5.sm case j6010\_5.sm

v5 1 7.388872861862183 s [79, 85] 0.0 [0, 0, 0, 0, 3, 8, 8, 24, 10, 10, 35, 18, 36, 21, 18, 17, 3, 32, 13, 18, 50, 27, 27, 57, 32, 24, 35, 10, 15, 47, 13, 42, 37, 15, 45, 37, 3, 64, 54, 47, 46, 36, 46, 50, 55, 59, 44, 43, 62, 27, 17, 54, 62, 72, 59, 73, 64, 70, 74, 54, 78, 79] 0

k\_1000 6

opm 67

the random choice case path in j60 ./rcpsp/j60.sm/j6010\_6.sm case j6010\_6.sm

v5 99 598.0845758914948 s [71, 84] 5.970149253731343 [0, 0, 0, 0, 2, 5, 9, 11, 7, 2, 22, 2, 9, 7, 11, 12, 9, 16, 18, 18, 12, 21, 12, 10, 11, 28, 18, 31, 22, 28, 35, 32, 31, 20, 11, 32, 28, 18, 41, 38, 38, 20, 44, 31, 30, 42, 48, 52, 52, 32, 42, 41, 32, 41, 47, 47, 56, 54, 63, 63, 62, 71] 0

k\_1000 7

opm 69

the random choice case path in j60 ./rcpsp/j60.sm/j6010\_7.sm case j6010\_7.sm

v5 122 601.1133818626404 s [71, 94] 2.898550724637681 [0, 0, 0, 0, 10, 8, 10, 9, 9, 11, 16, 17, 22, 31, 15, 28, 19, 22, 19, 25, 24, 12, 24, 11, 25, 22, 16, 36, 39, 30, 17, 16, 27, 20, 37, 28, 24, 24, 31, 39, 46, 35, 44, 8, 12, 30, 35, 43, 45, 46, 51, 37, 48, 48, 54, 37, 54, 53, 61, 58, 59, 71] 0

k\_1000 8

opm 65

the random choice case path in j60 ./rcpsp/j60.sm/j6010\_8.sm case j6010\_8.sm

v5 137 601.3634083271027 s [66, 75] 1.5384615384615385 [0, 0, 0, 0, 4, 8, 7, 8, 15, 3, 15, 7, 8, 18, 11, 24, 24, 13, 4, 18, 11, 15, 22, 32, 29, 21, 38, 35, 5, 15, 29, 7, 16, 35, 29, 27, 42, 10, 5, 9, 31, 35, 40, 48, 16, 29, 38, 22, 21, 49, 41, 42, 35, 31, 40, 48, 52, 49, 61, 46, 56, 66] 0

k\_1000 9

opm 73

the random choice case path in j60 ./rcpsp/j60.sm/j6010\_9.sm case j6010\_9.sm

v5 72 602.2513873577118 s [82, 141] 12.32876712328767 [0, 0, 0, 0, 5, 10, 10, 12, 26, 21, 9, 12, 9, 14, 20, 32, 17, 27, 20, 9, 30, 34, 27, 21, 2, 26, 29, 40, 34, 17, 36, 30, 48, 50, 36, 26, 40, 26, 46, 36, 41, 31, 50, 38, 17, 50, 50, 36, 34, 44, 49, 56, 60, 55, 57, 63, 60, 65, 73, 73, 44, 82] 0

k\_1000 10

opm 71

the random choice case path in j60 ./rcpsp/j60.sm/j6011\_1.sm case j6011\_1.sm

v5 1 5.385935306549072 s [71, 77] 0.0 [0, 0, 0, 0, 9, 3, 3, 9, 9, 13, 15, 17, 22, 13, 13, 13, 23, 22, 17, 31, 17, 10, 25, 9, 26, 41, 11, 41, 47, 17, 13, 15, 25, 27, 9, 31, 13, 29, 22, 3, 22, 33, 33, 25, 39, 47, 33, 38, 47, 56, 47, 46, 41, 51, 57, 55, 38, 51, 67, 61, 59, 71] 0

k\_1000 11

opm 58

the random choice case path in j60 ./rcpsp/j60.sm/j6011\_10.sm case j6011\_10.sm

v5 1 3.354236602783203 s [58, 73] 0.0 [0, 0, 0, 0, 1, 1, 5, 14, 1, 8, 5, 11, 8, 15, 14, 1, 8, 8, 23, 16, 27, 8, 14, 9, 12, 27, 30, 30, 8, 25, 15, 34, 12, 14, 15, 18, 22, 23, 9, 21, 30, 41, 27, 9, 25, 33, 18, 21, 31, 43, 34, 23, 41, 31, 28, 44, 40, 26, 50, 49, 47, 58] 0

k\_1000 12

opm 61

the random choice case path in j60 ./rcpsp/j60.sm/j6011\_2.sm case j6011\_2.sm

v5 3 10.23405909538269 s [61, 86] 0.0 [0, 0, 0, 0, 8, 8, 8, 8, 8, 14, 8, 15, 19, 8, 9, 19, 22, 15, 20, 14, 9, 16, 27, 21, 32, 17, 8, 25, 27, 34, 15, 25, 27, 25, 28, 21, 37, 29, 29, 37, 28, 32, 14, 37, 33, 24, 20, 9, 24, 38, 37, 35, 47, 46, 46, 43, 49, 54, 48, 51, 57, 61] 0

k\_1000 13

opm 76

the random choice case path in j60 ./rcpsp/j60.sm/j6011\_3.sm case j6011\_3.sm

v5 0 1.868701696395874 s [76, 82] 0.0 [0, 0, 0, 0, 5, 5, 13, 19, 27, 13, 27, 4, 7, 13, 16, 13, 23, 30, 19, 20, 7, 27, 22, 34, 26, 13, 23, 15, 17, 31, 27, 29, 21, 15, 29, 44, 53, 20, 20, 23, 22, 26, 43, 30, 36, 46, 34, 62, 34, 44, 45, 38, 52, 58, 49, 53, 58, 62, 66, 70, 64, 76] 0

k\_1000 14

opm 69

the random choice case path in j60 ./rcpsp/j60.sm/j6011\_4.sm case j6011\_4.sm

v5 5 15.054464101791382 s [69, 124] 0.0 [0, 0, 0, 0, 8, 7, 7, 10, 12, 14, 1, 8, 14, 8, 19, 21, 13, 23, 29, 36, 21, 20, 13, 13, 22, 33, 36, 38, 28, 10, 22, 36, 9, 17, 25, 10, 39, 26, 26, 33, 37, 45, 46, 36, 30, 37, 25, 39, 9, 42, 46, 35, 38, 39, 44, 54, 57, 45, 64, 30, 48, 69] 0

k\_1000 15

opm 65

the random choice case path in j60 ./rcpsp/j60.sm/j6011\_5.sm case j6011\_5.sm

v5 0 1.1408450603485107 s [65, 66] 0.0 [0, 0, 0, 0, 7, 7, 1, 9, 1, 9, 13, 9, 9, 9, 16, 13, 13, 16, 8, 23, 23, 18, 19, 16, 23, 16, 19, 18, 24, 29, 28, 21, 28, 13, 29, 23, 16, 31, 26, 8, 34, 9, 31, 7, 39, 41, 34, 34, 37, 23, 19, 34, 39, 41, 50, 41, 37, 49, 58, 56, 44, 65] 0

k\_1000 16

opm 70

the random choice case path in j60 ./rcpsp/j60.sm/j6011\_6.sm case j6011\_6.sm

v5 14 52.259994983673096 s [70, 84] 0.0 [0, 0, 0, 0, 4, 4, 4, 14, 12, 12, 9, 19, 14, 26, 19, 12, 26, 16, 3, 19, 20, 26, 24, 30, 20, 10, 19, 39, 31, 45, 23, 23, 34, 34, 21, 15, 22, 11, 32, 19, 23, 40, 42, 40, 32, 42, 31, 42, 47, 49, 52, 39, 42, 52, 45, 45, 59, 50, 60, 53, 68, 70] 0

k\_1000 17

opm 70

the random choice case path in j60 ./rcpsp/j60.sm/j6011\_7.sm case j6011\_7.sm

v5 0 1.2551977634429932 s [70, 72] 0.0 [0, 0, 0, 0, 5, 5, 10, 19, 5, 5, 8, 5, 10, 22, 8, 5, 15, 12, 23, 18, 26, 18, 13, 22, 24, 19, 10, 27, 26, 25, 28, 25, 35, 7, 44, 44, 27, 33, 15, 8, 33, 51, 10, 19, 37, 41, 36, 34, 40, 28, 44, 29, 51, 44, 51, 56, 45, 54, 62, 56, 54, 70] 0

k\_1000 18

opm 69

the random choice case path in j60 ./rcpsp/j60.sm/j6011\_8.sm case j6011\_8.sm

v5 2 6.683600187301636 s [69, 88] 0.0 [0, 0, 0, 0, 5, 1, 8, 5, 13, 15, 13, 15, 1, 21, 5, 15, 13, 8, 23, 5, 13, 22, 18, 32, 12, 26, 24, 20, 16, 36, 1, 10, 30, 41, 24, 30, 24, 26, 30, 35, 41, 39, 22, 33, 49, 46, 13, 26, 50, 32, 41, 25, 51, 55, 8, 20, 32, 57, 58, 61, 50, 69] 0

k\_1000 19

opm 62

the random choice case path in j60 ./rcpsp/j60.sm/j6011\_9.sm case j6011\_9.sm

v5 0 1.214216947555542 s [62, 63] 0.0 [0, 0, 0, 0, 3, 8, 12, 12, 8, 8, 3, 3, 18, 14, 8, 21, 12, 17, 9, 9, 16, 13, 21, 16, 10, 23, 11, 20, 21, 30, 15, 13, 29, 19, 30, 15, 33, 13, 21, 22, 21, 35, 42, 21, 31, 38, 47, 30, 29, 33, 38, 25, 23, 34, 45, 35, 55, 38, 54, 42, 57, 62] 0

k\_1000 20

opm 59

the random choice case path in j60 ./rcpsp/j60.sm/j6012\_1.sm case j6012\_1.sm

v5 0 0.7395575046539307 s [59, 59] 0.0 [0, 0, 0, 0, 9, 6, 6, 6, 9, 16, 6, 10, 14, 16, 10, 6, 16, 14, 12, 16, 12, 18, 16, 18, 16, 9, 15, 18, 9, 6, 19, 24, 15, 14, 23, 31, 22, 18, 19, 15, 22, 24, 22, 33, 20, 24, 14, 22, 15, 29, 32, 43, 37, 43, 44, 45, 51, 32, 28, 52, 54, 59] 0

k\_1000 21

opm 79

the random choice case path in j60 ./rcpsp/j60.sm/j6012\_10.sm case j6012\_10.sm

v5 0 0.9051902294158936 s [79, 95] 0.0 [0, 0, 0, 0, 6, 1, 16, 1, 10, 1, 25, 18, 26, 3, 31, 16, 26, 10, 25, 25, 1, 3, 6, 3, 41, 51, 31, 18, 18, 31, 58, 24, 32, 51, 21, 1, 11, 5, 24, 16, 24, 61, 33, 33, 30, 25, 67, 33, 38, 38, 68, 46, 56, 21, 43, 70, 58, 33, 48, 77, 63, 79] 0

k\_1000 22

opm 58

the random choice case path in j60 ./rcpsp/j60.sm/j6012\_2.sm case j6012\_2.sm

v5 0 0.4879302978515625 s [58, 58] 0.0 [0, 0, 0, 0, 3, 3, 1, 1, 3, 3, 8, 3, 3, 8, 11, 10, 6, 17, 1, 3, 3, 8, 17, 11, 16, 16, 17, 7, 11, 16, 22, 10, 24, 4, 23, 10, 7, 16, 5, 27, 31, 10, 23, 24, 29, 24, 5, 23, 21, 24, 38, 28, 25, 29, 31, 38, 45, 16, 13, 32, 48, 58] 0

k\_1000 23

opm 75

the random choice case path in j60 ./rcpsp/j60.sm/j6012\_3.sm case j6012\_3.sm

v5 0 0.6726596355438232 s [75, 105] 0.0 [0, 0, 0, 0, 7, 15, 6, 21, 7, 7, 21, 13, 21, 6, 15, 13, 10, 18, 14, 10, 9, 15, 6, 20, 31, 27, 9, 9, 31, 31, 30, 14, 22, 25, 37, 10, 31, 32, 17, 37, 32, 30, 46, 14, 35, 35, 26, 38, 41, 38, 48, 54, 39, 54, 50, 62, 38, 60, 26, 65, 60, 75] 0

k\_1000 24

opm 69

the random choice case path in j60 ./rcpsp/j60.sm/j6012\_4.sm case j6012\_4.sm

v5 0 0.5626246929168701 s [69, 69] 0.0 [0, 0, 0, 0, 3, 3, 1, 6, 6, 8, 7, 12, 12, 10, 3, 8, 6, 7, 8, 8, 18, 7, 23, 23, 15, 21, 18, 16, 32, 38, 11, 38, 9, 1, 18, 44, 1, 11, 15, 11, 32, 11, 25, 44, 9, 12, 47, 32, 39, 2, 21, 19, 21, 40, 17, 47, 48, 49, 31, 42, 59, 69] 0

k\_1000 25

opm 63

the random choice case path in j60 ./rcpsp/j60.sm/j6012\_5.sm case j6012\_5.sm

v5 0 0.8330061435699463 s [63, 75] 0.0 [0, 0, 0, 0, 9, 9, 13, 9, 2, 9, 4, 17, 2, 17, 10, 15, 15, 17, 18, 9, 22, 13, 24, 2, 18, 25, 19, 8, 20, 30, 18, 26, 15, 13, 30, 30, 30, 37, 24, 25, 23, 17, 24, 33, 28, 31, 34, 30, 35, 22, 6, 25, 33, 43, 43, 51, 52, 46, 62, 53, 36, 63] 0

k\_1000 26

opm 54

the random choice case path in j60 ./rcpsp/j60.sm/j6012\_6.sm case j6012\_6.sm

v5 0 0.6224205493927002 s [54, 54] 0.0 [0, 0, 0, 0, 9, 5, 9, 15, 3, 9, 15, 23, 16, 5, 5, 15, 11, 13, 15, 15, 23, 23, 14, 14, 32, 23, 16, 17, 16, 11, 22, 13, 26, 11, 21, 16, 13, 16, 22, 31, 17, 34, 15, 29, 23, 41, 34, 29, 27, 41, 25, 39, 50, 28, 31, 41, 37, 41, 47, 53, 41, 54] 0

k\_1000 27

opm 71

the random choice case path in j60 ./rcpsp/j60.sm/j6012\_7.sm case j6012\_7.sm

v5 0 0.6895349025726318 s [71, 86] 0.0 [0, 0, 0, 0, 1, 2, 5, 2, 2, 6, 5, 2, 12, 12, 22, 12, 5, 6, 16, 2, 23, 9, 25, 9, 12, 16, 6, 14, 1, 19, 14, 22, 5, 1, 14, 32, 9, 5, 15, 19, 22, 25, 29, 29, 24, 25, 6, 6, 26, 32, 36, 31, 22, 39, 44, 35, 46, 54, 36, 50, 64, 71] 0

k\_1000 28

opm 60

the random choice case path in j60 ./rcpsp/j60.sm/j6012\_8.sm case j6012\_8.sm

v5 0 0.8225297927856445 s [60, 60] 0.0 [0, 0, 0, 0, 6, 6, 9, 6, 9, 3, 11, 9, 11, 12, 9, 10, 3, 13, 3, 11, 10, 11, 17, 9, 10, 17, 13, 19, 19, 8, 13, 26, 15, 14, 11, 17, 20, 23, 30, 17, 11, 15, 20, 26, 31, 17, 17, 33, 33, 34, 27, 43, 44, 30, 34, 35, 51, 41, 26, 36, 55, 60] 0

k\_1000 29

opm 59

the random choice case path in j60 ./rcpsp/j60.sm/j6012\_9.sm case j6012\_9.sm

v5 0 0.8156051635742188 s [59, 59] 0.0 [0, 0, 0, 0, 6, 14, 17, 4, 6, 15, 5, 10, 4, 11, 11, 24, 14, 11, 19, 5, 34, 24, 17, 13, 34, 26, 39, 19, 18, 15, 34, 20, 17, 22, 5, 23, 28, 31, 20, 44, 19, 21, 23, 33, 32, 40, 24, 25, 25, 32, 24, 43, 44, 33, 52, 42, 46, 47, 46, 50, 56, 59] 0

k\_1000 30

opm 104

the random choice case path in j60 ./rcpsp/j60.sm/j6013\_1.sm case j6013\_1.sm

v5 11 583.9807000160217 s [129, 182] 24.03846153846154 [0, 0, 0, 0, 17, 4, 9, 15, 49, 20, 23, 16, 5, 30, 38, 28, 7, 36, 59, 62, 44, 14, 61, 30, 9, 28, 34, 42, 38, 60, 115, 52, 19, 18, 19, 78, 47, 87, 35, 82, 62, 69, 78, 70, 88, 81, 94, 102, 71, 90, 87, 96, 107, 91, 92, 105, 41, 114, 123, 122, 122, 129] 0

k\_1000 31

opm 112

the random choice case path in j60 ./rcpsp/j60.sm/j6013\_10.sm case j6013\_10.sm

v5 13 579.534829378128 s [134, 386] 19.642857142857142 [0, 0, 0, 20, 10, 1, 19, 6, 93, 30, 24, 51, 1, 53, 51, 11, 37, 16, 47, 39, 57, 88, 70, 28, 65, 57, 40, 81, 48, 6, 19, 69, 30, 95, 39, 49, 63, 57, 65, 99, 15, 69, 79, 88, 20, 99, 79, 71, 81, 115, 99, 109, 108, 119, 93, 96, 100, 116, 130, 124, 124, 134] 0

k\_1000 32

opm 101

the random choice case path in j60 ./rcpsp/j60.sm/j6013\_2.sm case j6013\_2.sm

v5 17 609.4087605476379 s [115, 279] 13.861386138613863 [0, 0, 2, 0, 11, 4, 6, 42, 45, 16, 5, 27, 52, 7, 25, 50, 16, 36, 6, 35, 56, 39, 39, 50, 55, 56, 66, 65, 36, 8, 25, 67, 64, 35, 65, 47, 83, 12, 21, 48, 85, 68, 93, 67, 75, 85, 41, 103, 99, 75, 104, 68, 21, 103, 92, 71, 93, 93, 106, 102, 106, 115] 0

k\_1000 33

opm 82

the random choice case path in j60 ./rcpsp/j60.sm/j6013\_3.sm case j6013\_3.sm

v5 18 599.0509140491486 s [96, 128] 17.073170731707318 [0, 0, 0, 0, 2, 28, 8, 8, 20, 6, 8, 17, 64, 25, 32, 4, 52, 14, 47, 16, 25, 78, 33, 71, 32, 14, 33, 19, 56, 38, 32, 73, 16, 39, 25, 11, 48, 38, 63, 46, 72, 58, 66, 83, 58, 56, 42, 84, 76, 48, 78, 12, 80, 62, 91, 63, 76, 81, 93, 73, 85, 96] 0

k\_1000 34

opm 97

the random choice case path in j60 ./rcpsp/j60.sm/j6013\_4.sm case j6013\_4.sm

v5 16 575.6630868911743 s [112, 181] 15.463917525773196 [0, 29, 0, 0, 8, 8, 42, 17, 8, 49, 16, 26, 56, 41, 28, 33, 53, 26, 66, 41, 64, 67, 16, 59, 48, 17, 49, 70, 37, 57, 59, 74, 67, 23, 42, 49, 79, 84, 74, 37, 52, 68, 89, 80, 48, 40, 84, 34, 77, 93, 89, 87, 89, 98, 98, 103, 94, 94, 104, 106, 103, 112] 0

k\_1000 35

opm 93

the random choice case path in j60 ./rcpsp/j60.sm/j6013\_5.sm case j6013\_5.sm

v5 20 610.3778522014618 s [105, 110] 12.903225806451612 [0, 0, 0, 0, 7, 40, 3, 9, 12, 10, 30, 16, 52, 9, 26, 16, 32, 37, 7, 32, 23, 48, 29, 18, 48, 24, 37, 69, 39, 35, 56, 61, 12, 35, 63, 31, 49, 56, 56, 75, 65, 52, 14, 51, 76, 75, 22, 78, 69, 77, 39, 84, 49, 80, 59, 77, 91, 88, 101, 95, 78, 105] 0

k\_1000 36

opm 90

the random choice case path in j60 ./rcpsp/j60.sm/j6013\_6.sm case j6013\_6.sm

v5 19 601.722724199295 s [107, 194] 18.88888888888889 [0, 0, 0, 0, 11, 3, 11, 21, 13, 8, 1, 24, 14, 20, 29, 27, 20, 8, 18, 35, 29, 32, 33, 25, 42, 49, 29, 77, 39, 55, 29, 47, 61, 39, 70, 56, 57, 56, 74, 36, 54, 60, 57, 63, 45, 37, 39, 69, 33, 60, 70, 77, 87, 87, 78, 89, 87, 96, 97, 98, 80, 107] 0

k\_1000 37

opm 80

the random choice case path in j60 ./rcpsp/j60.sm/j6013\_7.sm case j6013\_7.sm

v5 24 608.4133656024933 s [99, 106] 23.75 [0, 1, 0, 0, 2, 7, 13, 7, 18, 13, 9, 1, 28, 24, 27, 22, 15, 33, 28, 22, 54, 57, 1, 9, 43, 37, 51, 44, 28, 73, 49, 30, 43, 21, 41, 32, 61, 54, 57, 80, 34, 61, 65, 67, 75, 67, 87, 35, 73, 80, 88, 44, 65, 71, 81, 89, 86, 21, 65, 89, 90, 99] 0

k\_1000 38

opm 112

the random choice case path in j60 ./rcpsp/j60.sm/j6013\_8.sm case j6013\_8.sm

v5 15 589.353639125824 s [135, 184] 20.535714285714285 [0, 0, 0, 0, 8, 9, 8, 13, 22, 44, 28, 17, 70, 17, 28, 56, 10, 25, 56, 49, 38, 29, 41, 60, 29, 65, 27, 65, 36, 77, 78, 78, 53, 78, 51, 89, 68, 93, 44, 84, 88, 80, 93, 93, 102, 107, 112, 108, 117, 122, 107, 58, 110, 100, 89, 102, 125, 115, 126, 126, 126, 135] 0

k\_1000 39

opm 95

the random choice case path in j60 ./rcpsp/j60.sm/j6013\_9.sm case j6013\_9.sm

v5 19 596.9544820785522 s [114, 120] 20.0 [0, 0, 0, 1, 1, 1, 11, 15, 11, 12, 29, 2, 49, 14, 10, 9, 17, 18, 20, 56, 2, 15, 23, 20, 40, 66, 31, 50, 57, 49, 58, 30, 47, 69, 25, 44, 33, 31, 66, 36, 71, 71, 46, 37, 44, 81, 91, 76, 66, 95, 42, 57, 81, 83, 76, 91, 78, 97, 107, 104, 91, 114] 0

k\_1000 40

opm 61

the random choice case path in j60 ./rcpsp/j60.sm/j6014\_1.sm case j6014\_1.sm

v5 140 600.650575876236 s [63, 69] 3.278688524590164 [0, 0, 0, 0, 1, 3, 3, 10, 10, 23, 3, 11, 20, 23, 23, 20, 10, 28, 34, 19, 20, 13, 19, 13, 19, 19, 23, 31, 28, 4, 29, 15, 24, 39, 24, 31, 33, 34, 33, 29, 33, 43, 36, 45, 34, 32, 44, 27, 32, 39, 41, 34, 43, 43, 51, 54, 44, 50, 54, 50, 59, 63] 0

k\_1000 41

opm 72

the random choice case path in j60 ./rcpsp/j60.sm/j6014\_10.sm case j6014\_10.sm

v5 63 597.699969291687 s [77, 94] 6.944444444444445 [0, 0, 0, 4, 1, 1, 10, 12, 1, 12, 20, 25, 1, 12, 2, 15, 9, 5, 19, 19, 10, 15, 28, 2, 15, 21, 34, 38, 26, 27, 21, 4, 41, 30, 30, 45, 35, 48, 56, 41, 57, 37, 50, 38, 44, 35, 41, 65, 50, 57, 45, 54, 59, 50, 61, 57, 67, 64, 54, 69, 72, 77] 0

k\_1000 42

opm 65

the random choice case path in j60 ./rcpsp/j60.sm/j6014\_2.sm case j6014\_2.sm

v5 6 38.81160616874695 s [65, 100] 0.0 [0, 0, 0, 0, 8, 5, 5, 5, 22, 6, 6, 8, 13, 6, 12, 17, 21, 21, 10, 21, 14, 21, 38, 22, 9, 27, 8, 27, 36, 28, 23, 28, 26, 12, 14, 31, 41, 31, 53, 45, 36, 46, 36, 22, 42, 28, 42, 39, 44, 46, 48, 38, 51, 49, 59, 52, 53, 52, 61, 63, 55, 65] 0

k\_1000 43

opm 61

the random choice case path in j60 ./rcpsp/j60.sm/j6014\_3.sm case j6014\_3.sm

v5 73 602.7138438224792 s [64, 98] 4.918032786885246 [0, 0, 0, 0, 10, 7, 5, 8, 8, 13, 15, 7, 14, 13, 1, 16, 13, 23, 35, 1, 10, 15, 7, 35, 17, 38, 26, 27, 18, 11, 20, 5, 27, 29, 17, 44, 32, 22, 23, 21, 42, 52, 24, 32, 27, 29, 22, 42, 38, 20, 45, 38, 53, 45, 54, 46, 46, 56, 58, 57, 58, 64] 0

k\_1000 44

opm 65

the random choice case path in j60 ./rcpsp/j60.sm/j6014\_4.sm case j6014\_4.sm

v5 110 597.6088631153107 s [68, 109] 4.615384615384616 [0, 0, 0, 0, 6, 6, 6, 3, 11, 20, 11, 13, 19, 12, 13, 5, 27, 9, 16, 22, 22, 13, 27, 24, 37, 20, 25, 26, 5, 30, 37, 27, 28, 39, 37, 27, 30, 22, 39, 41, 45, 43, 47, 55, 8, 34, 56, 50, 55, 50, 45, 56, 43, 13, 56, 51, 43, 59, 60, 65, 58, 68] 0

k\_1000 45

opm 59

the random choice case path in j60 ./rcpsp/j60.sm/j6014\_5.sm case j6014\_5.sm

v5 81 602.5516560077667 s [60, 73] 1.694915254237288 [0, 0, 0, 0, 4, 4, 6, 11, 7, 7, 4, 10, 13, 18, 15, 13, 15, 17, 20, 19, 11, 34, 24, 7, 22, 5, 30, 25, 32, 38, 48, 34, 20, 23, 23, 33, 19, 42, 47, 25, 38, 18, 30, 26, 31, 37, 41, 52, 39, 48, 41, 54, 51, 30, 48, 46, 50, 50, 58, 57, 55, 60] 0

k\_1000 46

opm 65

the random choice case path in j60 ./rcpsp/j60.sm/j6014\_6.sm case j6014\_6.sm

v5 65 319.1006314754486 s [65, 66] 0.0 [0, 0, 0, 0, 10, 10, 11, 1, 14, 7, 11, 11, 14, 31, 13, 18, 24, 13, 1, 9, 28, 15, 20, 21, 11, 22, 20, 30, 49, 28, 15, 21, 38, 38, 20, 46, 49, 27, 28, 30, 31, 29, 35, 32, 35, 23, 25, 53, 23, 48, 21, 44, 40, 50, 50, 49, 57, 59, 60, 58, 53, 65] 0

k\_1000 47

opm 69

the random choice case path in j60 ./rcpsp/j60.sm/j6014\_7.sm case j6014\_7.sm

v5 60 598.8942785263062 s [71, 81] 2.898550724637681 [0, 0, 0, 0, 5, 5, 12, 15, 22, 15, 6, 4, 4, 11, 21, 11, 17, 22, 32, 27, 34, 15, 11, 37, 27, 16, 20, 23, 28, 32, 11, 44, 4, 41, 23, 28, 27, 35, 37, 12, 43, 39, 37, 57, 51, 41, 39, 50, 41, 53, 43, 48, 53, 15, 60, 58, 55, 51, 68, 61, 62, 71] 0

k\_1000 48

opm 88

the random choice case path in j60 ./rcpsp/j60.sm/j6014\_8.sm case j6014\_8.sm

v5 3 27.168991327285767 s [88, 88] 0.0 [0, 0, 0, 0, 3, 8, 9, 3, 8, 13, 14, 13, 17, 22, 25, 22, 35, 11, 35, 14, 30, 27, 39, 25, 28, 29, 42, 8, 44, 28, 47, 38, 53, 43, 53, 6, 6, 61, 35, 40, 48, 29, 26, 63, 22, 27, 37, 15, 19, 68, 70, 52, 47, 56, 76, 62, 63, 47, 59, 78, 50, 88] 0

k\_1000 49

opm 61

the random choice case path in j60 ./rcpsp/j60.sm/j6014\_9.sm case j6014\_9.sm

v5 4 35.12809872627258 s [61, 64] 0.0 [0, 0, 0, 0, 8, 8, 6, 13, 17, 6, 18, 8, 13, 18, 25, 24, 31, 19, 17, 29, 11, 20, 20, 29, 2, 13, 10, 28, 11, 29, 30, 12, 12, 36, 40, 46, 39, 33, 31, 24, 18, 22, 23, 31, 21, 43, 35, 41, 37, 48, 25, 29, 46, 48, 55, 47, 49, 44, 59, 51, 53, 61] 0

k\_1000 50

opm 84

the random choice case path in j60 ./rcpsp/j60.sm/j6015\_1.sm case j6015\_1.sm

v5 1 4.716854810714722 s [84, 84] 0.0 [0, 0, 0, 0, 8, 8, 7, 18, 18, 18, 10, 20, 23, 17, 7, 38, 32, 30, 24, 25, 25, 23, 20, 10, 17, 25, 17, 26, 36, 40, 22, 50, 25, 36, 32, 30, 11, 33, 39, 35, 44, 7, 39, 35, 59, 45, 46, 60, 31, 16, 60, 65, 65, 64, 41, 69, 71, 71, 77, 33, 72, 84] 0

k\_1000 51

opm 61

the random choice case path in j60 ./rcpsp/j60.sm/j6015\_10.sm case j6015\_10.sm

v5 3 10.416624307632446 s [61, 61] 0.0 [0, 0, 0, 0, 5, 2, 5, 5, 11, 7, 17, 6, 9, 7, 12, 7, 27, 10, 17, 13, 27, 5, 9, 2, 14, 31, 24, 22, 18, 19, 13, 11, 9, 35, 15, 13, 26, 32, 14, 9, 22, 12, 29, 18, 2, 39, 24, 28, 38, 22, 28, 35, 15, 29, 32, 41, 37, 46, 38, 53, 42, 61] 0

k\_1000 52

opm 89

the random choice case path in j60 ./rcpsp/j60.sm/j6015\_2.sm case j6015\_2.sm

v5 3 26.50206971168518 s [89, 113] 0.0 [0, 0, 0, 0, 6, 9, 6, 13, 9, 22, 13, 45, 28, 22, 30, 15, 17, 19, 28, 30, 19, 31, 9, 38, 21, 29, 10, 38, 39, 37, 37, 30, 39, 35, 31, 48, 10, 27, 45, 55, 47, 37, 19, 51, 20, 60, 20, 59, 57, 52, 54, 38, 70, 64, 63, 54, 76, 59, 58, 81, 64, 89] 0

k\_1000 53

opm 72

the random choice case path in j60 ./rcpsp/j60.sm/j6015\_3.sm case j6015\_3.sm

v5 0 2.067502737045288 s [72, 94] 0.0 [0, 0, 0, 0, 10, 15, 5, 10, 14, 21, 8, 15, 12, 16, 14, 15, 5, 29, 5, 14, 39, 16, 21, 31, 7, 30, 27, 31, 20, 24, 39, 24, 21, 21, 18, 22, 23, 10, 27, 33, 20, 41, 30, 38, 32, 8, 34, 40, 32, 39, 40, 49, 48, 48, 55, 49, 45, 64, 71, 51, 55, 72] 0

k\_1000 54

opm 75

the random choice case path in j60 ./rcpsp/j60.sm/j6015\_4.sm case j6015\_4.sm

v5 1 6.504441022872925 s [75, 77] 0.0 [0, 0, 0, 0, 2, 2, 11, 11, 19, 14, 5, 5, 15, 19, 19, 6, 24, 5, 25, 18, 13, 11, 10, 28, 33, 23, 27, 26, 31, 2, 20, 29, 29, 35, 33, 41, 31, 49, 28, 44, 20, 20, 52, 39, 42, 41, 44, 18, 36, 44, 33, 51, 60, 32, 42, 52, 67, 59, 69, 67, 52, 75] 0

k\_1000 55

opm 70

the random choice case path in j60 ./rcpsp/j60.sm/j6015\_5.sm case j6015\_5.sm

v5 3 15.671913623809814 s [70, 79] 0.0 [0, 0, 0, 0, 6, 10, 14, 10, 13, 6, 13, 6, 36, 14, 22, 17, 9, 10, 13, 37, 17, 19, 9, 10, 24, 24, 28, 24, 13, 41, 46, 34, 17, 25, 34, 23, 33, 32, 34, 34, 30, 53, 37, 28, 39, 23, 10, 39, 44, 44, 58, 41, 49, 60, 38, 58, 44, 54, 52, 61, 62, 70] 0

k\_1000 56

opm 76

the random choice case path in j60 ./rcpsp/j60.sm/j6015\_6.sm case j6015\_6.sm

v5 10 38.08800768852234 s [76, 76] 0.0 [0, 0, 0, 0, 5, 5, 15, 23, 23, 4, 30, 30, 4, 15, 23, 4, 39, 10, 15, 30, 26, 23, 23, 7, 33, 34, 17, 24, 10, 31, 23, 41, 33, 33, 43, 10, 15, 11, 24, 34, 47, 25, 39, 41, 34, 25, 28, 41, 47, 45, 49, 52, 5, 55, 48, 57, 61, 31, 63, 71, 63, 76] 0

k\_1000 57

opm 64

the random choice case path in j60 ./rcpsp/j60.sm/j6015\_7.sm case j6015\_7.sm

v5 1 5.128136157989502 s [64, 91] 0.0 [0, 0, 0, 0, 9, 10, 9, 10, 19, 10, 9, 10, 18, 23, 15, 22, 15, 18, 32, 23, 14, 27, 20, 18, 24, 25, 32, 29, 32, 30, 27, 21, 3, 34, 40, 40, 47, 20, 31, 50, 46, 25, 20, 47, 32, 33, 36, 42, 3, 3, 48, 36, 34, 47, 44, 46, 53, 54, 55, 55, 55, 64] 0

k\_1000 58

opm 79

the random choice case path in j60 ./rcpsp/j60.sm/j6015\_8.sm case j6015\_8.sm

v5 1 4.8604044914245605 s [79, 82] 0.0 [0, 0, 0, 0, 4, 4, 22, 2, 4, 9, 35, 2, 10, 5, 12, 16, 24, 9, 21, 21, 30, 34, 30, 11, 9, 42, 42, 42, 14, 49, 34, 31, 54, 11, 18, 16, 34, 24, 15, 32, 45, 14, 36, 22, 22, 35, 41, 46, 46, 31, 54, 37, 53, 60, 61, 64, 72, 44, 69, 21, 78, 79] 0

k\_1000 59

opm 72

the random choice case path in j60 ./rcpsp/j60.sm/j6015\_9.sm case j6015\_9.sm

v5 0 2.3263511657714844 s [72, 96] 0.0 [0, 0, 0, 0, 10, 10, 12, 15, 10, 12, 15, 15, 24, 23, 10, 22, 25, 33, 25, 25, 20, 35, 29, 43, 38, 23, 25, 22, 39, 27, 27, 31, 36, 24, 31, 28, 28, 22, 37, 49, 10, 32, 27, 33, 41, 31, 53, 25, 51, 55, 38, 41, 35, 43, 58, 53, 51, 45, 59, 63, 63, 72] 0

k\_1000 60

opm 64

the random choice case path in j60 ./rcpsp/j60.sm/j6016\_1.sm case j6016\_1.sm

v5 0 1.0214910507202148 s [64, 111] 0.0 [0, 0, 0, 0, 5, 8, 9, 6, 8, 17, 12, 12, 18, 22, 8, 22, 14, 25, 7, 6, 15, 25, 28, 6, 11, 18, 19, 27, 28, 28, 15, 28, 25, 31, 16, 16, 28, 25, 29, 38, 19, 35, 19, 38, 43, 35, 46, 36, 36, 38, 51, 40, 58, 49, 41, 51, 44, 45, 53, 22, 60, 64] 0

k\_1000 61

opm 68

the random choice case path in j60 ./rcpsp/j60.sm/j6016\_10.sm case j6016\_10.sm

v5 0 0.9068963527679443 s [68, 75] 0.0 [0, 0, 0, 0, 9, 9, 12, 20, 1, 20, 7, 9, 1, 10, 1, 6, 7, 10, 27, 10, 10, 6, 17, 19, 25, 10, 30, 33, 38, 30, 7, 27, 44, 34, 10, 9, 30, 16, 44, 49, 16, 32, 27, 6, 39, 47, 10, 19, 18, 54, 29, 29, 34, 14, 54, 34, 40, 39, 64, 47, 47, 68] 0

k\_1000 62

opm 64

the random choice case path in j60 ./rcpsp/j60.sm/j6016\_2.sm case j6016\_2.sm

v5 0 0.6942601203918457 s [64, 78] 0.0 [0, 0, 0, 0, 10, 10, 19, 9, 19, 19, 10, 13, 13, 18, 18, 18, 23, 26, 19, 15, 23, 34, 20, 9, 34, 23, 28, 25, 19, 18, 18, 34, 29, 23, 22, 35, 24, 36, 35, 28, 13, 38, 31, 13, 41, 33, 26, 42, 45, 51, 27, 51, 29, 32, 34, 53, 36, 51, 55, 59, 55, 64] 0

k\_1000 63

opm 53

the random choice case path in j60 ./rcpsp/j60.sm/j6016\_3.sm case j6016\_3.sm

v5 0 0.4899752140045166 s [53, 53] 0.0 [0, 0, 0, 0, 1, 8, 2, 5, 9, 9, 2, 2, 11, 9, 9, 8, 12, 8, 14, 5, 6, 9, 22, 15, 12, 12, 19, 24, 2, 11, 5, 5, 20, 11, 20, 2, 33, 15, 22, 8, 21, 19, 20, 29, 23, 11, 8, 33, 34, 33, 16, 38, 29, 43, 50, 20, 51, 39, 41, 52, 37, 53] 0

k\_1000 64

opm 60

the random choice case path in j60 ./rcpsp/j60.sm/j6016\_4.sm case j6016\_4.sm

v5 0 0.9101247787475586 s [60, 104] 0.0 [0, 0, 0, 0, 1, 9, 10, 13, 13, 10, 1, 20, 8, 17, 8, 13, 24, 20, 24, 8, 17, 24, 10, 23, 23, 9, 23, 28, 17, 20, 22, 30, 9, 10, 6, 12, 31, 27, 1, 19, 5, 37, 28, 17, 34, 27, 43, 5, 26, 28, 9, 47, 26, 56, 42, 36, 27, 44, 37, 57, 43, 60] 0

k\_1000 65

opm 66

the random choice case path in j60 ./rcpsp/j60.sm/j6016\_5.sm case j6016\_5.sm

v5 0 0.7919199466705322 s [66, 90] 0.0 [0, 0, 0, 0, 4, 6, 6, 4, 16, 18, 4, 11, 6, 15, 18, 10, 15, 18, 25, 11, 15, 16, 7, 7, 11, 15, 18, 9, 26, 13, 7, 10, 13, 14, 26, 28, 11, 17, 17, 28, 32, 21, 21, 17, 15, 25, 18, 26, 36, 36, 36, 26, 36, 46, 37, 50, 57, 38, 46, 64, 36, 66] 0

k\_1000 66

opm 66

the random choice case path in j60 ./rcpsp/j60.sm/j6016\_6.sm case j6016\_6.sm

v5 0 0.5875875949859619 s [66, 73] 0.0 [0, 0, 0, 0, 6, 7, 17, 8, 8, 7, 12, 25, 25, 17, 11, 17, 13, 12, 8, 23, 8, 27, 21, 21, 21, 21, 8, 25, 19, 31, 27, 18, 23, 7, 25, 30, 28, 12, 23, 19, 34, 37, 14, 26, 34, 29, 33, 42, 38, 47, 35, 46, 46, 42, 47, 48, 13, 47, 54, 55, 56, 66] 0

k\_1000 67

opm 82

the random choice case path in j60 ./rcpsp/j60.sm/j6016\_7.sm case j6016\_7.sm

v5 0 0.8296043872833252 s [82, 82] 0.0 [0, 0, 0, 0, 7, 10, 8, 17, 25, 17, 15, 17, 8, 25, 32, 10, 15, 8, 32, 25, 40, 24, 27, 33, 41, 11, 15, 25, 28, 11, 40, 35, 11, 41, 51, 20, 23, 59, 27, 40, 32, 35, 51, 62, 51, 53, 55, 32, 17, 59, 59, 67, 69, 49, 41, 72, 32, 46, 50, 49, 75, 82] 0

k\_1000 68

opm 68

the random choice case path in j60 ./rcpsp/j60.sm/j6016\_8.sm case j6016\_8.sm

v5 0 0.7795882225036621 s [68, 68] 0.0 [0, 0, 0, 0, 2, 11, 2, 6, 2, 16, 12, 6, 3, 6, 11, 3, 13, 4, 17, 16, 16, 4, 14, 13, 20, 13, 11, 6, 20, 19, 24, 30, 22, 3, 30, 8, 38, 30, 30, 22, 32, 17, 40, 27, 17, 38, 32, 27, 15, 40, 29, 45, 50, 20, 42, 23, 59, 23, 40, 63, 30, 68] 0

k\_1000 69

opm 54

the random choice case path in j60 ./rcpsp/j60.sm/j6016\_9.sm case j6016\_9.sm

v5 0 0.6414000988006592 s [54, 83] 0.0 [0, 0, 0, 0, 2, 3, 2, 8, 3, 12, 8, 7, 13, 13, 8, 13, 18, 19, 13, 13, 19, 13, 20, 13, 25, 21, 7, 14, 20, 17, 21, 28, 21, 12, 28, 21, 2, 15, 32, 12, 32, 32, 29, 32, 32, 27, 25, 17, 32, 35, 40, 27, 39, 34, 32, 42, 40, 32, 44, 27, 45, 54] 0

k\_1000 70

opm 86

the random choice case path in j60 ./rcpsp/j60.sm/j6017\_1.sm case j6017\_1.sm

v5 32 160.00371265411377 s [86, 88] 0.0 [0, 0, 0, 0, 5, 8, 8, 8, 12, 5, 8, 15, 16, 16, 28, 12, 17, 19, 9, 26, 40, 18, 15, 25, 28, 26, 31, 40, 35, 40, 26, 26, 35, 19, 35, 30, 30, 48, 35, 35, 43, 36, 43, 53, 18, 37, 54, 43, 45, 64, 77, 56, 48, 64, 79, 70, 48, 70, 77, 85, 75, 86] 0

k\_1000 71

opm 72

the random choice case path in j60 ./rcpsp/j60.sm/j6017\_10.sm case j6017\_10.sm

v5 22 99.06758451461792 s [72, 86] 0.0 [0, 0, 0, 0, 13, 20, 2, 19, 3, 20, 11, 24, 24, 2, 3, 13, 6, 3, 13, 3, 20, 26, 29, 38, 22, 18, 24, 11, 10, 6, 33, 22, 31, 32, 28, 38, 20, 22, 33, 28, 42, 31, 32, 41, 40, 36, 43, 41, 44, 45, 55, 53, 43, 49, 55, 57, 60, 64, 70, 60, 61, 72] 0

k\_1000 72

opm 69

the random choice case path in j60 ./rcpsp/j60.sm/j6017\_2.sm case j6017\_2.sm

v5 95 602.5359122753143 s [70, 94] 1.4492753623188406 [0, 0, 0, 0, 6, 1, 8, 9, 9, 6, 9, 51, 12, 9, 14, 7, 12, 1, 19, 14, 25, 21, 21, 19, 21, 13, 25, 26, 14, 27, 21, 34, 19, 38, 10, 21, 34, 38, 37, 45, 45, 34, 34, 25, 27, 51, 37, 54, 55, 27, 27, 51, 43, 56, 51, 41, 60, 46, 47, 65, 55, 70] 0

k\_1000 73

opm 89

the random choice case path in j60 ./rcpsp/j60.sm/j6017\_3.sm case j6017\_3.sm

v5 1 10.094706535339355 s [89, 109] 0.0 [0, 0, 0, 0, 13, 9, 11, 7, 9, 13, 18, 23, 27, 18, 8, 23, 28, 23, 20, 31, 26, 26, 11, 17, 28, 23, 60, 44, 36, 36, 35, 17, 43, 7, 64, 35, 20, 31, 55, 28, 45, 17, 38, 63, 54, 45, 41, 64, 63, 45, 28, 55, 64, 56, 70, 54, 72, 73, 81, 81, 77, 89] 0

k\_1000 74

opm 71

the random choice case path in j60 ./rcpsp/j60.sm/j6017\_4.sm case j6017\_4.sm

v5 24 67.45540285110474 s [71, 77] 0.0 [0, 0, 0, 0, 1, 2, 6, 2, 4, 4, 10, 12, 3, 6, 12, 17, 6, 6, 5, 13, 9, 9, 13, 19, 22, 29, 33, 37, 16, 22, 32, 29, 37, 28, 22, 17, 34, 43, 29, 18, 8, 43, 42, 43, 22, 43, 43, 16, 44, 46, 47, 53, 47, 44, 19, 53, 47, 56, 66, 62, 56, 71] 0

k\_1000 75

opm 59

the random choice case path in j60 ./rcpsp/j60.sm/j6017\_5.sm case j6017\_5.sm

v5 8 27.566501140594482 s [59, 121] 0.0 [0, 0, 0, 0, 2, 11, 2, 13, 14, 13, 13, 11, 14, 17, 16, 19, 2, 4, 13, 22, 20, 22, 16, 1, 20, 3, 4, 20, 19, 29, 29, 29, 16, 34, 25, 42, 10, 22, 29, 8, 30, 33, 34, 35, 26, 35, 44, 41, 38, 41, 42, 44, 48, 49, 52, 34, 49, 43, 52, 54, 44, 59] 0

k\_1000 76

opm 69

the random choice case path in j60 ./rcpsp/j60.sm/j6017\_6.sm case j6017\_6.sm

v5 107 597.050844669342 s [70, 100] 1.4492753623188406 [0, 0, 0, 0, 3, 5, 9, 22, 3, 8, 6, 5, 10, 8, 9, 13, 19, 22, 3, 16, 6, 6, 7, 6, 3, 13, 32, 13, 16, 16, 15, 9, 32, 36, 30, 21, 16, 22, 30, 24, 37, 34, 35, 37, 34, 38, 47, 47, 47, 53, 47, 47, 61, 43, 53, 56, 61, 53, 61, 57, 69, 70] 0

k\_1000 77

opm 83

the random choice case path in j60 ./rcpsp/j60.sm/j6017\_7.sm case j6017\_7.sm

v5 20 87.51219773292542 s [83, 188] 0.0 [0, 0, 23, 14, 6, 6, 27, 14, 24, 14, 23, 33, 24, 24, 6, 27, 33, 35, 27, 35, 40, 46, 29, 44, 27, 33, 33, 24, 33, 33, 27, 34, 33, 33, 44, 46, 40, 35, 41, 44, 39, 50, 52, 40, 60, 41, 34, 52, 60, 55, 61, 40, 48, 63, 54, 71, 68, 50, 71, 75, 71, 83] 0

k\_1000 78

opm 85

the random choice case path in j60 ./rcpsp/j60.sm/j6017\_8.sm case j6017\_8.sm

v5 5 42.69010090827942 s [80, 103] -5.88235294117647 [0, 0, 0, 0, 4, 10, 9, 18, 23, 23, 24, 18, 19, 24, 4, 32, 5, 13, 19, 25, 24, 24, 28, 41, 13, 25, 10, 24, 23, 18, 32, 32, 46, 29, 29, 16, 36, 48, 51, 36, 56, 18, 41, 28, 57, 31, 49, 46, 41, 56, 23, 48, 66, 57, 56, 63, 67, 67, 72, 69, 67, 80] 0

k\_1000 79

opm 76

the random choice case path in j60 ./rcpsp/j60.sm/j6017\_9.sm case j6017\_9.sm

v5 108 599.749186038971 s [78, 130] 2.631578947368421 [0, 0, 5, 0, 9, 3, 17, 12, 12, 18, 17, 1, 17, 20, 36, 5, 12, 13, 19, 26, 3, 19, 30, 28, 37, 18, 33, 12, 35, 6, 34, 35, 21, 30, 44, 19, 34, 51, 21, 44, 1, 37, 47, 30, 45, 44, 44, 47, 52, 44, 61, 47, 51, 48, 68, 47, 55, 61, 75, 66, 55, 78] 0

k\_1000 80

opm 81

the random choice case path in j60 ./rcpsp/j60.sm/j6018\_1.sm case j6018\_1.sm

v5 1 4.1264753341674805 s [81, 143] 0.0 [0, 0, 0, 0, 6, 3, 2, 2, 2, 6, 13, 18, 18, 22, 12, 10, 8, 16, 18, 6, 19, 25, 3, 20, 7, 32, 11, 13, 21, 32, 16, 41, 20, 53, 26, 26, 22, 31, 14, 10, 26, 17, 26, 31, 31, 36, 44, 31, 41, 48, 44, 58, 48, 58, 55, 68, 63, 76, 49, 78, 71, 81] 0

k\_1000 81

opm 97

the random choice case path in j60 ./rcpsp/j60.sm/j6018\_10.sm case j6018\_10.sm

v5 0 1.27433443069458 s [97, 102] 0.0 [0, 0, 0, 0, 7, 4, 17, 17, 17, 24, 24, 33, 28, 23, 4, 39, 2, 33, 33, 7, 13, 38, 34, 28, 42, 20, 23, 30, 39, 38, 39, 47, 45, 47, 53, 53, 57, 39, 42, 4, 23, 30, 49, 57, 57, 53, 60, 47, 65, 45, 67, 60, 51, 70, 66, 60, 74, 80, 90, 76, 80, 97] 0

k\_1000 82

opm 69

the random choice case path in j60 ./rcpsp/j60.sm/j6018\_2.sm case j6018\_2.sm

v5 20 77.65962171554565 s [69, 70] 0.0 [0, 0, 0, 0, 6, 1, 6, 10, 1, 15, 3, 15, 6, 16, 21, 9, 31, 6, 21, 10, 8, 31, 21, 8, 6, 15, 34, 27, 25, 27, 20, 26, 41, 24, 9, 40, 38, 26, 25, 21, 29, 50, 24, 29, 48, 41, 36, 55, 41, 50, 31, 48, 54, 41, 59, 55, 26, 66, 67, 48, 56, 69] 0

k\_1000 83

opm 77

the random choice case path in j60 ./rcpsp/j60.sm/j6018\_3.sm case j6018\_3.sm

v5 0 1.5362753868103027 s [77, 146] 0.0 [0, 0, 0, 0, 2, 10, 6, 15, 16, 9, 26, 16, 2, 16, 31, 20, 10, 6, 9, 20, 38, 28, 31, 10, 19, 25, 31, 28, 22, 48, 51, 34, 28, 17, 26, 60, 39, 38, 31, 31, 41, 31, 41, 41, 54, 31, 42, 41, 61, 10, 29, 36, 46, 50, 61, 43, 68, 63, 73, 68, 44, 77] 0

k\_1000 84

opm 71

the random choice case path in j60 ./rcpsp/j60.sm/j6018\_4.sm case j6018\_4.sm

v5 48 155.07688331604004 s [71, 116] 0.0 [0, 0, 0, 0, 8, 3, 3, 11, 18, 15, 13, 8, 22, 13, 22, 21, 33, 11, 19, 22, 31, 18, 31, 13, 11, 19, 15, 8, 28, 24, 22, 31, 33, 6, 41, 39, 41, 17, 50, 48, 13, 37, 41, 32, 24, 42, 33, 43, 50, 49, 55, 57, 61, 49, 52, 55, 52, 48, 65, 60, 58, 71] 0

k\_1000 85

opm 80

the random choice case path in j60 ./rcpsp/j60.sm/j6018\_5.sm case j6018\_5.sm

v5 0 0.9574143886566162 s [80, 111] 0.0 [0, 0, 0, 0, 8, 5, 5, 10, 8, 5, 20, 16, 18, 18, 24, 22, 18, 8, 10, 24, 26, 24, 13, 26, 32, 28, 29, 13, 33, 29, 26, 30, 32, 26, 47, 29, 39, 20, 42, 26, 33, 38, 32, 52, 42, 52, 59, 52, 58, 58, 56, 62, 56, 65, 68, 56, 72, 71, 45, 76, 79, 80] 0

k\_1000 86

opm 61

the random choice case path in j60 ./rcpsp/j60.sm/j6018\_6.sm case j6018\_6.sm

v5 1 3.19527006149292 s [61, 74] 0.0 [0, 0, 0, 0, 4, 6, 4, 5, 5, 6, 11, 10, 15, 4, 5, 6, 10, 9, 17, 15, 9, 10, 19, 9, 17, 19, 24, 6, 20, 31, 29, 11, 20, 12, 28, 18, 28, 19, 31, 22, 21, 21, 31, 29, 39, 24, 29, 39, 31, 31, 40, 42, 42, 34, 43, 42, 47, 42, 49, 48, 51, 61] 0

k\_1000 87

opm 93

the random choice case path in j60 ./rcpsp/j60.sm/j6018\_7.sm case j6018\_7.sm

v5 8 27.570474863052368 s [93, 99] 0.0 [0, 0, 0, 8, 13, 8, 13, 8, 13, 16, 36, 23, 23, 27, 10, 30, 43, 40, 30, 30, 35, 46, 33, 20, 34, 40, 35, 39, 53, 37, 33, 33, 46, 39, 48, 53, 41, 30, 48, 38, 48, 50, 35, 61, 37, 46, 49, 61, 69, 66, 55, 33, 46, 68, 78, 56, 78, 61, 83, 68, 56, 93] 0

k\_1000 88

opm 78

the random choice case path in j60 ./rcpsp/j60.sm/j6018\_8.sm case j6018\_8.sm

v5 0 0.7975153923034668 s [78, 78] 0.0 [0, 0, 0, 4, 8, 4, 4, 5, 15, 15, 4, 5, 5, 15, 24, 29, 18, 25, 19, 34, 26, 42, 29, 31, 19, 8, 26, 21, 18, 26, 29, 34, 21, 34, 26, 36, 30, 36, 44, 25, 38, 38, 28, 50, 21, 50, 59, 32, 50, 42, 61, 61, 32, 64, 64, 46, 61, 67, 71, 71, 65, 78] 0

k\_1000 89

opm 69

the random choice case path in j60 ./rcpsp/j60.sm/j6018\_9.sm case j6018\_9.sm

v5 2 5.811450719833374 s [69, 116] 0.0 [0, 0, 0, 0, 1, 10, 10, 19, 3, 1, 3, 19, 2, 3, 10, 10, 8, 14, 20, 22, 10, 10, 13, 16, 12, 13, 14, 22, 12, 3, 20, 19, 24, 29, 22, 37, 31, 30, 27, 42, 29, 36, 37, 52, 36, 2, 43, 46, 36, 29, 36, 21, 44, 47, 54, 57, 43, 60, 60, 52, 63, 69] 0

k\_1000 90

opm 62

the random choice case path in j60 ./rcpsp/j60.sm/j6019\_1.sm case j6019\_1.sm

v5 8 16.294726371765137 s [62, 102] 0.0 [0, 0, 0, 0, 6, 1, 1, 10, 1, 10, 4, 6, 14, 19, 16, 4, 2, 11, 8, 11, 5, 26, 6, 26, 19, 17, 18, 36, 5, 10, 27, 16, 18, 29, 26, 11, 17, 36, 16, 29, 25, 16, 37, 39, 22, 37, 44, 25, 29, 30, 37, 30, 47, 36, 30, 39, 45, 51, 56, 45, 42, 62] 0

k\_1000 91

opm 78

the random choice case path in j60 ./rcpsp/j60.sm/j6019\_10.sm case j6019\_10.sm

v5 1 2.986940383911133 s [78, 115] 0.0 [0, 0, 0, 0, 6, 12, 12, 8, 12, 8, 16, 12, 16, 6, 22, 19, 15, 22, 32, 12, 32, 16, 10, 17, 21, 20, 33, 19, 24, 38, 15, 27, 38, 32, 39, 39, 49, 40, 28, 47, 47, 45, 33, 33, 55, 24, 39, 22, 39, 56, 48, 62, 45, 52, 55, 47, 70, 54, 74, 65, 56, 78] 0

k\_1000 92

opm 83

the random choice case path in j60 ./rcpsp/j60.sm/j6019\_2.sm case j6019\_2.sm

v5 0 1.6802325248718262 s [83, 120] 0.0 [0, 0, 0, 0, 9, 3, 8, 9, 5, 8, 8, 5, 9, 16, 3, 20, 15, 10, 23, 33, 35, 20, 10, 21, 11, 35, 23, 19, 23, 4, 17, 25, 33, 32, 21, 8, 20, 19, 40, 43, 40, 31, 43, 33, 53, 25, 40, 43, 63, 15, 33, 41, 43, 51, 51, 57, 43, 52, 48, 67, 73, 83] 0

k\_1000 93

opm 83

the random choice case path in j60 ./rcpsp/j60.sm/j6019\_3.sm case j6019\_3.sm

v5 1 3.1002914905548096 s [83, 84] 0.0 [0, 0, 0, 0, 10, 10, 20, 10, 20, 12, 13, 20, 21, 13, 17, 12, 17, 6, 6, 19, 6, 22, 30, 12, 21, 17, 35, 30, 29, 25, 36, 4, 30, 8, 29, 19, 41, 37, 22, 27, 30, 49, 19, 29, 58, 62, 44, 62, 49, 51, 37, 55, 72, 44, 74, 72, 59, 45, 75, 58, 76, 83] 0

k\_1000 94

opm 67

the random choice case path in j60 ./rcpsp/j60.sm/j6019\_4.sm case j6019\_4.sm

v5 0 0.7645289897918701 s [67, 132] 0.0 [0, 0, 0, 0, 2, 5, 5, 15, 5, 17, 15, 15, 17, 12, 21, 25, 15, 23, 23, 10, 23, 29, 35, 2, 9, 25, 15, 25, 19, 30, 22, 24, 16, 19, 21, 24, 26, 42, 15, 26, 25, 27, 29, 32, 38, 26, 25, 35, 38, 30, 30, 39, 32, 35, 45, 45, 55, 42, 60, 45, 47, 67] 0

k\_1000 95

opm 73

the random choice case path in j60 ./rcpsp/j60.sm/j6019\_5.sm case j6019\_5.sm

v5 0 1.1440253257751465 s [73, 73] 0.0 [0, 0, 0, 0, 2, 5, 5, 10, 5, 5, 12, 15, 2, 3, 5, 7, 15, 15, 23, 13, 20, 28, 15, 28, 9, 13, 23, 16, 30, 26, 29, 30, 37, 34, 26, 41, 15, 37, 20, 39, 15, 25, 25, 38, 36, 41, 32, 41, 50, 57, 50, 51, 56, 44, 58, 52, 57, 61, 64, 63, 58, 73] 0

k\_1000 96

opm 69

the random choice case path in j60 ./rcpsp/j60.sm/j6019\_6.sm case j6019\_6.sm

v5 0 1.0532293319702148 s [68, 95] -1.4492753623188406 [0, 0, 0, 0, 4, 13, 13, 2, 13, 4, 16, 6, 6, 22, 22, 23, 32, 12, 27, 23, 28, 35, 22, 30, 41, 39, 27, 41, 40, 40, 12, 4, 16, 8, 28, 10, 40, 28, 35, 10, 41, 41, 36, 35, 46, 44, 46, 45, 49, 53, 45, 46, 56, 42, 56, 59, 60, 63, 44, 64, 62, 68] 0

k\_1000 97

opm 60

the random choice case path in j60 ./rcpsp/j60.sm/j6019\_7.sm case j6019\_7.sm

v5 0 0.6128058433532715 s [60, 68] 0.0 [0, 0, 0, 0, 4, 10, 9, 9, 9, 16, 10, 5, 21, 17, 26, 5, 21, 4, 5, 16, 7, 18, 16, 27, 30, 26, 16, 30, 7, 35, 18, 13, 26, 23, 26, 23, 33, 31, 32, 33, 27, 33, 24, 30, 27, 41, 36, 24, 33, 39, 35, 37, 43, 45, 45, 53, 43, 56, 35, 57, 47, 60] 0

k\_1000 98

opm 87

the random choice case path in j60 ./rcpsp/j60.sm/j6019\_8.sm case j6019\_8.sm

v5 0 1.1998369693756104 s [87, 147] 0.0 [0, 0, 0, 0, 1, 1, 5, 8, 5, 15, 5, 15, 5, 5, 15, 22, 1, 13, 15, 22, 9, 26, 8, 36, 43, 11, 23, 16, 26, 15, 15, 24, 43, 24, 51, 8, 26, 12, 24, 60, 16, 36, 36, 29, 43, 16, 47, 50, 67, 9, 74, 60, 66, 60, 60, 70, 68, 70, 70, 82, 42, 87] 0

k\_1000 99

opm 69

the random choice case path in j60 ./rcpsp/j60.sm/j6019\_9.sm case j6019\_9.sm

v5 3 5.970388174057007 s [67, 112] -2.898550724637681 [0, 0, 0, 0, 9, 5, 14, 1, 11, 14, 11, 18, 5, 19, 13, 19, 19, 14, 15, 19, 25, 14, 23, 26, 30, 15, 39, 30, 24, 25, 9, 31, 49, 30, 35, 53, 31, 23, 34, 42, 39, 31, 24, 28, 36, 36, 46, 37, 46, 55, 50, 40, 53, 62, 41, 42, 52, 42, 63, 62, 58, 67] 0

k\_1000 100

opm 77

the random choice case path in j60 ./rcpsp/j60.sm/j601\_1.sm case j601\_1.sm

v5 6 33.34586954116821 s [77, 147] 0.0 [0, 0, 0, 0, 10, 16, 8, 10, 19, 10, 19, 19, 20, 1, 8, 16, 21, 26, 26, 19, 22, 16, 16, 22, 13, 44, 25, 36, 1, 35, 26, 24, 36, 3, 20, 35, 35, 24, 42, 20, 9, 44, 29, 27, 33, 27, 45, 52, 50, 30, 42, 52, 46, 54, 58, 47, 68, 36, 74, 52, 55, 77] 0

k\_1000 101

opm 80

the random choice case path in j60 ./rcpsp/j60.sm/j601\_10.sm case j601\_10.sm

v5 2 14.01843810081482 s [76, 155] -5.0 [0, 0, 0, 0, 10, 6, 7, 6, 11, 16, 10, 20, 16, 16, 7, 10, 34, 24, 20, 26, 36, 26, 17, 36, 25, 24, 21, 21, 10, 36, 11, 33, 11, 44, 42, 42, 42, 20, 38, 17, 16, 38, 47, 17, 55, 12, 30, 51, 45, 25, 51, 12, 57, 59, 25, 57, 51, 65, 60, 40, 71, 76] 0

k\_1000 102

opm 68

the random choice case path in j60 ./rcpsp/j60.sm/j601\_2.sm case j601\_2.sm

v5 75 598.9307992458344 s [69, 71] 1.4705882352941175 [0, 30, 0, 0, 7, 7, 39, 16, 14, 23, 17, 7, 14, 24, 22, 22, 32, 24, 23, 32, 24, 17, 16, 32, 28, 28, 36, 16, 39, 36, 53, 39, 46, 28, 39, 32, 40, 39, 46, 46, 49, 52, 39, 47, 60, 28, 41, 28, 46, 47, 47, 55, 53, 57, 60, 38, 64, 56, 60, 62, 67, 69] 0

k\_1000 103

opm 68

the random choice case path in j60 ./rcpsp/j60.sm/j601\_3.sm case j601\_3.sm

v5 132 598.2852926254272 s [70, 108] 2.941176470588235 [0, 0, 0, 0, 7, 8, 6, 16, 6, 6, 7, 9, 15, 8, 16, 14, 7, 12, 23, 26, 13, 19, 12, 15, 19, 19, 1, 6, 19, 32, 19, 32, 27, 16, 20, 29, 16, 18, 36, 26, 34, 35, 39, 24, 35, 35, 9, 40, 26, 29, 41, 30, 32, 31, 40, 45, 53, 40, 61, 46, 53, 70] 0

k\_1000 104

opm 91

the random choice case path in j60 ./rcpsp/j60.sm/j601\_4.sm case j601\_4.sm

v5 84 424.5322701931 s [91, 101] 0.0 [0, 0, 0, 0, 7, 19, 7, 7, 7, 3, 16, 14, 7, 7, 12, 27, 14, 12, 37, 20, 11, 17, 20, 21, 20, 12, 41, 21, 16, 20, 31, 14, 22, 29, 27, 18, 31, 30, 27, 32, 66, 17, 19, 37, 17, 47, 52, 68, 21, 52, 73, 37, 59, 42, 28, 66, 72, 48, 51, 82, 77, 91] 0

k\_1000 105

opm 73

the random choice case path in j60 ./rcpsp/j60.sm/j601\_5.sm case j601\_5.sm

v5 78 597.7396991252899 s [75, 87] 2.73972602739726 [0, 0, 0, 0, 6, 16, 9, 16, 19, 9, 17, 6, 24, 19, 16, 22, 11, 35, 19, 6, 7, 20, 11, 26, 29, 13, 39, 11, 19, 35, 24, 39, 23, 32, 39, 26, 48, 23, 36, 19, 56, 24, 42, 41, 49, 11, 23, 50, 45, 57, 15, 20, 42, 50, 60, 62, 42, 61, 42, 66, 66, 75] 0

k\_1000 106

opm 66

the random choice case path in j60 ./rcpsp/j60.sm/j601\_6.sm case j601\_6.sm

v5 2 22.744140625 s [66, 104] 0.0 [0, 0, 0, 0, 3, 12, 13, 15, 15, 13, 22, 14, 3, 39, 7, 2, 6, 15, 15, 22, 19, 6, 7, 7, 16, 7, 23, 45, 36, 27, 48, 6, 16, 49, 29, 49, 29, 23, 12, 45, 49, 38, 22, 2, 54, 41, 27, 29, 50, 19, 37, 44, 48, 33, 38, 42, 63, 56, 51, 57, 64, 66] 0

k\_1000 107

opm 72

the random choice case path in j60 ./rcpsp/j60.sm/j601\_7.sm case j601\_7.sm

v5 63 602.3577792644501 s [76, 90] 5.555555555555555 [0, 0, 0, 0, 14, 13, 2, 8, 21, 15, 7, 30, 13, 2, 10, 8, 17, 10, 5, 20, 16, 48, 18, 17, 19, 22, 22, 40, 14, 41, 32, 21, 22, 18, 30, 51, 50, 34, 21, 55, 10, 39, 30, 27, 51, 34, 34, 22, 50, 32, 65, 52, 61, 60, 44, 34, 52, 67, 55, 52, 68, 76] 0

k\_1000 108

opm 75

the random choice case path in j60 ./rcpsp/j60.sm/j601\_8.sm case j601\_8.sm

v5 15 80.5051474571228 s [75, 75] 0.0 [0, 13, 0, 0, 9, 4, 1, 4, 9, 9, 19, 9, 10, 20, 19, 4, 20, 21, 28, 1, 19, 10, 4, 14, 21, 38, 37, 26, 14, 40, 40, 45, 53, 27, 27, 41, 45, 37, 23, 41, 45, 34, 45, 13, 49, 30, 53, 53, 42, 53, 55, 59, 63, 53, 37, 59, 56, 64, 66, 67, 74, 75] 0

k\_1000 109

opm 85

the random choice case path in j60 ./rcpsp/j60.sm/j601\_9.sm case j601\_9.sm

v5 3 24.09242343902588 s [85, 89] 0.0 [0, 0, 0, 0, 3, 4, 14, 7, 6, 6, 14, 17, 12, 21, 29, 15, 14, 15, 21, 19, 4, 19, 19, 39, 6, 13, 28, 35, 15, 28, 35, 22, 29, 43, 27, 12, 18, 22, 35, 46, 43, 44, 28, 47, 39, 35, 49, 60, 70, 50, 52, 60, 26, 39, 54, 64, 46, 70, 75, 77, 49, 85] 0

k\_1000 110

opm 60

the random choice case path in j60 ./rcpsp/j60.sm/j6020\_1.sm case j6020\_1.sm

v5 0 0.6751883029937744 s [60, 94] 0.0 [0, 0, 0, 0, 5, 5, 10, 5, 5, 5, 11, 6, 7, 11, 15, 13, 11, 5, 13, 13, 15, 15, 20, 11, 23, 13, 23, 17, 13, 18, 28, 20, 23, 27, 28, 23, 35, 22, 29, 13, 27, 35, 36, 43, 35, 31, 22, 44, 18, 33, 36, 45, 43, 42, 53, 47, 30, 55, 42, 58, 56, 60] 0

k\_1000 111

opm 70

the random choice case path in j60 ./rcpsp/j60.sm/j6020\_10.sm case j6020\_10.sm

v5 0 0.7439994812011719 s [70, 72] 0.0 [0, 0, 0, 0, 1, 7, 7, 11, 11, 18, 18, 1, 13, 13, 21, 5, 13, 1, 17, 25, 33, 7, 7, 15, 16, 21, 9, 15, 22, 7, 15, 23, 17, 23, 38, 33, 9, 12, 17, 22, 47, 23, 38, 23, 26, 40, 24, 43, 42, 33, 43, 48, 49, 51, 17, 55, 53, 47, 49, 54, 60, 70] 0

k\_1000 112

opm 78

the random choice case path in j60 ./rcpsp/j60.sm/j6020\_2.sm case j6020\_2.sm

v5 0 0.5306172370910645 s [78, 78] 0.0 [0, 0, 0, 0, 3, 3, 6, 6, 6, 6, 10, 2, 14, 10, 19, 16, 6, 6, 11, 20, 13, 22, 20, 22, 21, 28, 26, 22, 30, 38, 28, 14, 12, 6, 21, 35, 11, 32, 21, 35, 12, 12, 16, 36, 26, 43, 37, 27, 34, 15, 45, 55, 37, 60, 19, 37, 62, 70, 75, 46, 62, 78] 0

k\_1000 113

opm 69

the random choice case path in j60 ./rcpsp/j60.sm/j6020\_3.sm case j6020\_3.sm

v5 0 0.7240538597106934 s [69, 69] 0.0 [0, 0, 0, 0, 3, 10, 3, 5, 8, 5, 10, 10, 13, 5, 18, 20, 18, 3, 28, 18, 10, 20, 26, 19, 21, 28, 20, 22, 28, 20, 30, 10, 20, 10, 29, 30, 31, 18, 39, 35, 39, 18, 34, 49, 34, 43, 43, 21, 45, 13, 44, 30, 53, 45, 47, 52, 39, 52, 60, 57, 62, 69] 0

k\_1000 114

opm 86

the random choice case path in j60 ./rcpsp/j60.sm/j6020\_4.sm case j6020\_4.sm

v5 0 0.6881577968597412 s [86, 131] 0.0 [0, 0, 0, 0, 8, 8, 13, 14, 13, 14, 14, 13, 8, 20, 16, 8, 24, 16, 14, 27, 27, 16, 24, 8, 19, 16, 16, 28, 1, 22, 21, 16, 14, 28, 21, 21, 16, 33, 16, 30, 30, 21, 36, 28, 37, 32, 33, 37, 40, 43, 39, 16, 39, 45, 46, 54, 63, 72, 24, 26, 82, 86] 0

k\_1000 115

opm 71

the random choice case path in j60 ./rcpsp/j60.sm/j6020\_5.sm case j6020\_5.sm

v5 0 0.5903754234313965 s [71, 71] 0.0 [0, 0, 0, 0, 6, 1, 7, 7, 7, 12, 14, 6, 21, 23, 31, 13, 12, 21, 30, 14, 23, 12, 23, 23, 30, 31, 14, 6, 33, 16, 18, 8, 40, 40, 13, 19, 14, 18, 42, 21, 46, 7, 29, 29, 21, 38, 46, 32, 38, 46, 47, 29, 46, 30, 46, 50, 56, 61, 66, 35, 56, 71] 0

k\_1000 116

opm 97

the random choice case path in j60 ./rcpsp/j60.sm/j6020\_6.sm case j6020\_6.sm

v5 0 0.7130906581878662 s [97, 128] 0.0 [0, 0, 0, 0, 8, 1, 1, 1, 2, 2, 10, 10, 11, 2, 18, 13, 10, 8, 11, 13, 11, 15, 17, 9, 9, 8, 13, 13, 16, 17, 15, 10, 26, 4, 23, 27, 13, 15, 35, 40, 40, 48, 15, 56, 40, 15, 56, 48, 25, 33, 23, 61, 61, 25, 23, 70, 78, 88, 70, 57, 96, 97] 0

k\_1000 117

opm 74

the random choice case path in j60 ./rcpsp/j60.sm/j6020\_7.sm case j6020\_7.sm

v5 0 0.919501781463623 s [74, 99] 0.0 [0, 0, 0, 0, 10, 10, 5, 10, 5, 14, 10, 20, 22, 17, 17, 10, 14, 28, 19, 24, 5, 10, 20, 19, 28, 19, 28, 22, 22, 23, 28, 24, 36, 37, 29, 36, 37, 43, 17, 30, 20, 41, 33, 37, 19, 42, 24, 45, 49, 33, 49, 25, 54, 56, 54, 57, 59, 63, 29, 66, 63, 74] 0

k\_1000 118

opm 65

the random choice case path in j60 ./rcpsp/j60.sm/j6020\_8.sm case j6020\_8.sm

v5 0 0.5555040836334229 s [65, 87] 0.0 [0, 0, 0, 0, 8, 6, 11, 6, 17, 20, 21, 11, 8, 21, 18, 20, 7, 7, 11, 21, 20, 24, 18, 8, 7, 30, 14, 18, 17, 29, 15, 22, 13, 22, 27, 31, 25, 39, 36, 25, 23, 27, 43, 13, 27, 37, 28, 39, 48, 32, 52, 43, 23, 43, 32, 36, 48, 38, 50, 39, 55, 65] 0

k\_1000 119

opm 74

the random choice case path in j60 ./rcpsp/j60.sm/j6020\_9.sm case j6020\_9.sm

v5 0 0.6453096866607666 s [74, 74] 0.0 [0, 0, 0, 0, 1, 3, 9, 3, 3, 16, 11, 17, 11, 20, 11, 1, 25, 25, 33, 29, 39, 19, 18, 17, 22, 20, 25, 20, 19, 25, 7, 22, 25, 39, 29, 30, 20, 26, 29, 37, 41, 29, 42, 51, 36, 51, 46, 52, 48, 37, 51, 57, 57, 57, 46, 58, 31, 62, 53, 72, 68, 74] 0

k\_1000 120

opm 103

the random choice case path in j60 ./rcpsp/j60.sm/j6021\_1.sm case j6021\_1.sm

v5 60 592.2473232746124 s [107, 122] 3.8834951456310676 [0, 0, 0, 0, 3, 6, 8, 23, 8, 15, 30, 5, 23, 30, 28, 8, 32, 13, 67, 4, 36, 28, 39, 42, 36, 45, 38, 48, 48, 52, 15, 52, 45, 62, 62, 40, 45, 63, 59, 71, 49, 81, 85, 69, 58, 58, 66, 71, 88, 90, 69, 94, 77, 90, 99, 68, 75, 96, 103, 97, 97, 107] 0

k\_1000 121

opm 80

the random choice case path in j60 ./rcpsp/j60.sm/j6021\_10.sm case j6021\_10.sm

v5 2 16.033939123153687 s [78, 115] -2.5 [0, 0, 0, 0, 5, 11, 20, 30, 31, 12, 19, 34, 12, 4, 30, 8, 53, 20, 20, 12, 8, 40, 20, 17, 8, 19, 29, 37, 23, 31, 43, 43, 49, 17, 54, 26, 17, 45, 34, 52, 44, 45, 56, 62, 52, 54, 54, 70, 54, 58, 60, 64, 54, 64, 64, 64, 64, 69, 76, 64, 71, 78] 0

k\_1000 122

opm 108

the random choice case path in j60 ./rcpsp/j60.sm/j6021\_2.sm case j6021\_2.sm

v5 4 62.43716597557068 s [107, 205] -0.9259259259259258 [0, 0, 3, 0, 3, 22, 4, 3, 17, 4, 13, 52, 10, 3, 14, 11, 17, 22, 8, 27, 28, 47, 17, 67, 26, 52, 52, 37, 37, 39, 36, 29, 20, 49, 61, 39, 64, 39, 49, 57, 71, 76, 32, 58, 58, 57, 45, 76, 58, 67, 70, 76, 65, 90, 71, 84, 78, 67, 76, 79, 100, 107] 0

k\_1000 123

opm 87

the random choice case path in j60 ./rcpsp/j60.sm/j6021\_3.sm case j6021\_3.sm

v5 39 590.1716110706329 s [95, 101] 9.195402298850574 [0, 0, 0, 0, 33, 1, 8, 11, 30, 11, 6, 13, 36, 11, 18, 18, 33, 1, 11, 25, 61, 20, 1, 41, 40, 25, 45, 33, 25, 70, 30, 36, 45, 51, 39, 75, 38, 43, 45, 60, 35, 45, 61, 45, 63, 66, 70, 77, 53, 50, 71, 47, 75, 57, 71, 71, 75, 82, 83, 83, 91, 95] 0

k\_1000 124

opm 95

the random choice case path in j60 ./rcpsp/j60.sm/j6021\_4.sm case j6021\_4.sm

v5 38 601.1145215034485 s [99, 101] 4.2105263157894735 [0, 0, 0, 3, 3, 5, 12, 13, 3, 20, 3, 8, 12, 21, 20, 12, 21, 31, 20, 53, 21, 60, 21, 28, 40, 47, 34, 41, 23, 47, 39, 45, 22, 25, 69, 34, 40, 54, 62, 52, 62, 63, 68, 72, 68, 76, 71, 79, 70, 89, 72, 65, 79, 62, 68, 79, 82, 86, 80, 89, 91, 99] 0

k\_1000 125

opm 89

the random choice case path in j60 ./rcpsp/j60.sm/j6021\_5.sm case j6021\_5.sm

v5 57 597.4067981243134 s [92, 164] 3.3707865168539324 [0, 0, 0, 0, 2, 14, 10, 10, 2, 15, 37, 15, 12, 8, 26, 32, 44, 21, 22, 16, 2, 21, 35, 12, 29, 25, 21, 32, 45, 29, 32, 42, 42, 37, 44, 66, 52, 55, 31, 53, 53, 37, 62, 52, 65, 45, 53, 51, 58, 55, 58, 69, 67, 63, 73, 77, 80, 77, 84, 79, 71, 92] 0

k\_1000 126

opm 84

the random choice case path in j60 ./rcpsp/j60.sm/j6021\_6.sm case j6021\_6.sm

v5 43 603.3298759460449 s [89, 93] 5.952380952380952 [0, 2, 0, 0, 2, 2, 7, 9, 6, 10, 10, 11, 10, 9, 25, 11, 21, 21, 25, 15, 35, 15, 48, 19, 56, 11, 11, 32, 57, 21, 32, 48, 53, 42, 40, 67, 32, 48, 19, 70, 57, 72, 59, 75, 9, 69, 48, 48, 70, 59, 61, 42, 56, 70, 69, 77, 72, 81, 87, 79, 83, 89] 0

k\_1000 127

opm 103

the random choice case path in j60 ./rcpsp/j60.sm/j6021\_7.sm case j6021\_7.sm

v5 38 600.5792825222015 s [105, 133] 1.9417475728155338 [0, 0, 0, 0, 14, 10, 5, 15, 4, 4, 18, 21, 4, 15, 23, 15, 15, 16, 14, 21, 15, 30, 39, 17, 21, 28, 29, 39, 59, 16, 39, 45, 30, 24, 59, 32, 45, 46, 45, 24, 15, 56, 46, 48, 69, 69, 79, 68, 83, 79, 75, 69, 85, 45, 69, 83, 92, 85, 96, 93, 96, 105] 0

k\_1000 128

opm 110

the random choice case path in j60 ./rcpsp/j60.sm/j6021\_8.sm case j6021\_8.sm

v5 17 200.839182138443 s [110, 286] 0.0 [0, 0, 0, 0, 11, 2, 8, 20, 11, 2, 19, 20, 28, 33, 33, 11, 20, 26, 26, 36, 46, 33, 17, 28, 67, 46, 49, 35, 36, 17, 60, 44, 2, 41, 58, 58, 11, 11, 46, 41, 62, 51, 67, 60, 62, 67, 84, 68, 80, 74, 84, 74, 91, 74, 68, 91, 76, 84, 100, 80, 100, 110] 0

k\_1000 129

opm 89

the random choice case path in j60 ./rcpsp/j60.sm/j6021\_9.sm case j6021\_9.sm

v5 37 589.1966688632965 s [97, 140] 8.98876404494382 [0, 0, 7, 0, 3, 16, 9, 7, 9, 3, 36, 9, 16, 7, 10, 10, 10, 21, 25, 10, 27, 18, 9, 13, 54, 38, 49, 22, 28, 16, 18, 22, 21, 18, 68, 60, 40, 45, 46, 60, 54, 38, 54, 69, 68, 50, 56, 80, 59, 60, 68, 71, 60, 78, 69, 88, 78, 84, 90, 90, 87, 97] 0

k\_1000 130

opm 64

the random choice case path in j60 ./rcpsp/j60.sm/j6022\_1.sm case j6022\_1.sm

v5 207 600.2680990695953 s [65, 69] 1.5625 [0, 0, 0, 0, 6, 2, 2, 11, 11, 20, 13, 17, 20, 13, 7, 11, 16, 26, 6, 22, 25, 24, 20, 7, 27, 22, 22, 28, 31, 24, 16, 26, 2, 31, 27, 37, 37, 22, 32, 34, 34, 41, 43, 32, 28, 50, 37, 34, 35, 37, 31, 38, 43, 47, 45, 48, 36, 53, 57, 60, 56, 65] 0

k\_1000 131

opm 70

the random choice case path in j60 ./rcpsp/j60.sm/j6022\_10.sm case j6022\_10.sm

v5 45 204.03506922721863 s [70, 105] 0.0 [0, 0, 0, 0, 9, 9, 9, 16, 12, 12, 16, 13, 19, 17, 6, 19, 25, 25, 17, 25, 16, 30, 27, 13, 25, 32, 30, 33, 33, 33, 25, 41, 30, 33, 32, 48, 45, 35, 40, 30, 34, 34, 40, 48, 45, 40, 38, 40, 53, 42, 40, 55, 56, 55, 49, 35, 55, 48, 60, 65, 60, 70] 0

k\_1000 132

opm 83

the random choice case path in j60 ./rcpsp/j60.sm/j6022\_2.sm case j6022\_2.sm

v5 29 127.06019520759583 s [83, 113] 0.0 [0, 0, 0, 0, 10, 24, 7, 15, 5, 15, 15, 20, 25, 15, 10, 21, 10, 25, 16, 21, 35, 30, 30, 15, 24, 20, 15, 25, 36, 35, 21, 22, 24, 35, 15, 21, 35, 33, 48, 37, 41, 39, 49, 33, 42, 58, 41, 51, 49, 42, 29, 48, 51, 58, 61, 63, 72, 66, 64, 73, 73, 83] 0

k\_1000 133

opm 70

the random choice case path in j60 ./rcpsp/j60.sm/j6022\_3.sm case j6022\_3.sm

v5 98 599.511167049408 s [72, 99] 2.857142857142857 [0, 0, 0, 0, 10, 9, 20, 20, 22, 23, 9, 28, 26, 20, 9, 36, 23, 23, 30, 36, 24, 30, 23, 4, 23, 30, 37, 38, 41, 10, 4, 38, 31, 34, 44, 43, 14, 30, 45, 31, 46, 45, 42, 35, 55, 47, 34, 47, 38, 46, 56, 59, 39, 62, 35, 59, 66, 65, 68, 68, 62, 72] 0

k\_1000 134

opm 73

the random choice case path in j60 ./rcpsp/j60.sm/j6022\_4.sm case j6022\_4.sm

v5 93 601.2696099281311 s [74, 131] 1.36986301369863 [0, 0, 0, 0, 4, 8, 4, 6, 4, 9, 25, 13, 26, 10, 6, 16, 13, 18, 28, 8, 10, 15, 17, 31, 16, 20, 18, 34, 34, 37, 28, 27, 21, 30, 37, 13, 47, 15, 36, 56, 38, 38, 21, 47, 48, 57, 36, 35, 44, 44, 50, 20, 34, 58, 56, 48, 58, 65, 68, 68, 58, 74] 0

k\_1000 135

opm 76

the random choice case path in j60 ./rcpsp/j60.sm/j6022\_5.sm case j6022\_5.sm

v5 2 11.16256332397461 s [76, 96] 0.0 [0, 0, 0, 0, 5, 10, 7, 16, 20, 16, 27, 16, 26, 7, 26, 10, 10, 45, 35, 13, 28, 23, 25, 45, 21, 49, 52, 25, 5, 28, 28, 13, 28, 25, 37, 60, 28, 52, 34, 45, 55, 34, 23, 41, 34, 35, 48, 54, 61, 58, 44, 43, 50, 50, 62, 61, 54, 66, 66, 70, 66, 76] 0

k\_1000 136

opm 79

the random choice case path in j60 ./rcpsp/j60.sm/j6022\_6.sm case j6022\_6.sm

v5 1 4.091340065002441 s [79, 84] 0.0 [0, 0, 0, 0, 9, 19, 9, 15, 9, 24, 15, 16, 10, 25, 4, 27, 27, 16, 19, 35, 32, 24, 9, 33, 35, 33, 39, 32, 45, 53, 42, 32, 10, 48, 48, 18, 9, 25, 35, 39, 15, 42, 39, 63, 42, 53, 51, 63, 51, 55, 70, 55, 55, 62, 25, 50, 62, 63, 68, 70, 72, 79] 0

k\_1000 137

opm 69

the random choice case path in j60 ./rcpsp/j60.sm/j6022\_7.sm case j6022\_7.sm

v5 3 13.815540313720703 s [69, 84] 0.0 [0, 0, 0, 0, 2, 5, 2, 13, 6, 6, 18, 6, 23, 14, 2, 6, 23, 12, 7, 8, 6, 17, 34, 12, 14, 36, 24, 24, 44, 17, 24, 23, 30, 30, 30, 40, 32, 27, 24, 34, 30, 42, 50, 40, 44, 49, 50, 32, 41, 57, 29, 53, 47, 56, 41, 64, 61, 44, 61, 68, 57, 69] 0

k\_1000 138

opm 59

the random choice case path in j60 ./rcpsp/j60.sm/j6022\_8.sm case j6022\_8.sm

v5 2 6.905554294586182 s [59, 80] 0.0 [0, 0, 0, 0, 4, 4, 1, 4, 1, 4, 10, 10, 14, 1, 7, 7, 24, 28, 12, 9, 13, 18, 20, 7, 12, 20, 26, 9, 26, 24, 20, 20, 26, 27, 31, 21, 29, 31, 29, 13, 14, 32, 28, 38, 30, 31, 40, 36, 41, 31, 39, 31, 39, 43, 43, 48, 50, 47, 57, 48, 57, 59] 0

k\_1000 139

opm 65

the random choice case path in j60 ./rcpsp/j60.sm/j6022\_9.sm case j6022\_9.sm

v5 5 16.521307706832886 s [65, 69] 0.0 [0, 0, 0, 0, 3, 9, 9, 9, 5, 11, 14, 11, 7, 5, 18, 18, 19, 3, 12, 31, 7, 14, 27, 24, 16, 20, 14, 14, 18, 36, 27, 13, 18, 31, 21, 12, 26, 27, 18, 39, 27, 27, 23, 28, 24, 32, 42, 28, 32, 39, 40, 42, 39, 41, 39, 48, 43, 39, 48, 51, 57, 65] 0

k\_1000 140

opm 75

the random choice case path in j60 ./rcpsp/j60.sm/j6023\_1.sm case j6023\_1.sm

v5 0 1.1737895011901855 s [75, 94] 0.0 [0, 0, 0, 0, 6, 9, 10, 19, 16, 16, 6, 26, 9, 9, 15, 21, 16, 29, 31, 31, 22, 21, 21, 16, 31, 33, 28, 22, 29, 26, 20, 33, 23, 41, 35, 15, 42, 50, 50, 42, 41, 40, 29, 31, 42, 46, 40, 55, 63, 46, 44, 53, 47, 64, 47, 50, 63, 57, 57, 67, 71, 75] 0

k\_1000 141

opm 68

the random choice case path in j60 ./rcpsp/j60.sm/j6023\_10.sm case j6023\_10.sm

v5 0 1.1878514289855957 s [68, 70] 0.0 [0, 0, 0, 0, 4, 3, 3, 9, 11, 3, 19, 23, 9, 14, 7, 9, 21, 9, 14, 23, 28, 16, 20, 20, 20, 20, 9, 38, 11, 28, 12, 22, 24, 29, 27, 20, 21, 22, 24, 32, 32, 20, 35, 11, 37, 41, 35, 46, 37, 22, 53, 39, 57, 62, 43, 32, 38, 41, 46, 53, 64, 68] 0

k\_1000 142

opm 69

the random choice case path in j60 ./rcpsp/j60.sm/j6023\_2.sm case j6023\_2.sm

v5 0 1.3998103141784668 s [69, 69] 0.0 [0, 0, 0, 0, 4, 6, 6, 11, 21, 15, 4, 6, 24, 13, 30, 7, 17, 27, 24, 16, 16, 15, 13, 17, 4, 24, 10, 31, 26, 35, 37, 40, 30, 39, 21, 41, 21, 42, 27, 24, 24, 26, 42, 40, 45, 47, 51, 45, 52, 28, 42, 51, 57, 53, 31, 38, 52, 57, 67, 67, 62, 69] 0

k\_1000 143

opm 78

the random choice case path in j60 ./rcpsp/j60.sm/j6023\_3.sm case j6023\_3.sm

v5 4 12.257747888565063 s [78, 94] 0.0 [0, 0, 0, 0, 10, 1, 8, 17, 2, 10, 13, 8, 17, 10, 24, 23, 8, 10, 19, 20, 18, 20, 10, 28, 26, 33, 2, 26, 29, 41, 23, 22, 18, 26, 33, 19, 35, 26, 24, 26, 30, 29, 32, 47, 32, 41, 44, 47, 49, 49, 42, 47, 33, 47, 52, 33, 62, 52, 57, 71, 55, 78] 0

k\_1000 144

opm 83

the random choice case path in j60 ./rcpsp/j60.sm/j6023\_4.sm case j6023\_4.sm

v5 2 5.259877920150757 s [83, 110] 0.0 [0, 0, 0, 0, 7, 7, 30, 17, 10, 16, 6, 6, 16, 26, 16, 33, 34, 7, 34, 44, 16, 7, 44, 34, 44, 46, 33, 26, 51, 51, 16, 57, 10, 66, 59, 26, 53, 71, 27, 46, 51, 52, 54, 56, 49, 54, 60, 71, 26, 72, 52, 56, 16, 74, 75, 60, 65, 66, 78, 75, 69, 83] 0

k\_1000 145

opm 72

the random choice case path in j60 ./rcpsp/j60.sm/j6023\_5.sm case j6023\_5.sm

v5 7 19.480238437652588 s [72, 72] 0.0 [0, 0, 0, 0, 1, 10, 9, 1, 17, 8, 8, 19, 9, 18, 9, 17, 16, 10, 10, 19, 21, 26, 27, 33, 18, 42, 36, 17, 40, 8, 16, 21, 30, 24, 24, 27, 17, 24, 41, 44, 45, 38, 11, 32, 35, 42, 41, 32, 31, 45, 47, 49, 2, 42, 48, 48, 50, 56, 56, 64, 54, 72] 0

k\_1000 146

opm 81

the random choice case path in j60 ./rcpsp/j60.sm/j6023\_6.sm case j6023\_6.sm

v5 1 4.290850639343262 s [81, 112] 0.0 [0, 0, 0, 0, 18, 5, 10, 10, 5, 13, 2, 14, 5, 24, 9, 9, 36, 13, 3, 14, 24, 14, 21, 14, 25, 31, 41, 14, 2, 25, 7, 34, 11, 31, 41, 48, 13, 52, 56, 48, 48, 31, 48, 42, 56, 19, 25, 64, 51, 26, 55, 62, 36, 69, 75, 55, 62, 69, 73, 69, 79, 81] 0

k\_1000 147

opm 60

the random choice case path in j60 ./rcpsp/j60.sm/j6023\_7.sm case j6023\_7.sm

v5 17 39.62285923957825 s [60, 105] 0.0 [0, 0, 0, 0, 13, 4, 9, 9, 11, 14, 19, 11, 19, 9, 4, 16, 16, 16, 27, 19, 9, 23, 4, 22, 27, 19, 9, 23, 14, 16, 22, 27, 13, 31, 15, 34, 31, 20, 40, 28, 38, 20, 44, 22, 23, 32, 41, 44, 42, 38, 22, 50, 29, 44, 45, 40, 50, 54, 58, 38, 51, 60] 0

k\_1000 148

opm 72

the random choice case path in j60 ./rcpsp/j60.sm/j6023\_8.sm case j6023\_8.sm

v5 0 0.9860525131225586 s [72, 72] 0.0 [0, 0, 0, 0, 2, 10, 2, 3, 20, 10, 10, 16, 3, 19, 10, 3, 11, 25, 3, 20, 12, 12, 24, 20, 29, 19, 24, 32, 21, 39, 6, 32, 32, 3, 10, 42, 32, 42, 34, 32, 44, 25, 25, 44, 49, 49, 51, 40, 40, 39, 47, 42, 49, 57, 51, 52, 46, 64, 66, 60, 64, 72] 0

k\_1000 149

opm 64

the random choice case path in j60 ./rcpsp/j60.sm/j6023\_9.sm case j6023\_9.sm

v5 1 3.19052791595459 s [64, 81] 0.0 [0, 0, 0, 0, 5, 3, 21, 5, 6, 11, 6, 18, 10, 18, 26, 33, 4, 6, 10, 12, 10, 26, 14, 12, 21, 24, 18, 23, 22, 20, 23, 23, 32, 26, 33, 25, 24, 38, 35, 24, 29, 22, 33, 37, 37, 21, 35, 33, 42, 42, 43, 33, 44, 48, 54, 42, 37, 39, 54, 57, 45, 64] 0

k\_1000 150

opm 65

the random choice case path in j60 ./rcpsp/j60.sm/j6024\_1.sm case j6024\_1.sm

v5 0 0.8456828594207764 s [65, 65] 0.0 [0, 0, 0, 0, 6, 14, 15, 7, 15, 22, 22, 12, 27, 12, 6, 22, 27, 29, 29, 15, 2, 15, 27, 15, 19, 29, 24, 30, 30, 20, 19, 14, 36, 20, 29, 26, 45, 7, 20, 33, 27, 30, 30, 37, 35, 29, 33, 37, 47, 45, 54, 37, 40, 18, 52, 37, 49, 49, 61, 58, 22, 65] 0

k\_1000 151

opm 66

the random choice case path in j60 ./rcpsp/j60.sm/j6024\_10.sm case j6024\_10.sm

v5 0 0.646308183670044 s [66, 84] 0.0 [0, 0, 0, 0, 6, 6, 3, 9, 16, 9, 10, 10, 3, 18, 22, 3, 6, 22, 24, 18, 31, 13, 18, 24, 28, 10, 25, 10, 21, 17, 31, 14, 35, 31, 35, 16, 42, 31, 34, 23, 28, 22, 34, 36, 43, 28, 36, 31, 39, 50, 52, 40, 42, 58, 44, 50, 50, 48, 58, 61, 56, 66] 0

k\_1000 152

opm 55

the random choice case path in j60 ./rcpsp/j60.sm/j6024\_2.sm case j6024\_2.sm

v5 0 0.6921842098236084 s [55, 63] 0.0 [0, 0, 0, 0, 7, 7, 6, 5, 6, 6, 5, 7, 7, 11, 11, 11, 5, 6, 15, 8, 13, 7, 14, 22, 14, 21, 13, 19, 15, 13, 17, 16, 17, 20, 16, 21, 19, 28, 18, 15, 25, 26, 21, 28, 33, 19, 34, 27, 34, 32, 33, 13, 31, 36, 40, 33, 34, 39, 40, 47, 42, 55] 0

k\_1000 153

opm 67

the random choice case path in j60 ./rcpsp/j60.sm/j6024\_3.sm case j6024\_3.sm

v5 0 0.6542508602142334 s [67, 67] 0.0 [0, 0, 0, 0, 2, 7, 7, 2, 7, 4, 7, 10, 10, 15, 17, 17, 6, 10, 24, 29, 24, 24, 37, 6, 29, 9, 15, 2, 7, 11, 40, 24, 30, 19, 16, 33, 21, 33, 33, 41, 24, 36, 32, 17, 44, 44, 41, 48, 49, 30, 38, 42, 46, 37, 48, 54, 50, 47, 60, 49, 55, 67] 0

k\_1000 154

opm 78

the random choice case path in j60 ./rcpsp/j60.sm/j6024\_4.sm case j6024\_4.sm

v5 0 0.970369815826416 s [78, 78] 0.0 [0, 0, 0, 0, 7, 7, 7, 7, 5, 13, 9, 13, 9, 20, 14, 5, 17, 12, 19, 21, 24, 13, 9, 24, 21, 17, 20, 20, 27, 20, 5, 33, 38, 38, 9, 12, 46, 40, 21, 33, 38, 41, 28, 35, 38, 46, 46, 50, 30, 50, 57, 19, 56, 63, 72, 57, 63, 67, 76, 35, 70, 78] 0

k\_1000 155

opm 76

the random choice case path in j60 ./rcpsp/j60.sm/j6024\_5.sm case j6024\_5.sm

v5 0 1.1681387424468994 s [76, 76] 0.0 [0, 0, 0, 0, 3, 3, 3, 8, 8, 2, 8, 14, 17, 23, 8, 8, 7, 2, 18, 26, 17, 13, 26, 29, 17, 12, 29, 16, 29, 29, 30, 8, 9, 39, 22, 21, 29, 35, 38, 49, 26, 30, 38, 51, 21, 51, 35, 40, 38, 59, 49, 27, 44, 58, 65, 42, 55, 33, 71, 49, 49, 76] 0

k\_1000 156

opm 75

the random choice case path in j60 ./rcpsp/j60.sm/j6024\_6.sm case j6024\_6.sm

v5 0 0.9285519123077393 s [75, 116] 0.0 [0, 0, 0, 0, 6, 14, 9, 4, 6, 6, 11, 12, 9, 10, 16, 9, 18, 16, 4, 13, 10, 12, 26, 14, 18, 22, 16, 25, 18, 13, 29, 38, 14, 31, 19, 11, 26, 22, 38, 26, 30, 19, 38, 30, 38, 26, 19, 42, 43, 27, 18, 47, 47, 50, 50, 57, 36, 65, 38, 69, 47, 75] 0

k\_1000 157

opm 68

the random choice case path in j60 ./rcpsp/j60.sm/j6024\_7.sm case j6024\_7.sm

v5 0 0.7908992767333984 s [68, 68] 0.0 [0, 0, 0, 0, 2, 2, 2, 9, 10, 10, 10, 16, 16, 22, 3, 22, 14, 15, 14, 9, 17, 1, 1, 3, 23, 14, 17, 16, 22, 16, 15, 24, 9, 22, 25, 17, 31, 25, 29, 30, 32, 29, 24, 42, 42, 31, 47, 34, 26, 20, 32, 38, 52, 29, 43, 51, 56, 40, 58, 58, 40, 68] 0

k\_1000 158

opm 81

the random choice case path in j60 ./rcpsp/j60.sm/j6024\_8.sm case j6024\_8.sm

v5 0 1.0591108798980713 s [81, 81] 0.0 [0, 0, 0, 0, 8, 16, 16, 25, 25, 33, 33, 8, 8, 25, 25, 15, 34, 40, 15, 35, 17, 33, 15, 39, 33, 41, 33, 29, 40, 35, 50, 25, 40, 40, 48, 25, 17, 50, 49, 28, 49, 42, 42, 50, 40, 50, 55, 59, 49, 50, 58, 63, 60, 63, 60, 69, 72, 51, 62, 60, 75, 81] 0

k\_1000 159

opm 80

the random choice case path in j60 ./rcpsp/j60.sm/j6024\_9.sm case j6024\_9.sm

v5 0 0.96616530418396 s [80, 173] 0.0 [0, 0, 0, 0, 2, 1, 5, 15, 25, 5, 2, 25, 30, 8, 15, 1, 34, 24, 1, 5, 25, 10, 15, 33, 2, 41, 15, 27, 38, 38, 32, 45, 8, 41, 49, 34, 38, 49, 16, 30, 34, 45, 39, 16, 41, 27, 46, 52, 41, 57, 58, 55, 57, 55, 63, 46, 46, 66, 66, 49, 72, 80] 0

k\_1000 160

opm 114

the random choice case path in j60 ./rcpsp/j60.sm/j6025\_1.sm case j6025\_1.sm

v5 21 598.8394351005554 s [125, 154] 9.649122807017543 [0, 0, 0, 4, 4, 11, 14, 14, 15, 28, 3, 27, 14, 37, 23, 26, 26, 13, 26, 23, 21, 33, 41, 65, 50, 73, 32, 52, 46, 46, 80, 67, 55, 82, 55, 75, 58, 99, 32, 70, 80, 109, 58, 82, 20, 64, 73, 90, 99, 75, 90, 112, 106, 118, 75, 114, 115, 114, 118, 124, 41, 125] 0

k\_1000 161

opm 108

the random choice case path in j60 ./rcpsp/j60.sm/j6025\_10.sm case j6025\_10.sm

v5 37 606.3321549892426 s [116, 130] 7.4074074074074066 [0, 0, 0, 7, 16, 20, 9, 9, 10, 22, 23, 12, 20, 20, 22, 27, 51, 16, 39, 31, 36, 23, 42, 42, 61, 43, 58, 32, 61, 66, 65, 48, 69, 43, 69, 50, 79, 75, 75, 74, 81, 72, 88, 82, 89, 52, 66, 101, 81, 74, 82, 86, 79, 97, 105, 99, 109, 101, 110, 108, 101, 116] 0

k\_1000 162

opm 98

the random choice case path in j60 ./rcpsp/j60.sm/j6025\_2.sm case j6025\_2.sm

v5 35 590.9492597579956 s [102, 135] 4.081632653061225 [0, 0, 6, 0, 8, 6, 6, 8, 10, 18, 20, 32, 17, 45, 11, 14, 47, 30, 18, 14, 50, 22, 11, 32, 27, 37, 70, 35, 40, 37, 48, 30, 64, 59, 52, 27, 42, 71, 50, 60, 27, 45, 53, 74, 66, 54, 77, 85, 74, 63, 74, 64, 84, 86, 69, 86, 86, 74, 96, 92, 92, 102] 0

k\_1000 163

opm 113

the random choice case path in j60 ./rcpsp/j60.sm/j6025\_3.sm case j6025\_3.sm

v5 24 587.7959427833557 s [117, 609] 3.5398230088495577 [0, 0, 0, 2, 2, 8, 8, 8, 16, 8, 24, 37, 29, 24, 23, 16, 18, 24, 14, 25, 27, 56, 39, 69, 56, 57, 29, 79, 48, 66, 69, 87, 15, 80, 50, 72, 64, 86, 40, 79, 84, 48, 74, 92, 60, 84, 70, 60, 79, 89, 97, 97, 80, 100, 70, 100, 106, 90, 98, 108, 110, 117] 0

k\_1000 164

opm 108

the random choice case path in j60 ./rcpsp/j60.sm/j6025\_4.sm case j6025\_4.sm

v5 26 601.6100099086761 s [115, 121] 6.481481481481481 [0, 0, 5, 0, 2, 11, 12, 26, 17, 23, 21, 31, 17, 23, 22, 2, 33, 12, 54, 38, 54, 74, 41, 33, 44, 70, 61, 2, 77, 41, 38, 49, 57, 64, 23, 65, 58, 40, 74, 81, 31, 81, 59, 84, 64, 56, 93, 77, 81, 72, 74, 88, 90, 84, 98, 93, 107, 99, 108, 108, 101, 115] 0

k\_1000 165

opm 97

the random choice case path in j60 ./rcpsp/j60.sm/j6025\_5.sm case j6025\_5.sm

v5 26 602.6302945613861 s [107, 241] 10.309278350515463 [0, 0, 0, 0, 9, 7, 18, 15, 9, 33, 7, 1, 37, 18, 23, 25, 25, 9, 38, 45, 33, 15, 27, 18, 58, 36, 45, 38, 6, 47, 48, 55, 45, 30, 54, 45, 25, 58, 74, 60, 69, 18, 48, 60, 81, 60, 78, 66, 91, 62, 74, 66, 79, 87, 78, 93, 81, 91, 98, 98, 98, 107] 0

k\_1000 166

opm 105

the random choice case path in j60 ./rcpsp/j60.sm/j6025\_6.sm case j6025\_6.sm

v5 34 600.4081475734711 s [116, 160] 10.476190476190476 [0, 0, 0, 0, 10, 15, 49, 25, 10, 50, 24, 29, 20, 29, 20, 52, 10, 57, 35, 35, 41, 35, 50, 51, 35, 42, 67, 37, 29, 60, 69, 50, 38, 69, 27, 67, 53, 57, 59, 76, 40, 84, 70, 80, 82, 91, 84, 94, 74, 96, 91, 106, 103, 96, 103, 87, 102, 104, 109, 102, 112, 116] 0

k\_1000 167

opm 90

the random choice case path in j60 ./rcpsp/j60.sm/j6025\_7.sm case j6025\_7.sm

v5 40 594.7762088775635 s [92, 323] 2.2222222222222223 [0, 0, 0, 0, 8, 6, 15, 34, 8, 16, 26, 25, 11, 28, 15, 16, 20, 34, 16, 58, 38, 40, 45, 8, 20, 16, 33, 45, 45, 56, 57, 43, 67, 18, 38, 51, 53, 65, 49, 49, 59, 76, 70, 43, 53, 67, 59, 59, 75, 60, 60, 59, 73, 81, 81, 60, 76, 84, 69, 91, 85, 92] 0

k\_1000 168

opm 99

the random choice case path in j60 ./rcpsp/j60.sm/j6025\_8.sm case j6025\_8.sm

v5 35 594.187712430954 s [113, 162] 14.14141414141414 [0, 0, 0, 0, 13, 4, 9, 3, 23, 31, 8, 16, 29, 17, 37, 26, 37, 39, 23, 50, 38, 19, 43, 41, 37, 53, 43, 31, 62, 49, 17, 23, 53, 65, 69, 66, 62, 51, 68, 54, 69, 65, 69, 56, 68, 78, 69, 78, 77, 87, 86, 62, 96, 87, 94, 95, 97, 98, 105, 96, 105, 113] 0

k\_1000 169

opm 99

the random choice case path in j60 ./rcpsp/j60.sm/j6025\_9.sm case j6025\_9.sm

v5 32 594.1839280128479 s [105, 118] 6.0606060606060606 [0, 0, 4, 0, 11, 20, 11, 15, 6, 25, 6, 10, 8, 20, 20, 27, 27, 8, 26, 48, 31, 56, 31, 40, 61, 41, 8, 59, 48, 10, 56, 55, 52, 69, 28, 42, 69, 65, 34, 76, 52, 80, 57, 82, 77, 69, 80, 67, 83, 61, 85, 76, 85, 76, 89, 89, 92, 80, 98, 93, 92, 105] 0

k\_1000 170

opm 80

the random choice case path in j60 ./rcpsp/j60.sm/j6026\_1.sm case j6026\_1.sm

v5 9 101.22207856178284 s [80, 111] 0.0 [0, 0, 0, 0, 8, 8, 8, 11, 11, 19, 17, 8, 8, 15, 7, 27, 14, 46, 47, 14, 36, 36, 23, 23, 23, 15, 19, 36, 24, 9, 33, 44, 46, 23, 27, 33, 28, 39, 46, 48, 36, 57, 24, 45, 36, 55, 59, 39, 54, 46, 61, 55, 41, 64, 61, 67, 50, 71, 76, 72, 66, 80] 0

k\_1000 171

opm 85

the random choice case path in j60 ./rcpsp/j60.sm/j6026\_10.sm case j6026\_10.sm

v5 1 4.065958499908447 s [85, 96] 0.0 [0, 0, 1, 0, 9, 1, 1, 9, 18, 34, 27, 9, 19, 4, 22, 19, 14, 22, 10, 21, 11, 24, 9, 10, 21, 21, 25, 26, 43, 35, 25, 28, 31, 21, 37, 34, 42, 38, 50, 49, 51, 49, 37, 50, 57, 32, 37, 51, 53, 57, 61, 57, 54, 40, 64, 70, 77, 67, 64, 79, 76, 85] 0

k\_1000 172

opm 66

the random choice case path in j60 ./rcpsp/j60.sm/j6026\_2.sm case j6026\_2.sm

v5 111 600.6179890632629 s [68, 74] 3.0303030303030303 [0, 0, 0, 0, 4, 11, 15, 12, 1, 6, 11, 19, 4, 1, 14, 24, 11, 15, 22, 11, 29, 34, 35, 27, 22, 18, 32, 15, 22, 36, 32, 39, 24, 49, 12, 29, 25, 24, 32, 23, 32, 40, 40, 39, 48, 33, 50, 38, 50, 58, 39, 57, 58, 60, 54, 62, 54, 62, 62, 67, 63, 68] 0

k\_1000 173

opm 76

the random choice case path in j60 ./rcpsp/j60.sm/j6026\_3.sm case j6026\_3.sm

v5 87 597.5538804531097 s [78, 136] 2.631578947368421 [0, 0, 0, 0, 5, 6, 5, 10, 6, 17, 5, 16, 10, 15, 6, 17, 15, 22, 13, 32, 15, 41, 8, 43, 23, 22, 21, 31, 25, 21, 15, 52, 31, 43, 7, 15, 41, 49, 53, 19, 13, 59, 23, 36, 41, 57, 25, 62, 49, 33, 39, 60, 40, 50, 33, 59, 67, 62, 72, 73, 66, 78] 0

k\_1000 174

opm 67

the random choice case path in j60 ./rcpsp/j60.sm/j6026\_4.sm case j6026\_4.sm

v5 92 602.0156009197235 s [71, 203] 5.970149253731343 [0, 0, 0, 0, 2, 9, 7, 4, 7, 1, 4, 9, 17, 21, 18, 22, 9, 21, 9, 2, 24, 9, 13, 23, 11, 15, 17, 26, 15, 18, 15, 31, 13, 21, 26, 37, 37, 39, 31, 36, 24, 47, 31, 28, 57, 45, 39, 17, 50, 37, 46, 39, 47, 54, 58, 54, 58, 64, 67, 61, 46, 71] 0

k\_1000 175

opm 61

the random choice case path in j60 ./rcpsp/j60.sm/j6026\_5.sm case j6026\_5.sm

v5 8 26.59471035003662 s [61, 99] 0.0 [0, 0, 0, 0, 4, 2, 2, 6, 7, 10, 10, 4, 17, 7, 11, 14, 37, 19, 26, 10, 7, 32, 9, 26, 13, 9, 15, 27, 19, 18, 14, 28, 22, 17, 30, 38, 38, 34, 32, 27, 18, 22, 32, 22, 23, 26, 35, 43, 40, 40, 33, 47, 34, 31, 40, 46, 52, 50, 47, 57, 53, 61] 0

k\_1000 176

opm 74

the random choice case path in j60 ./rcpsp/j60.sm/j6026\_6.sm case j6026\_6.sm

v5 80 597.6717238426208 s [78, 81] 5.405405405405405 [0, 0, 0, 0, 4, 8, 12, 29, 6, 12, 6, 9, 12, 21, 62, 20, 33, 8, 23, 26, 20, 23, 26, 16, 17, 20, 32, 28, 20, 28, 32, 40, 38, 34, 32, 44, 28, 36, 43, 29, 48, 9, 44, 35, 45, 55, 47, 45, 43, 55, 50, 56, 58, 64, 52, 59, 62, 71, 73, 71, 71, 78] 0

k\_1000 177

opm 72

the random choice case path in j60 ./rcpsp/j60.sm/j6026\_7.sm case j6026\_7.sm

v5 0 1.7097632884979248 s [72, 74] 0.0 [0, 0, 0, 0, 1, 7, 7, 9, 2, 3, 6, 1, 16, 13, 10, 3, 20, 13, 23, 9, 26, 16, 7, 7, 10, 10, 21, 13, 22, 36, 13, 27, 36, 3, 26, 31, 13, 25, 23, 38, 36, 42, 43, 38, 31, 44, 43, 44, 44, 32, 51, 53, 51, 40, 53, 51, 52, 61, 65, 57, 56, 72] 0

k\_1000 178

opm 89

the random choice case path in j60 ./rcpsp/j60.sm/j6026\_8.sm case j6026\_8.sm

v5 4 30.840410709381104 s [89, 105] 0.0 [0, 0, 0, 0, 4, 1, 7, 10, 14, 14, 6, 6, 3, 12, 12, 21, 31, 18, 23, 14, 18, 7, 33, 25, 29, 22, 14, 40, 43, 48, 16, 33, 50, 51, 40, 43, 25, 61, 43, 67, 38, 54, 53, 61, 62, 61, 62, 29, 18, 23, 64, 74, 8, 78, 48, 66, 73, 86, 88, 66, 66, 89] 0

k\_1000 179

opm 65

the random choice case path in j60 ./rcpsp/j60.sm/j6026\_9.sm case j6026\_9.sm

v5 103 600.5859677791595 s [66, 102] 1.5384615384615385 [0, 0, 0, 0, 5, 10, 10, 5, 4, 5, 16, 20, 7, 19, 7, 32, 12, 11, 7, 10, 8, 13, 35, 39, 7, 21, 18, 9, 9, 37, 25, 40, 23, 20, 19, 34, 32, 31, 25, 31, 23, 34, 47, 24, 40, 35, 34, 49, 41, 47, 50, 48, 40, 50, 56, 44, 48, 57, 54, 57, 62, 66] 0

k\_1000 180

opm 96

the random choice case path in j60 ./rcpsp/j60.sm/j6027\_1.sm case j6027\_1.sm

v5 0 1.2458970546722412 s [96, 124] 0.0 [0, 0, 0, 0, 5, 13, 5, 5, 23, 6, 32, 29, 5, 5, 37, 10, 15, 13, 29, 23, 23, 10, 11, 16, 45, 38, 45, 38, 37, 21, 48, 32, 45, 40, 50, 48, 16, 38, 5, 42, 55, 60, 45, 68, 74, 50, 45, 55, 15, 65, 67, 68, 74, 80, 65, 77, 75, 85, 80, 86, 85, 96] 0

k\_1000 181

opm 57

the random choice case path in j60 ./rcpsp/j60.sm/j6027\_10.sm case j6027\_10.sm

v5 1 2.38383150100708 s [57, 91] 0.0 [0, 0, 0, 0, 5, 6, 5, 12, 6, 3, 5, 16, 16, 6, 24, 10, 11, 24, 26, 10, 12, 18, 17, 27, 17, 11, 11, 13, 17, 19, 23, 13, 20, 28, 19, 24, 28, 19, 33, 26, 27, 32, 20, 40, 33, 36, 29, 43, 35, 45, 13, 36, 43, 45, 38, 45, 47, 49, 51, 50, 55, 57] 0

k\_1000 182

opm 74

the random choice case path in j60 ./rcpsp/j60.sm/j6027\_2.sm case j6027\_2.sm

v5 1 2.147326707839966 s [74, 93] 0.0 [0, 0, 0, 0, 7, 11, 11, 2, 7, 7, 14, 12, 18, 21, 7, 12, 2, 15, 11, 24, 19, 32, 11, 21, 31, 29, 21, 33, 19, 29, 27, 2, 2, 29, 33, 4, 34, 31, 30, 33, 34, 43, 43, 29, 35, 37, 45, 47, 2, 37, 47, 49, 55, 50, 54, 38, 52, 60, 68, 64, 35, 74] 0

k\_1000 183

opm 76

the random choice case path in j60 ./rcpsp/j60.sm/j6027\_3.sm case j6027\_3.sm

v5 6 16.018174648284912 s [76, 93] 0.0 [0, 0, 0, 0, 10, 1, 1, 18, 1, 26, 1, 33, 18, 20, 8, 13, 10, 14, 29, 33, 10, 29, 20, 38, 3, 46, 40, 18, 10, 3, 22, 33, 37, 40, 46, 13, 11, 40, 49, 26, 50, 14, 20, 34, 51, 18, 54, 52, 54, 46, 55, 55, 61, 63, 56, 30, 65, 68, 75, 69, 65, 76] 0

k\_1000 184

opm 60

the random choice case path in j60 ./rcpsp/j60.sm/j6027\_4.sm case j6027\_4.sm

v5 3 5.998092174530029 s [60, 60] 0.0 [0, 0, 0, 0, 10, 10, 5, 10, 13, 13, 18, 17, 19, 12, 12, 26, 26, 13, 13, 23, 25, 21, 19, 26, 22, 13, 18, 22, 20, 17, 25, 34, 25, 19, 27, 36, 25, 38, 27, 16, 20, 29, 39, 31, 37, 36, 40, 44, 40, 33, 39, 46, 25, 35, 54, 42, 44, 38, 49, 56, 57, 60] 0

k\_1000 185

opm 78

the random choice case path in j60 ./rcpsp/j60.sm/j6027\_5.sm case j6027\_5.sm

v5 1 2.7878243923187256 s [78, 82] 0.0 [0, 0, 0, 0, 3, 6, 5, 6, 15, 3, 6, 8, 21, 17, 8, 16, 18, 20, 35, 8, 17, 15, 13, 13, 21, 26, 18, 13, 28, 28, 11, 28, 17, 28, 36, 26, 16, 28, 36, 36, 13, 45, 34, 18, 44, 43, 47, 46, 49, 44, 43, 52, 49, 58, 51, 52, 68, 59, 58, 70, 60, 78] 0

k\_1000 186

opm 64

the random choice case path in j60 ./rcpsp/j60.sm/j6027\_6.sm case j6027\_6.sm

v5 0 1.3554918766021729 s [64, 77] 0.0 [0, 0, 0, 0, 1, 10, 1, 5, 11, 11, 10, 10, 15, 9, 11, 15, 10, 10, 19, 21, 18, 25, 11, 29, 18, 13, 18, 24, 21, 11, 29, 22, 19, 28, 15, 31, 25, 37, 31, 5, 22, 40, 40, 46, 24, 21, 32, 35, 40, 34, 37, 46, 40, 43, 46, 46, 44, 49, 55, 56, 52, 64] 0

k\_1000 187

opm 83

the random choice case path in j60 ./rcpsp/j60.sm/j6027\_7.sm case j6027\_7.sm

v5 1 3.1228039264678955 s [83, 83] 0.0 [0, 0, 0, 0, 14, 10, 18, 7, 27, 30, 18, 10, 18, 27, 8, 33, 10, 30, 30, 13, 10, 40, 10, 55, 40, 26, 38, 40, 36, 44, 44, 18, 49, 27, 36, 10, 45, 46, 48, 45, 48, 54, 50, 36, 50, 42, 60, 58, 66, 58, 58, 62, 60, 41, 59, 71, 52, 58, 71, 63, 81, 83] 0

k\_1000 188

opm 88

the random choice case path in j60 ./rcpsp/j60.sm/j6027\_8.sm case j6027\_8.sm

v5 0 1.35105299949646 s [88, 124] 0.0 [0, 0, 0, 0, 10, 20, 2, 13, 9, 2, 20, 20, 24, 9, 24, 31, 9, 10, 17, 2, 27, 13, 31, 18, 35, 19, 23, 19, 27, 25, 34, 35, 33, 39, 39, 41, 2, 40, 37, 50, 59, 40, 27, 43, 27, 27, 46, 28, 40, 65, 75, 44, 50, 54, 43, 37, 54, 44, 79, 54, 62, 88] 0

k\_1000 189

opm 76

the random choice case path in j60 ./rcpsp/j60.sm/j6027\_9.sm case j6027\_9.sm

v5 6 13.873525857925415 s [76, 76] 0.0 [0, 0, 0, 0, 8, 16, 20, 16, 8, 8, 16, 1, 2, 2, 18, 6, 1, 18, 9, 22, 6, 16, 26, 17, 27, 24, 10, 19, 27, 24, 14, 30, 14, 11, 26, 26, 7, 28, 9, 32, 34, 42, 30, 42, 39, 44, 39, 20, 30, 41, 45, 32, 27, 40, 54, 52, 59, 52, 68, 42, 59, 76] 0

k\_1000 190

opm 92

the random choice case path in j60 ./rcpsp/j60.sm/j6028\_1.sm case j6028\_1.sm

v5 0 0.6939635276794434 s [92, 92] 0.0 [0, 0, 0, 0, 9, 14, 14, 24, 9, 9, 14, 29, 10, 23, 10, 9, 24, 24, 29, 29, 24, 32, 36, 9, 42, 42, 44, 33, 44, 46, 34, 46, 55, 10, 18, 55, 55, 36, 54, 56, 38, 38, 36, 36, 60, 60, 47, 56, 33, 54, 64, 63, 68, 68, 73, 67, 51, 74, 64, 71, 82, 92] 0

k\_1000 191

opm 74

the random choice case path in j60 ./rcpsp/j60.sm/j6028\_10.sm case j6028\_10.sm

v5 0 0.7756021022796631 s [74, 74] 0.0 [0, 0, 0, 0, 6, 12, 8, 10, 10, 6, 15, 12, 12, 8, 10, 15, 9, 24, 15, 12, 24, 8, 32, 15, 21, 15, 17, 13, 24, 19, 14, 37, 27, 6, 28, 22, 46, 36, 15, 27, 25, 16, 37, 32, 54, 16, 31, 36, 41, 25, 46, 61, 41, 46, 34, 38, 51, 56, 61, 64, 67, 74] 0

k\_1000 192

opm 64

the random choice case path in j60 ./rcpsp/j60.sm/j6028\_2.sm case j6028\_2.sm

v5 0 0.7794322967529297 s [64, 102] 0.0 [0, 0, 0, 0, 4, 7, 4, 16, 8, 17, 1, 1, 8, 4, 17, 10, 17, 1, 12, 14, 11, 20, 10, 14, 12, 21, 19, 26, 20, 20, 19, 22, 13, 22, 20, 26, 26, 23, 26, 10, 30, 27, 40, 30, 2, 27, 30, 33, 23, 40, 25, 48, 58, 36, 37, 48, 40, 53, 48, 56, 60, 64] 0

k\_1000 193

opm 72

the random choice case path in j60 ./rcpsp/j60.sm/j6028\_3.sm case j6028\_3.sm

v5 0 0.752011775970459 s [72, 102] 0.0 [0, 0, 0, 0, 3, 1, 1, 3, 9, 3, 15, 17, 21, 9, 9, 7, 10, 11, 17, 17, 21, 25, 3, 27, 17, 28, 32, 27, 24, 24, 32, 28, 29, 3, 10, 32, 15, 10, 29, 35, 25, 35, 40, 39, 40, 32, 41, 47, 44, 45, 52, 53, 35, 57, 40, 53, 1, 63, 55, 69, 41, 72] 0

k\_1000 194

opm 84

the random choice case path in j60 ./rcpsp/j60.sm/j6028\_4.sm case j6028\_4.sm

v5 0 0.7073161602020264 s [84, 84] 0.0 [0, 0, 0, 0, 9, 1, 1, 13, 4, 11, 11, 1, 4, 18, 4, 18, 16, 16, 9, 25, 16, 25, 32, 21, 11, 18, 32, 32, 11, 19, 29, 34, 24, 13, 35, 25, 41, 41, 34, 49, 34, 56, 56, 35, 34, 42, 35, 56, 45, 43, 44, 9, 47, 46, 41, 66, 60, 75, 76, 45, 66, 84] 0

k\_1000 195

opm 71

the random choice case path in j60 ./rcpsp/j60.sm/j6028\_5.sm case j6028\_5.sm

v5 0 0.5544347763061523 s [71, 71] 0.0 [0, 0, 0, 0, 6, 6, 4, 6, 12, 12, 12, 21, 12, 10, 4, 21, 4, 15, 7, 12, 10, 18, 21, 22, 13, 30, 30, 20, 30, 38, 15, 14, 20, 22, 22, 13, 35, 21, 22, 35, 35, 38, 38, 21, 27, 32, 37, 24, 30, 38, 39, 48, 42, 37, 43, 44, 56, 65, 67, 51, 65, 71] 0

k\_1000 196

opm 89

the random choice case path in j60 ./rcpsp/j60.sm/j6028\_6.sm case j6028\_6.sm

v5 0 0.6561901569366455 s [89, 89] 0.0 [0, 0, 0, 0, 2, 9, 10, 10, 11, 11, 18, 2, 2, 20, 20, 18, 24, 3, 24, 10, 25, 25, 32, 29, 9, 32, 32, 35, 25, 9, 15, 35, 32, 20, 17, 20, 26, 38, 35, 42, 35, 24, 29, 42, 52, 31, 42, 59, 59, 37, 66, 49, 66, 36, 73, 51, 49, 82, 66, 85, 58, 89] 0

k\_1000 197

opm 75

the random choice case path in j60 ./rcpsp/j60.sm/j6028\_7.sm case j6028\_7.sm

v5 0 0.5843424797058105 s [75, 77] 0.0 [0, 0, 0, 0, 5, 1, 2, 1, 2, 4, 4, 10, 13, 10, 19, 13, 9, 13, 13, 4, 6, 23, 16, 6, 16, 4, 29, 22, 14, 13, 18, 13, 19, 23, 17, 2, 19, 16, 23, 37, 29, 30, 37, 24, 17, 26, 37, 47, 29, 47, 51, 45, 56, 49, 32, 53, 53, 56, 28, 58, 65, 75] 0

k\_1000 198

opm 62

the random choice case path in j60 ./rcpsp/j60.sm/j6028\_8.sm case j6028\_8.sm

v5 0 0.5200216770172119 s [62, 62] 0.0 [0, 0, 0, 0, 4, 8, 8, 14, 2, 8, 12, 14, 18, 13, 2, 23, 19, 23, 29, 39, 12, 24, 24, 18, 13, 20, 33, 29, 20, 23, 5, 41, 33, 36, 29, 40, 47, 13, 24, 23, 28, 42, 47, 23, 31, 28, 36, 26, 50, 50, 50, 51, 53, 22, 37, 55, 46, 37, 54, 56, 61, 62] 0

k\_1000 199

opm 74

the random choice case path in j60 ./rcpsp/j60.sm/j6028\_9.sm case j6028\_9.sm

v5 0 0.6590311527252197 s [74, 74] 0.0 [0, 0, 0, 0, 5, 9, 2, 19, 9, 5, 19, 9, 26, 18, 2, 19, 12, 21, 25, 19, 26, 7, 26, 7, 25, 33, 18, 27, 27, 21, 33, 34, 19, 21, 42, 42, 35, 34, 31, 26, 52, 34, 42, 53, 35, 34, 53, 39, 43, 41, 46, 5, 53, 53, 43, 42, 62, 56, 43, 69, 60, 74] 0

k\_1000 200

opm 96

the random choice case path in j60 ./rcpsp/j60.sm/j6029\_1.sm case j6029\_1.sm

v5 29 599.4215276241302 s [107, 139] 11.458333333333332 [0, 0, 3, 0, 23, 3, 14, 14, 34, 13, 23, 3, 8, 8, 43, 56, 50, 22, 56, 65, 8, 27, 13, 49, 33, 49, 63, 57, 32, 44, 74, 60, 66, 44, 75, 37, 64, 57, 65, 76, 60, 80, 58, 68, 60, 90, 69, 34, 53, 77, 88, 85, 83, 94, 103, 96, 98, 101, 105, 104, 103, 107] 0

k\_1000 201

opm 112

the random choice case path in j60 ./rcpsp/j60.sm/j6029\_10.sm case j6029\_10.sm

v5 16 595.5571699142456 s [132, 233] 17.857142857142858 [0, 0, 0, 0, 5, 10, 10, 10, 13, 28, 32, 53, 18, 30, 18, 35, 13, 39, 21, 46, 31, 44, 40, 20, 63, 29, 52, 61, 87, 70, 74, 74, 79, 77, 61, 84, 84, 74, 46, 52, 99, 61, 93, 70, 92, 87, 94, 100, 81, 108, 114, 119, 64, 107, 124, 103, 100, 115, 126, 106, 127, 132] 0

k\_1000 202

opm 123

the random choice case path in j60 ./rcpsp/j60.sm/j6029\_2.sm case j6029\_2.sm

v5 21 585.7026944160461 s [140, 397] 13.821138211382115 [0, 0, 6, 0, 8, 11, 20, 26, 20, 35, 23, 39, 23, 6, 37, 26, 27, 39, 35, 27, 14, 44, 46, 54, 14, 55, 81, 95, 102, 36, 77, 87, 54, 64, 63, 106, 56, 53, 87, 79, 108, 110, 68, 114, 70, 97, 58, 102, 79, 110, 106, 111, 121, 89, 119, 114, 97, 122, 129, 129, 133, 140] 0

k\_1000 203

opm 115

the random choice case path in j60 ./rcpsp/j60.sm/j6029\_3.sm case j6029\_3.sm

v5 15 600.8486614227295 s [134, 144] 16.52173913043478 [0, 0, 0, 0, 10, 16, 8, 25, 16, 34, 45, 28, 52, 32, 45, 52, 44, 70, 9, 47, 62, 61, 21, 10, 28, 48, 83, 89, 91, 10, 36, 68, 15, 62, 62, 102, 68, 34, 68, 52, 78, 61, 76, 106, 22, 89, 82, 87, 110, 69, 78, 99, 95, 102, 112, 112, 119, 123, 115, 132, 125, 134] 0

k\_1000 204

opm 126

the random choice case path in j60 ./rcpsp/j60.sm/j6029\_4.sm case j6029\_4.sm

v5 14 590.7254388332367 s [146, 178] 15.873015873015872 [0, 21, 0, 0, 34, 8, 8, 17, 8, 37, 17, 18, 69, 81, 39, 37, 31, 72, 41, 53, 88, 55, 64, 69, 27, 45, 55, 83, 85, 93, 100, 49, 39, 69, 65, 104, 34, 49, 108, 61, 83, 77, 85, 64, 94, 90, 98, 88, 103, 93, 116, 117, 122, 116, 107, 123, 126, 122, 130, 136, 138, 146] 0

k\_1000 205

opm 102

the random choice case path in j60 ./rcpsp/j60.sm/j6029\_5.sm case j6029\_5.sm

v5 15 596.3739280700684 s [125, 331] 22.54901960784314 [0, 0, 36, 0, 57, 6, 34, 4, 74, 24, 14, 57, 9, 24, 44, 44, 34, 42, 35, 23, 28, 38, 6, 54, 31, 76, 27, 17, 62, 79, 87, 64, 67, 103, 33, 54, 51, 75, 65, 57, 67, 84, 86, 94, 95, 76, 88, 95, 72, 98, 69, 104, 112, 105, 112, 117, 117, 93, 124, 119, 103, 125] 0

k\_1000 206

opm 145

the random choice case path in j60 ./rcpsp/j60.sm/j6029\_6.sm case j6029\_6.sm

v5 14 601.5017423629761 s [169, 291] 16.551724137931036 [0, 0, 0, 1, 9, 19, 10, 29, 29, 19, 10, 38, 47, 44, 46, 68, 54, 50, 19, 131, 36, 36, 73, 93, 54, 45, 73, 61, 82, 101, 88, 97, 61, 97, 102, 79, 110, 105, 81, 93, 88, 121, 82, 137, 63, 95, 118, 112, 25, 131, 131, 141, 146, 155, 126, 146, 151, 155, 151, 163, 161, 169] 0

k\_1000 207

opm 114

the random choice case path in j60 ./rcpsp/j60.sm/j6029\_7.sm case j6029\_7.sm

v5 30 592.3563275337219 s [134, 405] 17.543859649122805 [0, 4, 0, 0, 3, 11, 34, 21, 41, 11, 3, 9, 33, 38, 14, 38, 19, 39, 31, 49, 41, 32, 41, 47, 58, 66, 26, 48, 34, 58, 85, 43, 70, 45, 65, 61, 70, 48, 89, 78, 93, 76, 54, 71, 108, 67, 103, 77, 86, 107, 78, 117, 93, 97, 109, 99, 112, 98, 126, 126, 117, 134] 0

k\_1000 208

opm 96

the random choice case path in j60 ./rcpsp/j60.sm/j6029\_8.sm case j6029\_8.sm

v5 30 594.3340451717377 s [108, 183] 12.5 [0, 0, 0, 0, 8, 24, 23, 9, 33, 9, 29, 13, 11, 49, 11, 23, 39, 17, 41, 50, 57, 68, 60, 60, 58, 61, 68, 34, 33, 48, 62, 65, 44, 45, 17, 55, 29, 57, 74, 70, 20, 67, 48, 74, 61, 85, 75, 27, 29, 41, 39, 90, 63, 80, 76, 85, 86, 94, 100, 100, 97, 108] 0

k\_1000 209

opm 105

the random choice case path in j60 ./rcpsp/j60.sm/j6029\_9.sm case j6029\_9.sm

v5 23 599.0190234184265 s [122, 202] 16.19047619047619 [0, 0, 8, 0, 8, 34, 19, 11, 29, 17, 8, 13, 2, 19, 56, 13, 11, 50, 36, 28, 7, 36, 27, 26, 64, 47, 99, 17, 64, 48, 79, 26, 31, 40, 32, 40, 63, 51, 51, 89, 70, 17, 48, 71, 60, 78, 74, 74, 85, 80, 69, 99, 93, 79, 89, 107, 106, 106, 113, 112, 113, 122] 0

k\_1000 210

opm 65

the random choice case path in j60 ./rcpsp/j60.sm/j602\_1.sm case j602\_1.sm

v5 1 5.0084497928619385 s [65, 74] 0.0 [0, 0, 0, 0, 4, 3, 1, 13, 13, 1, 9, 18, 18, 17, 4, 20, 18, 17, 26, 6, 17, 6, 17, 6, 22, 33, 21, 26, 9, 18, 27, 20, 23, 26, 19, 34, 34, 28, 33, 30, 13, 31, 24, 27, 20, 41, 29, 37, 47, 43, 20, 37, 44, 46, 53, 44, 29, 24, 61, 31, 51, 65] 0

k\_1000 211

opm 69

the random choice case path in j60 ./rcpsp/j60.sm/j602\_10.sm case j602\_10.sm

v5 0 1.6563451290130615 s [66, 80] -4.3478260869565215 [0, 0, 0, 0, 8, 13, 10, 8, 10, 28, 13, 10, 17, 20, 18, 20, 17, 23, 29, 20, 20, 34, 23, 39, 33, 18, 18, 30, 33, 44, 28, 43, 28, 24, 22, 17, 33, 32, 28, 32, 42, 23, 34, 41, 39, 27, 35, 26, 44, 36, 37, 49, 45, 55, 40, 40, 54, 53, 62, 60, 57, 66] 0

k\_1000 212

opm 82

the random choice case path in j60 ./rcpsp/j60.sm/j602\_2.sm case j602\_2.sm

v5 0 1.2307977676391602 s [82, 105] 0.0 [0, 0, 0, 0, 1, 9, 2, 17, 5, 2, 15, 19, 32, 22, 19, 17, 26, 27, 22, 32, 41, 6, 22, 32, 35, 43, 33, 43, 22, 35, 37, 38, 50, 32, 25, 32, 37, 37, 47, 9, 33, 47, 41, 40, 57, 67, 40, 58, 25, 41, 69, 35, 39, 43, 42, 48, 50, 56, 69, 75, 64, 82] 0

k\_1000 213

opm 78

the random choice case path in j60 ./rcpsp/j60.sm/j602\_3.sm case j602\_3.sm

v5 1 4.575186014175415 s [78, 78] 0.0 [0, 0, 0, 0, 9, 7, 9, 12, 12, 6, 6, 6, 20, 18, 22, 22, 13, 10, 9, 20, 14, 27, 13, 36, 23, 12, 25, 36, 30, 14, 15, 30, 27, 37, 35, 25, 23, 23, 23, 29, 47, 19, 47, 34, 35, 24, 55, 52, 55, 35, 42, 7, 42, 23, 63, 62, 55, 7, 71, 69, 52, 78] 0

k\_1000 214

opm 78

the random choice case path in j60 ./rcpsp/j60.sm/j602\_4.sm case j602\_4.sm

v5 1 4.8063483238220215 s [78, 110] 0.0 [0, 0, 0, 0, 2, 6, 6, 6, 12, 14, 18, 6, 14, 2, 16, 3, 16, 16, 16, 3, 20, 30, 3, 3, 10, 25, 37, 10, 38, 4, 9, 6, 14, 7, 27, 37, 41, 20, 7, 25, 27, 6, 17, 16, 37, 7, 37, 30, 29, 46, 49, 8, 18, 58, 35, 46, 49, 61, 41, 71, 59, 78] 0

k\_1000 215

opm 54

the random choice case path in j60 ./rcpsp/j60.sm/j602\_5.sm case j602\_5.sm

v5 6 14.864678382873535 s [54, 61] 0.0 [0, 0, 0, 0, 4, 8, 14, 2, 4, 8, 14, 9, 7, 8, 8, 9, 11, 13, 14, 12, 12, 19, 11, 18, 9, 18, 26, 14, 13, 18, 19, 10, 20, 26, 13, 28, 19, 11, 29, 30, 19, 29, 28, 30, 33, 39, 28, 35, 35, 35, 12, 39, 37, 36, 36, 19, 37, 43, 44, 43, 48, 54] 0

k\_1000 216

opm 64

the random choice case path in j60 ./rcpsp/j60.sm/j602\_6.sm case j602\_6.sm

v5 0 1.0031840801239014 s [61, 68] -4.6875 [0, 0, 0, 0, 1, 4, 5, 1, 1, 16, 4, 4, 8, 8, 8, 18, 9, 12, 12, 5, 19, 28, 8, 15, 16, 12, 22, 8, 15, 12, 23, 19, 24, 28, 18, 32, 15, 28, 24, 18, 22, 18, 29, 22, 26, 15, 25, 32, 17, 18, 35, 19, 34, 37, 34, 32, 41, 22, 51, 41, 42, 61] 0

k\_1000 217

opm 53

the random choice case path in j60 ./rcpsp/j60.sm/j602\_7.sm case j602\_7.sm

v5 1 3.082963228225708 s [53, 56] 0.0 [0, 0, 0, 0, 4, 7, 7, 6, 8, 12, 8, 6, 4, 14, 16, 12, 12, 13, 19, 8, 11, 19, 18, 19, 4, 16, 10, 20, 9, 14, 6, 27, 21, 21, 15, 9, 21, 27, 29, 36, 21, 20, 11, 24, 16, 28, 26, 42, 28, 21, 25, 33, 36, 39, 31, 36, 47, 24, 48, 50, 40, 53] 0

k\_1000 218

opm 66

the random choice case path in j60 ./rcpsp/j60.sm/j602\_8.sm case j602\_8.sm

v5 1 3.961665630340576 s [66, 87] 0.0 [0, 0, 0, 0, 9, 8, 13, 8, 14, 13, 13, 15, 22, 14, 14, 17, 10, 18, 16, 22, 20, 16, 17, 18, 23, 23, 26, 22, 26, 33, 29, 21, 36, 22, 16, 18, 33, 22, 24, 18, 39, 36, 28, 23, 39, 26, 29, 23, 23, 36, 33, 48, 45, 56, 33, 31, 38, 9, 47, 61, 42, 66] 0

k\_1000 219

opm 65

the random choice case path in j60 ./rcpsp/j60.sm/j602\_9.sm case j602\_9.sm

v5 31 84.74527907371521 s [65, 77] 0.0 [0, 0, 0, 0, 8, 8, 13, 5, 11, 15, 14, 17, 11, 8, 11, 18, 16, 15, 20, 8, 15, 20, 1, 18, 20, 11, 18, 13, 27, 23, 23, 11, 11, 24, 33, 40, 11, 50, 5, 27, 33, 33, 25, 37, 52, 20, 26, 32, 37, 43, 41, 20, 40, 51, 58, 53, 24, 39, 32, 45, 64, 65] 0

k\_1000 220

opm 70

the random choice case path in j60 ./rcpsp/j60.sm/j6030\_1.sm case j6030\_1.sm

v5 43 225.86090993881226 s [70, 115] 0.0 [0, 0, 0, 0, 2, 5, 10, 19, 5, 14, 6, 14, 15, 5, 20, 7, 9, 19, 17, 23, 24, 18, 25, 33, 25, 19, 13, 31, 27, 44, 23, 33, 36, 24, 34, 31, 45, 34, 54, 28, 44, 34, 36, 39, 44, 46, 43, 48, 36, 38, 44, 47, 52, 45, 47, 56, 53, 55, 61, 59, 61, 70] 0

k\_1000 221

opm 86

the random choice case path in j60 ./rcpsp/j60.sm/j6030\_10.sm case j6030\_10.sm

v5 62 602.3637702465057 s [94, 127] 9.30232558139535 [0, 0, 0, 0, 8, 8, 16, 34, 14, 8, 18, 18, 42, 5, 28, 8, 31, 18, 11, 25, 44, 29, 50, 62, 16, 54, 18, 38, 65, 66, 64, 38, 46, 24, 47, 46, 28, 46, 60, 40, 25, 74, 58, 60, 55, 61, 54, 64, 64, 55, 66, 68, 73, 77, 73, 78, 64, 67, 87, 77, 85, 94] 0

k\_1000 222

opm 70

the random choice case path in j60 ./rcpsp/j60.sm/j6030\_2.sm case j6030\_2.sm

v5 108 597.6636278629303 s [72, 82] 2.857142857142857 [0, 0, 0, 0, 2, 8, 10, 28, 8, 9, 11, 17, 10, 10, 9, 13, 19, 28, 17, 33, 17, 25, 30, 10, 20, 27, 19, 27, 43, 31, 30, 30, 34, 24, 34, 41, 37, 30, 47, 37, 2, 44, 42, 48, 46, 28, 31, 40, 51, 57, 57, 51, 47, 58, 52, 58, 62, 55, 68, 65, 62, 72] 0

k\_1000 223

opm 82

the random choice case path in j60 ./rcpsp/j60.sm/j6030\_3.sm case j6030\_3.sm

v5 72 601.7871017456055 s [90, 150] 9.75609756097561 [0, 0, 0, 0, 3, 5, 5, 10, 12, 3, 12, 12, 20, 7, 14, 20, 24, 27, 17, 28, 21, 10, 26, 27, 37, 38, 42, 24, 34, 18, 35, 42, 42, 28, 54, 32, 34, 51, 58, 44, 41, 47, 60, 48, 65, 42, 54, 49, 52, 52, 61, 64, 54, 63, 60, 62, 74, 66, 81, 67, 73, 90] 0

k\_1000 224

opm 76

the random choice case path in j60 ./rcpsp/j60.sm/j6030\_4.sm case j6030\_4.sm

v5 0 1.2113206386566162 s [76, 76] 0.0 [0, 0, 0, 0, 2, 5, 8, 5, 14, 5, 17, 15, 14, 9, 2, 9, 21, 14, 18, 21, 21, 5, 30, 15, 30, 6, 27, 25, 15, 18, 28, 26, 33, 6, 40, 8, 25, 50, 32, 50, 30, 39, 32, 43, 55, 3, 18, 37, 45, 52, 53, 57, 59, 65, 38, 60, 59, 60, 72, 59, 63, 76] 0

k\_1000 225

opm 76

the random choice case path in j60 ./rcpsp/j60.sm/j6030\_5.sm case j6030\_5.sm

v5 70 598.2744741439819 s [80, 220] 5.263157894736842 [0, 0, 0, 0, 6, 9, 14, 24, 9, 14, 17, 39, 14, 18, 18, 6, 33, 26, 30, 32, 18, 31, 38, 33, 6, 37, 26, 39, 40, 25, 47, 28, 36, 48, 48, 40, 15, 48, 44, 46, 48, 24, 57, 55, 54, 55, 59, 60, 59, 63, 48, 26, 63, 71, 66, 58, 64, 75, 74, 66, 76, 80] 0

k\_1000 226

opm 68

the random choice case path in j60 ./rcpsp/j60.sm/j6030\_6.sm case j6030\_6.sm

v5 142 599.6529259681702 s [70, 126] 2.941176470588235 [0, 0, 0, 0, 4, 10, 4, 4, 14, 18, 4, 12, 12, 10, 22, 13, 12, 18, 25, 13, 23, 14, 18, 17, 16, 22, 10, 4, 23, 17, 22, 27, 35, 25, 30, 50, 40, 14, 23, 30, 26, 32, 30, 30, 39, 33, 31, 27, 39, 45, 46, 55, 33, 42, 46, 47, 53, 56, 60, 47, 65, 70] 0

k\_1000 227

opm 86

the random choice case path in j60 ./rcpsp/j60.sm/j6030\_7.sm case j6030\_7.sm

v5 58 603.1389985084534 s [89, 149] 3.488372093023256 [0, 0, 0, 0, 9, 15, 9, 6, 8, 12, 22, 27, 9, 15, 6, 12, 37, 20, 16, 25, 28, 38, 25, 32, 3, 26, 44, 41, 7, 17, 42, 28, 6, 43, 26, 33, 47, 51, 21, 34, 52, 37, 53, 51, 56, 59, 59, 65, 67, 61, 69, 72, 59, 74, 69, 78, 79, 77, 80, 80, 82, 89] 0

k\_1000 228

opm 63

the random choice case path in j60 ./rcpsp/j60.sm/j6030\_8.sm case j6030\_8.sm

v5 129 599.516606092453 s [65, 95] 3.1746031746031744 [0, 0, 0, 0, 6, 14, 15, 6, 15, 6, 6, 8, 5, 17, 16, 14, 23, 38, 16, 16, 6, 8, 33, 21, 21, 32, 20, 33, 41, 17, 30, 30, 39, 23, 38, 22, 20, 23, 7, 25, 24, 40, 29, 32, 46, 31, 45, 36, 40, 40, 40, 42, 45, 48, 47, 56, 51, 47, 59, 59, 42, 65] 0

k\_1000 229

opm 98

the random choice case path in j60 ./rcpsp/j60.sm/j6030\_9.sm case j6030\_9.sm

v5 22 276.60353922843933 s [98, 127] 0.0 [0, 0, 0, 0, 10, 10, 13, 13, 17, 27, 17, 36, 17, 57, 7, 15, 23, 41, 43, 29, 7, 20, 72, 36, 81, 20, 30, 44, 41, 13, 20, 52, 44, 44, 45, 29, 67, 52, 51, 45, 44, 43, 60, 38, 66, 54, 75, 72, 50, 60, 68, 66, 61, 85, 72, 79, 73, 82, 93, 85, 91, 98] 0

k\_1000 230

opm 65

the random choice case path in j60 ./rcpsp/j60.sm/j6031\_1.sm case j6031\_1.sm

v5 1 3.532726287841797 s [65, 67] 0.0 [0, 0, 0, 0, 6, 11, 3, 3, 10, 14, 10, 3, 23, 11, 11, 6, 8, 21, 10, 12, 21, 28, 13, 16, 20, 18, 18, 20, 10, 18, 28, 23, 18, 33, 30, 28, 34, 29, 22, 34, 29, 43, 36, 17, 19, 40, 16, 22, 21, 20, 35, 24, 39, 36, 43, 35, 49, 40, 59, 49, 46, 65] 0

k\_1000 231

opm 56

the random choice case path in j60 ./rcpsp/j60.sm/j6031\_10.sm case j6031\_10.sm

v5 54 155.506085395813 s [56, 56] 0.0 [0, 0, 0, 0, 7, 7, 7, 12, 9, 17, 11, 11, 10, 15, 9, 15, 15, 10, 20, 28, 26, 29, 21, 9, 18, 29, 27, 18, 11, 14, 29, 27, 29, 20, 21, 31, 32, 27, 22, 25, 32, 22, 38, 26, 36, 41, 15, 38, 32, 39, 26, 38, 28, 41, 45, 48, 39, 39, 47, 46, 49, 56] 0

k\_1000 232

opm 74

the random choice case path in j60 ./rcpsp/j60.sm/j6031\_2.sm case j6031\_2.sm

v5 19 48.911813259124756 s [74, 134] 0.0 [0, 0, 0, 0, 9, 3, 13, 17, 17, 19, 21, 17, 24, 32, 13, 19, 24, 9, 9, 41, 28, 36, 3, 26, 24, 27, 34, 47, 47, 37, 14, 24, 32, 28, 37, 36, 42, 57, 38, 47, 53, 50, 41, 57, 61, 47, 38, 55, 47, 57, 47, 53, 62, 61, 59, 59, 59, 63, 69, 66, 70, 74] 0

k\_1000 233

opm 66

the random choice case path in j60 ./rcpsp/j60.sm/j6031\_3.sm case j6031\_3.sm

v5 4 14.475867748260498 s [66, 67] 0.0 [0, 0, 0, 0, 7, 15, 7, 15, 7, 7, 15, 7, 17, 23, 25, 7, 25, 14, 16, 19, 24, 27, 16, 16, 22, 22, 28, 30, 20, 21, 14, 34, 28, 30, 28, 36, 34, 30, 37, 38, 40, 40, 28, 26, 35, 45, 35, 43, 38, 44, 40, 49, 45, 49, 51, 49, 49, 46, 58, 59, 56, 66] 0

k\_1000 234

opm 68

the random choice case path in j60 ./rcpsp/j60.sm/j6031\_4.sm case j6031\_4.sm

v5 1 3.166348695755005 s [68, 82] 0.0 [0, 0, 0, 0, 4, 7, 4, 14, 4, 9, 6, 11, 12, 21, 10, 22, 27, 12, 18, 10, 16, 19, 25, 21, 21, 34, 25, 34, 42, 19, 25, 16, 9, 21, 29, 34, 31, 23, 30, 27, 10, 36, 42, 51, 42, 38, 35, 44, 40, 38, 35, 43, 47, 51, 42, 40, 49, 56, 54, 58, 61, 68] 0

k\_1000 235

opm 72

the random choice case path in j60 ./rcpsp/j60.sm/j6031\_5.sm case j6031\_5.sm

v5 0 1.411522626876831 s [72, 74] 0.0 [0, 0, 0, 0, 2, 10, 15, 8, 18, 10, 22, 13, 10, 8, 13, 6, 2, 19, 15, 31, 19, 21, 8, 2, 21, 31, 32, 29, 23, 19, 34, 22, 34, 29, 12, 24, 13, 15, 17, 40, 34, 35, 21, 24, 27, 49, 34, 36, 36, 26, 36, 30, 59, 41, 40, 48, 49, 45, 68, 49, 49, 72] 0

k\_1000 236

opm 72

the random choice case path in j60 ./rcpsp/j60.sm/j6031\_6.sm case j6031\_6.sm

v5 3 9.533901929855347 s [72, 93] 0.0 [0, 0, 0, 0, 6, 6, 3, 3, 13, 12, 33, 20, 11, 14, 6, 20, 13, 19, 24, 24, 24, 23, 30, 12, 14, 32, 22, 32, 32, 28, 33, 42, 12, 42, 26, 22, 40, 25, 45, 36, 21, 29, 54, 45, 29, 46, 53, 50, 28, 48, 48, 63, 53, 63, 37, 45, 43, 53, 63, 68, 52, 72] 0

k\_1000 237

opm 76

the random choice case path in j60 ./rcpsp/j60.sm/j6031\_7.sm case j6031\_7.sm

v5 9 32.31598687171936 s [76, 137] 0.0 [0, 0, 0, 0, 7, 8, 6, 9, 16, 13, 16, 17, 16, 7, 19, 20, 7, 8, 25, 17, 8, 25, 33, 20, 28, 29, 20, 27, 17, 25, 27, 35, 20, 31, 42, 41, 41, 42, 22, 36, 44, 46, 46, 45, 54, 40, 51, 34, 44, 52, 40, 56, 56, 54, 63, 50, 69, 60, 75, 61, 55, 76] 0

k\_1000 238

opm 75

the random choice case path in j60 ./rcpsp/j60.sm/j6031\_8.sm case j6031\_8.sm

v5 41 210.9113528728485 s [75, 116] 0.0 [0, 0, 0, 0, 5, 10, 14, 20, 20, 20, 22, 14, 14, 31, 4, 26, 21, 5, 28, 21, 30, 4, 12, 28, 30, 21, 36, 26, 38, 36, 28, 28, 40, 47, 38, 43, 38, 51, 55, 7, 47, 41, 32, 30, 58, 66, 44, 43, 52, 52, 52, 51, 55, 58, 66, 67, 61, 65, 71, 68, 61, 75] 0

k\_1000 239

opm 86

the random choice case path in j60 ./rcpsp/j60.sm/j6031\_9.sm case j6031\_9.sm

v5 0 2.4841761589050293 s [86, 96] 0.0 [0, 0, 0, 0, 10, 7, 15, 15, 10, 23, 15, 7, 33, 10, 16, 10, 32, 16, 23, 17, 22, 32, 8, 15, 15, 26, 27, 33, 32, 40, 19, 49, 18, 19, 18, 18, 36, 44, 23, 54, 36, 36, 45, 44, 31, 39, 41, 52, 54, 58, 58, 55, 27, 63, 72, 62, 55, 72, 73, 61, 80, 86] 0

k\_1000 240

opm 69

the random choice case path in j60 ./rcpsp/j60.sm/j6032\_1.sm case j6032\_1.sm

v5 0 0.6822695732116699 s [69, 73] 0.0 [0, 0, 0, 0, 4, 4, 4, 10, 4, 5, 10, 11, 6, 4, 8, 8, 18, 4, 5, 10, 8, 9, 5, 14, 14, 12, 14, 11, 14, 14, 18, 20, 18, 30, 21, 28, 19, 21, 21, 29, 24, 17, 24, 6, 16, 32, 37, 37, 21, 23, 37, 37, 42, 25, 32, 47, 55, 23, 47, 61, 32, 69] 0

k\_1000 241

opm 77

the random choice case path in j60 ./rcpsp/j60.sm/j6032\_10.sm case j6032\_10.sm

v5 0 0.7832679748535156 s [77, 77] 0.0 [0, 0, 0, 0, 5, 5, 9, 17, 8, 25, 5, 25, 17, 10, 19, 17, 20, 33, 19, 10, 36, 20, 9, 26, 8, 36, 24, 25, 10, 33, 24, 26, 24, 20, 25, 32, 45, 19, 12, 10, 34, 32, 42, 44, 36, 42, 47, 48, 51, 37, 39, 47, 51, 56, 51, 59, 32, 46, 55, 55, 67, 77] 0

k\_1000 242

opm 114

the random choice case path in j60 ./rcpsp/j60.sm/j6032\_2.sm case j6032\_2.sm

v5 0 1.219280481338501 s [114, 114] 0.0 [0, 0, 0, 0, 9, 9, 10, 15, 10, 9, 19, 28, 19, 30, 28, 30, 35, 21, 30, 15, 28, 31, 37, 20, 41, 11, 35, 45, 45, 49, 35, 54, 45, 45, 46, 59, 45, 53, 59, 59, 19, 65, 68, 74, 20, 31, 49, 68, 37, 82, 78, 69, 38, 87, 47, 97, 58, 75, 54, 105, 84, 114] 0

k\_1000 243

opm 85

the random choice case path in j60 ./rcpsp/j60.sm/j6032\_3.sm case j6032\_3.sm

v5 0 0.9463622570037842 s [85, 107] 0.0 [0, 0, 0, 0, 7, 7, 7, 16, 9, 11, 5, 21, 18, 21, 9, 27, 18, 27, 19, 36, 11, 14, 27, 28, 11, 20, 19, 46, 46, 24, 36, 29, 24, 28, 54, 34, 27, 55, 28, 58, 36, 55, 24, 37, 67, 46, 55, 46, 30, 50, 58, 56, 37, 66, 64, 67, 67, 66, 76, 77, 74, 85] 0

k\_1000 244

opm 56

the random choice case path in j60 ./rcpsp/j60.sm/j6032\_4.sm case j6032\_4.sm

v5 0 0.5484073162078857 s [56, 56] 0.0 [0, 0, 0, 0, 2, 5, 5, 2, 6, 5, 8, 8, 8, 12, 6, 16, 14, 7, 8, 11, 10, 19, 7, 11, 12, 6, 22, 16, 20, 25, 15, 28, 16, 20, 8, 10, 21, 36, 18, 36, 38, 19, 19, 30, 30, 38, 38, 31, 41, 20, 39, 35, 23, 35, 44, 44, 40, 42, 53, 50, 34, 56] 0

k\_1000 245

opm 77

the random choice case path in j60 ./rcpsp/j60.sm/j6032\_5.sm case j6032\_5.sm

v5 0 0.6319534778594971 s [77, 77] 0.0 [0, 0, 0, 0, 7, 7, 9, 4, 4, 9, 14, 14, 18, 26, 18, 25, 9, 28, 4, 26, 31, 29, 34, 18, 9, 25, 12, 24, 19, 33, 14, 24, 16, 40, 33, 43, 40, 28, 53, 31, 36, 18, 24, 41, 38, 40, 26, 45, 41, 46, 47, 54, 51, 55, 64, 43, 48, 70, 32, 74, 53, 77] 0

k\_1000 246

opm 93

the random choice case path in j60 ./rcpsp/j60.sm/j6032\_6.sm case j6032\_6.sm

v5 0 0.7765529155731201 s [93, 138] 0.0 [0, 0, 0, 0, 6, 15, 15, 23, 29, 34, 34, 29, 37, 15, 2, 6, 41, 6, 3, 7, 19, 8, 23, 4, 7, 29, 51, 24, 56, 37, 41, 51, 63, 41, 7, 42, 6, 53, 55, 3, 24, 8, 53, 28, 53, 56, 50, 57, 34, 59, 60, 56, 66, 73, 73, 74, 70, 83, 91, 64, 83, 93] 0

k\_1000 247

opm 76

the random choice case path in j60 ./rcpsp/j60.sm/j6032\_7.sm case j6032\_7.sm

v5 0 0.5190832614898682 s [76, 76] 0.0 [0, 0, 0, 0, 8, 15, 8, 18, 14, 24, 5, 24, 14, 8, 21, 15, 22, 31, 30, 24, 34, 40, 14, 28, 21, 22, 8, 39, 5, 44, 17, 18, 40, 22, 44, 23, 34, 39, 52, 25, 27, 27, 34, 40, 48, 30, 31, 47, 22, 31, 51, 27, 54, 40, 64, 69, 50, 44, 75, 47, 62, 76] 0

k\_1000 248

opm 76

the random choice case path in j60 ./rcpsp/j60.sm/j6032\_8.sm case j6032\_8.sm

v5 0 0.570955753326416 s [76, 87] 0.0 [0, 0, 0, 0, 9, 3, 10, 3, 9, 9, 11, 16, 7, 7, 26, 36, 7, 46, 15, 12, 26, 13, 16, 16, 12, 16, 26, 10, 15, 21, 13, 23, 21, 21, 3, 23, 16, 28, 30, 16, 36, 29, 29, 23, 46, 53, 63, 46, 53, 22, 66, 27, 25, 63, 52, 68, 46, 53, 73, 56, 23, 76] 0

k\_1000 249

opm 74

the random choice case path in j60 ./rcpsp/j60.sm/j6032\_9.sm case j6032\_9.sm

v5 0 0.6590368747711182 s [74, 74] 0.0 [0, 0, 0, 0, 6, 6, 4, 6, 15, 9, 7, 7, 16, 9, 16, 23, 23, 9, 12, 4, 6, 15, 11, 32, 24, 19, 14, 21, 30, 16, 30, 34, 39, 14, 21, 49, 40, 22, 40, 18, 25, 30, 32, 43, 23, 40, 50, 32, 53, 49, 42, 32, 42, 50, 54, 56, 66, 56, 50, 66, 67, 74] 0

k\_1000 250

opm 105

the random choice case path in j60 ./rcpsp/j60.sm/j6033\_1.sm case j6033\_1.sm

v5 9 48.42908430099487 s [102, 106] -2.857142857142857 [0, 0, 0, 0, 3, 5, 23, 10, 10, 16, 15, 19, 19, 15, 32, 28, 28, 36, 19, 28, 46, 42, 37, 28, 15, 46, 55, 22, 23, 23, 46, 32, 5, 37, 36, 41, 50, 46, 39, 50, 50, 60, 50, 63, 60, 70, 80, 70, 68, 59, 54, 80, 70, 70, 80, 50, 88, 70, 93, 80, 93, 102] 0

k\_1000 251

opm 84

the random choice case path in j60 ./rcpsp/j60.sm/j6033\_10.sm case j6033\_10.sm

v5 30 121.16768407821655 s [83, 83] -1.1904761904761905 [0, 0, 1, 0, 2, 2, 6, 1, 6, 6, 6, 13, 15, 15, 17, 22, 23, 17, 2, 23, 6, 23, 26, 18, 15, 23, 15, 22, 29, 26, 21, 15, 29, 34, 37, 32, 31, 41, 36, 41, 21, 39, 42, 48, 37, 48, 32, 46, 46, 21, 50, 56, 46, 58, 67, 58, 58, 73, 57, 63, 82, 83] 0

k\_1000 252

opm 100

the random choice case path in j60 ./rcpsp/j60.sm/j6033\_2.sm case j6033\_2.sm

v5 0 1.6545381546020508 s [100, 127] 0.0 [0, 0, 0, 0, 6, 13, 6, 15, 15, 6, 10, 20, 9, 13, 19, 19, 37, 42, 19, 25, 9, 22, 32, 20, 19, 43, 36, 47, 38, 19, 24, 36, 48, 57, 24, 66, 29, 71, 43, 46, 29, 32, 66, 38, 32, 42, 48, 36, 52, 52, 75, 78, 37, 75, 82, 75, 76, 57, 92, 79, 82, 100] 0

k\_1000 253

opm 79

the random choice case path in j60 ./rcpsp/j60.sm/j6033\_3.sm case j6033\_3.sm

v5 6 17.437756538391113 s [77, 77] -2.5316455696202533 [0, 0, 0, 0, 7, 17, 17, 22, 23, 22, 22, 27, 28, 15, 29, 32, 7, 22, 28, 27, 27, 23, 36, 45, 7, 33, 28, 40, 28, 37, 16, 48, 33, 28, 36, 33, 47, 42, 38, 54, 45, 46, 59, 56, 40, 40, 67, 59, 40, 55, 46, 65, 55, 59, 48, 58, 65, 69, 66, 73, 67, 77] 0

k\_1000 254

opm 81

the random choice case path in j60 ./rcpsp/j60.sm/j6033\_4.sm case j6033\_4.sm

v5 2 10.970242738723755 s [81, 142] 0.0 [0, 0, 0, 0, 3, 15, 6, 6, 6, 15, 13, 6, 14, 13, 18, 15, 18, 23, 15, 19, 23, 26, 21, 23, 30, 26, 21, 34, 33, 17, 16, 28, 33, 33, 36, 30, 42, 48, 47, 40, 47, 44, 52, 44, 56, 47, 19, 43, 53, 56, 40, 63, 42, 70, 34, 73, 47, 57, 59, 78, 61, 81] 0

k\_1000 255

opm 108

the random choice case path in j60 ./rcpsp/j60.sm/j6033\_5.sm case j6033\_5.sm

v5 30 115.54082727432251 s [108, 251] 0.0 [0, 0, 0, 0, 10, 11, 10, 11, 11, 22, 18, 12, 27, 14, 27, 35, 40, 42, 18, 49, 44, 27, 43, 36, 48, 43, 27, 35, 37, 12, 50, 50, 54, 36, 37, 42, 34, 54, 44, 54, 55, 67, 58, 34, 63, 62, 62, 54, 72, 72, 74, 62, 80, 90, 80, 80, 85, 67, 103, 99, 93, 108] 0

k\_1000 256

opm 75

the random choice case path in j60 ./rcpsp/j60.sm/j6033\_6.sm case j6033\_6.sm

v5 1 4.710177421569824 s [74, 136] -1.3333333333333335 [0, 0, 11, 0, 2, 2, 21, 9, 2, 11, 13, 19, 3, 13, 11, 24, 34, 35, 13, 24, 19, 21, 36, 28, 26, 41, 48, 13, 21, 26, 22, 26, 33, 3, 34, 24, 34, 44, 44, 54, 39, 43, 49, 49, 46, 36, 28, 37, 58, 58, 50, 58, 44, 35, 57, 39, 58, 54, 66, 62, 66, 74] 0

k\_1000 257

opm 78

the random choice case path in j60 ./rcpsp/j60.sm/j6033\_7.sm case j6033\_7.sm

v5 2 7.416632175445557 s [76, 123] -2.564102564102564 [0, 0, 0, 0, 2, 11, 3, 2, 13, 20, 20, 13, 4, 22, 14, 10, 14, 13, 22, 20, 22, 29, 30, 30, 14, 24, 23, 4, 33, 26, 41, 30, 30, 35, 50, 31, 35, 22, 39, 31, 50, 34, 34, 20, 42, 35, 55, 41, 42, 42, 50, 62, 34, 51, 48, 56, 58, 56, 66, 62, 58, 76] 0

k\_1000 258

opm 79

the random choice case path in j60 ./rcpsp/j60.sm/j6033\_8.sm case j6033\_8.sm

v5 161 600.3281455039978 s [81, 81] 2.5316455696202533 [0, 0, 0, 0, 10, 9, 26, 9, 9, 9, 19, 8, 25, 13, 19, 26, 25, 35, 19, 32, 13, 20, 19, 25, 38, 32, 30, 41, 44, 48, 49, 58, 48, 45, 42, 42, 35, 46, 46, 58, 40, 16, 44, 47, 36, 48, 57, 66, 48, 68, 50, 50, 57, 68, 48, 51, 65, 70, 72, 66, 78, 81] 0

k\_1000 259

opm 108

the random choice case path in j60 ./rcpsp/j60.sm/j6033\_9.sm case j6033\_9.sm

v5 4 17.174575567245483 s [108, 126] 0.0 [0, 0, 0, 0, 2, 2, 5, 12, 12, 12, 2, 12, 12, 12, 13, 8, 21, 22, 17, 20, 26, 17, 33, 43, 13, 52, 12, 27, 43, 45, 15, 30, 63, 21, 52, 38, 20, 23, 37, 27, 40, 33, 56, 64, 56, 43, 72, 73, 37, 43, 56, 64, 73, 74, 68, 84, 74, 94, 99, 76, 80, 108] 0

k\_1000 260

opm 72

the random choice case path in j60 ./rcpsp/j60.sm/j6034\_1.sm case j6034\_1.sm

v5 0 0.8168964385986328 s [71, 73] -1.3888888888888888 [0, 0, 0, 0, 7, 8, 8, 9, 9, 9, 19, 9, 9, 15, 9, 17, 8, 18, 27, 16, 14, 17, 24, 14, 27, 25, 33, 18, 25, 35, 16, 22, 19, 32, 18, 36, 35, 32, 42, 26, 49, 53, 24, 42, 39, 53, 42, 47, 43, 37, 53, 47, 48, 48, 43, 56, 39, 52, 63, 58, 61, 71] 0

k\_1000 261

opm 92

the random choice case path in j60 ./rcpsp/j60.sm/j6034\_10.sm case j6034\_10.sm

v5 11 32.79833197593689 s [92, 92] 0.0 [0, 0, 0, 0, 6, 8, 17, 14, 6, 14, 1, 19, 17, 26, 36, 15, 11, 34, 16, 41, 17, 36, 16, 25, 26, 34, 36, 39, 17, 34, 45, 27, 46, 36, 26, 28, 56, 46, 46, 42, 46, 56, 27, 52, 61, 56, 56, 69, 36, 50, 58, 69, 58, 69, 64, 64, 77, 76, 58, 78, 84, 92] 0

k\_1000 262

opm 68

the random choice case path in j60 ./rcpsp/j60.sm/j6034\_2.sm case j6034\_2.sm

v5 1 2.3622660636901855 s [67, 98] -1.4705882352941175 [0, 0, 0, 0, 7, 5, 23, 5, 17, 8, 19, 21, 17, 8, 8, 5, 19, 8, 18, 14, 14, 7, 29, 22, 8, 24, 13, 25, 32, 18, 29, 25, 25, 21, 30, 19, 30, 28, 25, 39, 39, 42, 46, 35, 37, 45, 34, 46, 52, 45, 38, 33, 50, 47, 29, 46, 54, 60, 63, 51, 57, 67] 0

k\_1000 263

opm 61

the random choice case path in j60 ./rcpsp/j60.sm/j6034\_3.sm case j6034\_3.sm

v5 7 16.440614938735962 s [61, 64] 0.0 [0, 0, 0, 0, 4, 4, 3, 12, 10, 9, 10, 3, 7, 3, 7, 12, 8, 16, 20, 12, 12, 16, 9, 23, 25, 21, 17, 33, 33, 22, 24, 43, 39, 27, 29, 39, 36, 33, 22, 16, 31, 43, 35, 13, 17, 25, 21, 44, 30, 36, 50, 35, 52, 31, 42, 52, 45, 43, 54, 58, 54, 61] 0

k\_1000 264

opm 83

the random choice case path in j60 ./rcpsp/j60.sm/j6034\_4.sm case j6034\_4.sm

v5 0 1.693040370941162 s [83, 137] 0.0 [0, 0, 0, 0, 1, 2, 6, 16, 7, 7, 9, 19, 29, 6, 2, 3, 2, 6, 25, 29, 5, 39, 27, 16, 27, 39, 8, 44, 11, 17, 19, 39, 47, 30, 25, 53, 37, 47, 47, 53, 20, 48, 19, 54, 63, 21, 62, 57, 47, 30, 66, 75, 44, 47, 73, 54, 79, 64, 75, 57, 80, 83] 0

k\_1000 265

opm 80

the random choice case path in j60 ./rcpsp/j60.sm/j6034\_5.sm case j6034\_5.sm

v5 1 3.0094003677368164 s [80, 80] 0.0 [0, 0, 0, 0, 3, 3, 8, 12, 3, 4, 13, 25, 15, 7, 6, 27, 8, 4, 30, 8, 11, 20, 20, 34, 20, 14, 4, 26, 6, 27, 26, 30, 27, 29, 38, 34, 39, 25, 29, 42, 40, 20, 36, 28, 20, 33, 49, 56, 42, 45, 33, 45, 65, 52, 65, 56, 39, 56, 66, 74, 59, 80] 0

k\_1000 266

opm 81

the random choice case path in j60 ./rcpsp/j60.sm/j6034\_6.sm case j6034\_6.sm

v5 3 9.242044925689697 s [81, 86] 0.0 [0, 0, 0, 0, 7, 7, 10, 7, 10, 8, 9, 17, 9, 23, 17, 12, 24, 19, 23, 33, 42, 14, 27, 2, 16, 23, 37, 27, 40, 52, 17, 33, 40, 41, 40, 27, 41, 48, 48, 16, 24, 52, 49, 55, 54, 55, 33, 33, 54, 67, 57, 49, 60, 60, 60, 66, 67, 68, 73, 76, 71, 81] 0

k\_1000 267

opm 85

the random choice case path in j60 ./rcpsp/j60.sm/j6034\_7.sm case j6034\_7.sm

v5 8 24.452736139297485 s [85, 85] 0.0 [0, 0, 0, 0, 4, 4, 20, 9, 12, 15, 6, 12, 12, 14, 20, 25, 14, 27, 4, 9, 21, 37, 29, 20, 21, 13, 26, 39, 41, 46, 41, 21, 37, 37, 56, 31, 29, 43, 46, 56, 36, 42, 57, 57, 32, 67, 42, 39, 59, 58, 63, 46, 66, 48, 76, 70, 76, 67, 83, 79, 70, 85] 0

k\_1000 268

opm 63

the random choice case path in j60 ./rcpsp/j60.sm/j6034\_8.sm case j6034\_8.sm

v5 6 13.962790489196777 s [63, 67] 0.0 [0, 0, 0, 0, 8, 16, 8, 2, 11, 2, 8, 20, 9, 3, 20, 2, 28, 11, 18, 11, 31, 7, 14, 4, 16, 16, 31, 9, 25, 28, 17, 17, 28, 37, 36, 19, 17, 31, 14, 23, 36, 38, 47, 36, 20, 36, 32, 32, 38, 38, 41, 21, 49, 42, 48, 49, 56, 51, 54, 56, 59, 63] 0

k\_1000 269

opm 77

the random choice case path in j60 ./rcpsp/j60.sm/j6034\_9.sm case j6034\_9.sm

v5 0 0.9974167346954346 s [77, 87] 0.0 [0, 0, 0, 0, 9, 17, 2, 5, 17, 18, 5, 24, 9, 18, 26, 26, 9, 16, 32, 26, 15, 32, 41, 18, 27, 27, 27, 37, 32, 52, 37, 17, 42, 32, 46, 46, 37, 52, 42, 26, 38, 39, 39, 42, 46, 41, 52, 52, 49, 58, 58, 53, 57, 63, 65, 65, 73, 74, 74, 76, 57, 77] 0

k\_1000 270

opm 78

the random choice case path in j60 ./rcpsp/j60.sm/j6035\_1.sm case j6035\_1.sm

v5 3 6.648858308792114 s [78, 90] 0.0 [0, 0, 0, 0, 5, 5, 5, 14, 10, 10, 24, 6, 14, 13, 20, 6, 21, 14, 19, 25, 34, 9, 19, 23, 43, 13, 23, 43, 6, 31, 28, 35, 42, 44, 34, 35, 25, 36, 43, 44, 48, 31, 49, 48, 40, 46, 50, 20, 38, 51, 50, 51, 58, 44, 60, 55, 58, 64, 55, 63, 68, 78] 0

k\_1000 271

opm 71

the random choice case path in j60 ./rcpsp/j60.sm/j6035\_10.sm case j6035\_10.sm

v5 1 2.698850393295288 s [71, 136] 0.0 [0, 0, 0, 0, 1, 7, 7, 11, 7, 12, 22, 15, 12, 19, 12, 31, 17, 11, 38, 7, 18, 26, 17, 26, 26, 5, 26, 28, 1, 18, 26, 28, 36, 36, 37, 36, 35, 36, 36, 37, 28, 46, 42, 44, 48, 43, 36, 50, 43, 50, 43, 44, 48, 43, 45, 55, 43, 54, 55, 61, 60, 71] 0

k\_1000 272

opm 77

the random choice case path in j60 ./rcpsp/j60.sm/j6035\_2.sm case j6035\_2.sm

v5 4 7.173703193664551 s [77, 123] 0.0 [0, 0, 0, 0, 8, 6, 17, 11, 6, 14, 10, 8, 18, 8, 17, 22, 23, 15, 23, 19, 11, 19, 17, 18, 23, 20, 18, 29, 20, 25, 34, 27, 10, 28, 28, 14, 22, 38, 34, 33, 40, 34, 43, 38, 33, 34, 44, 46, 39, 56, 40, 50, 60, 64, 64, 60, 69, 41, 74, 67, 64, 77] 0

k\_1000 273

opm 89

the random choice case path in j60 ./rcpsp/j60.sm/j6035\_3.sm case j6035\_3.sm

v5 3 7.0905632972717285 s [89, 126] 0.0 [0, 0, 0, 0, 7, 1, 10, 19, 1, 29, 10, 19, 19, 26, 23, 26, 29, 17, 37, 46, 29, 20, 46, 37, 7, 28, 29, 35, 47, 39, 29, 31, 38, 46, 56, 55, 10, 56, 55, 37, 39, 64, 29, 57, 57, 57, 47, 67, 60, 55, 57, 74, 61, 63, 69, 63, 39, 75, 71, 81, 79, 89] 0

k\_1000 274

opm 72

the random choice case path in j60 ./rcpsp/j60.sm/j6035\_4.sm case j6035\_4.sm

v5 2 4.5070412158966064 s [72, 72] 0.0 [0, 0, 0, 0, 1, 2, 1, 2, 8, 5, 5, 9, 14, 19, 1, 29, 15, 8, 7, 14, 7, 11, 19, 26, 33, 26, 16, 16, 19, 16, 22, 18, 28, 30, 33, 24, 34, 37, 33, 37, 40, 42, 30, 37, 35, 24, 34, 42, 40, 38, 44, 45, 49, 53, 42, 44, 55, 63, 45, 64, 58, 72] 0

k\_1000 275

opm 76

the random choice case path in j60 ./rcpsp/j60.sm/j6035\_5.sm case j6035\_5.sm

v5 1 3.2626614570617676 s [76, 97] 0.0 [0, 0, 0, 0, 7, 12, 12, 12, 2, 11, 16, 17, 14, 21, 21, 7, 14, 10, 27, 15, 19, 23, 23, 43, 39, 22, 29, 33, 38, 33, 29, 39, 22, 30, 43, 48, 30, 39, 30, 48, 47, 40, 37, 48, 58, 62, 55, 54, 55, 58, 56, 45, 60, 60, 55, 70, 67, 58, 75, 73, 62, 76] 0

k\_1000 276

opm 79

the random choice case path in j60 ./rcpsp/j60.sm/j6035\_6.sm case j6035\_6.sm

v5 0 0.9792921543121338 s [79, 97] 0.0 [0, 0, 0, 0, 9, 9, 10, 20, 6, 12, 12, 10, 6, 20, 16, 15, 15, 12, 22, 27, 27, 10, 22, 30, 24, 31, 31, 22, 32, 34, 32, 34, 34, 34, 33, 41, 12, 44, 36, 27, 44, 32, 44, 51, 51, 32, 43, 32, 36, 55, 36, 39, 48, 47, 61, 61, 51, 56, 67, 69, 61, 79] 0

k\_1000 277

opm 73

the random choice case path in j60 ./rcpsp/j60.sm/j6035\_7.sm case j6035\_7.sm

v5 1 2.844240665435791 s [73, 85] 0.0 [0, 0, 0, 0, 6, 10, 6, 6, 10, 14, 16, 6, 14, 19, 11, 10, 12, 22, 6, 22, 8, 12, 17, 12, 16, 19, 28, 36, 22, 28, 32, 29, 29, 16, 14, 36, 39, 37, 49, 36, 44, 46, 21, 55, 55, 41, 39, 36, 45, 49, 51, 52, 60, 55, 62, 52, 62, 62, 55, 72, 63, 73] 0

k\_1000 278

opm 78

the random choice case path in j60 ./rcpsp/j60.sm/j6035\_8.sm case j6035\_8.sm

v5 2 4.9123828411102295 s [78, 84] 0.0 [0, 0, 0, 0, 6, 6, 16, 4, 25, 7, 27, 28, 5, 7, 7, 6, 15, 27, 12, 37, 4, 9, 16, 17, 28, 14, 37, 15, 34, 25, 25, 34, 18, 18, 27, 20, 38, 29, 38, 25, 38, 25, 32, 41, 47, 52, 30, 43, 35, 47, 38, 42, 42, 47, 65, 59, 65, 46, 74, 74, 56, 78] 0

k\_1000 279

opm 76

the random choice case path in j60 ./rcpsp/j60.sm/j6035\_9.sm case j6035\_9.sm

v5 0 0.7484695911407471 s [73, 90] -3.9473684210526314 [0, 0, 0, 0, 1, 9, 8, 12, 14, 1, 8, 5, 14, 21, 5, 7, 21, 9, 9, 21, 7, 13, 24, 23, 24, 23, 22, 21, 33, 10, 1, 23, 41, 33, 29, 42, 29, 41, 41, 29, 42, 32, 32, 38, 42, 47, 38, 49, 50, 55, 12, 50, 52, 55, 58, 51, 55, 61, 58, 71, 65, 73] 0

k\_1000 280

opm 61

the random choice case path in j60 ./rcpsp/j60.sm/j6036\_1.sm case j6036\_1.sm

v5 0 0.5842416286468506 s [61, 61] 0.0 [0, 0, 0, 0, 5, 5, 2, 1, 10, 8, 14, 1, 16, 3, 7, 5, 24, 9, 9, 15, 7, 16, 6, 14, 7, 22, 14, 15, 19, 19, 22, 21, 29, 26, 29, 21, 24, 28, 39, 43, 39, 36, 22, 29, 35, 24, 43, 26, 43, 29, 39, 44, 43, 44, 53, 51, 34, 51, 51, 55, 54, 61] 0

k\_1000 281

opm 77

the random choice case path in j60 ./rcpsp/j60.sm/j6036\_10.sm case j6036\_10.sm

v5 0 1.095057487487793 s [77, 77] 0.0 [0, 0, 0, 0, 2, 2, 2, 7, 3, 13, 2, 11, 21, 2, 2, 5, 11, 9, 2, 13, 16, 7, 9, 13, 23, 13, 16, 10, 15, 21, 33, 15, 9, 13, 23, 23, 20, 28, 29, 33, 40, 38, 20, 28, 29, 34, 30, 38, 35, 40, 47, 57, 57, 38, 38, 49, 57, 66, 57, 63, 74, 77] 0

k\_1000 282

opm 75

the random choice case path in j60 ./rcpsp/j60.sm/j6036\_2.sm case j6036\_2.sm

v5 0 0.6801931858062744 s [75, 103] 0.0 [0, 0, 0, 0, 6, 6, 6, 15, 6, 6, 15, 20, 11, 20, 28, 20, 32, 1, 22, 21, 21, 29, 20, 35, 32, 15, 35, 11, 35, 18, 35, 29, 7, 45, 15, 45, 36, 45, 47, 49, 45, 56, 28, 49, 22, 54, 54, 42, 61, 56, 62, 33, 61, 62, 65, 61, 63, 62, 64, 67, 65, 75] 0

k\_1000 283

opm 81

the random choice case path in j60 ./rcpsp/j60.sm/j6036\_3.sm case j6036\_3.sm

v5 0 0.7005696296691895 s [81, 81] 0.0 [0, 0, 0, 0, 1, 9, 1, 9, 8, 10, 10, 12, 1, 15, 15, 24, 17, 15, 24, 24, 22, 22, 16, 9, 30, 28, 16, 24, 25, 15, 36, 29, 37, 36, 41, 24, 46, 37, 29, 43, 10, 25, 51, 37, 43, 30, 30, 37, 53, 38, 55, 53, 60, 61, 40, 47, 70, 51, 68, 76, 64, 81] 0

k\_1000 284

opm 85

the random choice case path in j60 ./rcpsp/j60.sm/j6036\_4.sm case j6036\_4.sm

v5 0 0.5819025039672852 s [85, 86] 0.0 [0, 0, 0, 0, 10, 19, 26, 6, 19, 6, 19, 26, 10, 8, 16, 26, 10, 31, 14, 17, 26, 31, 24, 26, 11, 27, 27, 26, 38, 44, 27, 33, 31, 35, 42, 31, 44, 35, 39, 38, 49, 44, 47, 40, 40, 49, 35, 57, 49, 59, 55, 49, 65, 40, 65, 47, 75, 78, 57, 59, 84, 85] 0

k\_1000 285

opm 57

the random choice case path in j60 ./rcpsp/j60.sm/j6036\_5.sm case j6036\_5.sm

v5 0 0.5859766006469727 s [57, 57] 0.0 [0, 0, 0, 0, 3, 1, 5, 3, 11, 2, 8, 8, 5, 8, 11, 14, 12, 17, 14, 7, 3, 12, 10, 11, 22, 13, 16, 16, 16, 21, 28, 28, 17, 25, 10, 24, 32, 25, 28, 33, 32, 32, 32, 33, 26, 33, 33, 37, 42, 40, 37, 37, 36, 43, 41, 39, 42, 46, 48, 28, 49, 57] 0

k\_1000 286

opm 76

the random choice case path in j60 ./rcpsp/j60.sm/j6036\_6.sm case j6036\_6.sm

v5 0 0.9126853942871094 s [76, 112] 0.0 [0, 0, 0, 0, 10, 7, 10, 12, 18, 19, 7, 19, 3, 3, 12, 10, 10, 12, 18, 21, 12, 19, 7, 9, 21, 17, 27, 28, 22, 18, 19, 32, 27, 24, 28, 28, 36, 28, 22, 27, 46, 28, 36, 28, 40, 43, 46, 34, 29, 42, 53, 37, 43, 42, 58, 52, 51, 62, 70, 34, 67, 76] 0

k\_1000 287

opm 71

the random choice case path in j60 ./rcpsp/j60.sm/j6036\_7.sm case j6036\_7.sm

v5 0 0.7393991947174072 s [71, 71] 0.0 [0, 0, 0, 0, 1, 7, 7, 9, 5, 13, 5, 11, 10, 1, 20, 17, 1, 7, 17, 16, 17, 20, 14, 26, 18, 19, 13, 11, 19, 18, 20, 20, 26, 32, 26, 14, 39, 34, 34, 26, 35, 43, 53, 46, 25, 34, 42, 42, 51, 39, 35, 39, 42, 53, 50, 58, 63, 39, 64, 51, 63, 71] 0

k\_1000 288

opm 69

the random choice case path in j60 ./rcpsp/j60.sm/j6036\_8.sm case j6036\_8.sm

v5 0 0.6309449672698975 s [69, 69] 0.0 [0, 0, 0, 0, 3, 5, 6, 6, 9, 6, 9, 17, 17, 6, 12, 11, 19, 12, 13, 27, 12, 22, 20, 20, 22, 27, 23, 11, 18, 21, 28, 36, 8, 13, 32, 19, 38, 15, 37, 37, 23, 31, 31, 33, 35, 48, 42, 47, 40, 32, 54, 57, 42, 49, 57, 52, 33, 45, 60, 62, 47, 69] 0

k\_1000 289

opm 86

the random choice case path in j60 ./rcpsp/j60.sm/j6036\_9.sm case j6036\_9.sm

v5 0 0.7637791633605957 s [86, 86] 0.0 [0, 0, 0, 0, 1, 3, 5, 6, 1, 3, 5, 15, 15, 15, 3, 24, 10, 33, 5, 11, 19, 6, 33, 39, 24, 24, 11, 38, 38, 42, 43, 13, 39, 43, 34, 42, 44, 34, 43, 43, 44, 15, 41, 49, 54, 54, 42, 53, 62, 55, 51, 55, 60, 67, 60, 60, 70, 77, 79, 70, 67, 86] 0

k\_1000 290

opm 97

the random choice case path in j60 ./rcpsp/j60.sm/j6037\_1.sm case j6037\_1.sm

v5 78 599.2903010845184 s [99, 149] 2.0618556701030926 [0, 0, 0, 0, 5, 5, 8, 8, 5, 21, 30, 15, 38, 19, 11, 21, 36, 19, 27, 30, 42, 25, 38, 49, 30, 30, 33, 15, 38, 36, 42, 48, 41, 54, 56, 38, 48, 54, 49, 38, 69, 59, 58, 61, 58, 62, 64, 67, 69, 63, 63, 64, 63, 67, 74, 82, 79, 86, 86, 96, 91, 99] 0

k\_1000 291

opm 96

the random choice case path in j60 ./rcpsp/j60.sm/j6037\_10.sm case j6037\_10.sm

v5 54 602.8324871063232 s [98, 114] 2.083333333333333 [0, 0, 0, 0, 10, 20, 6, 10, 19, 11, 28, 22, 11, 6, 23, 19, 29, 28, 38, 38, 38, 33, 29, 45, 29, 11, 32, 20, 48, 8, 43, 41, 44, 45, 34, 73, 55, 66, 83, 54, 33, 54, 61, 53, 61, 71, 44, 64, 71, 81, 72, 56, 53, 71, 79, 85, 64, 81, 67, 91, 90, 98] 0

k\_1000 292

opm 95

the random choice case path in j60 ./rcpsp/j60.sm/j6037\_2.sm case j6037\_2.sm

v5 10 78.87476754188538 s [95, 108] 0.0 [0, 0, 0, 0, 7, 12, 7, 20, 12, 11, 15, 27, 20, 20, 26, 8, 24, 26, 26, 24, 24, 26, 32, 32, 40, 33, 36, 33, 41, 41, 38, 42, 50, 48, 54, 12, 23, 50, 41, 54, 55, 62, 33, 51, 61, 62, 55, 68, 68, 70, 72, 72, 76, 79, 72, 75, 84, 82, 86, 85, 81, 95] 0

k\_1000 293

opm 139

the random choice case path in j60 ./rcpsp/j60.sm/j6037\_3.sm case j6037\_3.sm

v5 43 595.7194409370422 s [142, 161] 2.158273381294964 [0, 0, 0, 0, 6, 1, 14, 1, 43, 14, 23, 24, 34, 14, 57, 24, 34, 24, 32, 9, 69, 34, 34, 14, 49, 46, 39, 46, 56, 33, 57, 64, 32, 63, 64, 88, 72, 64, 65, 88, 69, 78, 88, 93, 103, 97, 106, 93, 75, 106, 108, 111, 96, 108, 106, 103, 118, 124, 132, 132, 108, 142] 0

k\_1000 294

opm 101

the random choice case path in j60 ./rcpsp/j60.sm/j6037\_4.sm case j6037\_4.sm

v5 63 597.9778518676758 s [103, 341] 1.9801980198019802 [0, 0, 0, 0, 8, 7, 8, 11, 5, 16, 10, 11, 29, 28, 16, 15, 24, 29, 44, 34, 7, 16, 44, 19, 34, 5, 12, 34, 12, 18, 34, 44, 54, 16, 17, 60, 53, 19, 34, 63, 69, 72, 75, 53, 60, 79, 69, 75, 79, 85, 88, 34, 82, 63, 82, 83, 89, 93, 96, 96, 78, 103] 0

k\_1000 295

opm 98

the random choice case path in j60 ./rcpsp/j60.sm/j6037\_5.sm case j6037\_5.sm

v5 51 598.396237373352 s [100, 128] 2.0408163265306123 [0, 0, 2, 0, 9, 5, 5, 13, 9, 9, 9, 13, 13, 19, 28, 28, 18, 5, 38, 5, 14, 38, 47, 32, 19, 37, 19, 21, 38, 47, 55, 41, 30, 55, 63, 62, 51, 64, 82, 71, 45, 67, 59, 28, 67, 68, 68, 76, 89, 75, 45, 71, 85, 91, 85, 90, 69, 88, 89, 94, 98, 100] 0

k\_1000 296

opm 102

the random choice case path in j60 ./rcpsp/j60.sm/j6037\_6.sm case j6037\_6.sm

v5 53 599.9999859333038 s [103, 105] 0.9803921568627451 [0, 0, 0, 0, 3, 17, 3, 10, 13, 17, 19, 30, 10, 14, 22, 29, 25, 39, 17, 3, 30, 39, 25, 39, 17, 22, 39, 30, 29, 46, 52, 48, 41, 62, 39, 41, 47, 44, 67, 52, 57, 52, 39, 67, 62, 77, 77, 86, 48, 58, 88, 57, 78, 71, 73, 86, 92, 77, 94, 94, 92, 103] 0

k\_1000 297

opm 110

the random choice case path in j60 ./rcpsp/j60.sm/j6037\_7.sm case j6037\_7.sm

v5 50 592.6569306850433 s [116, 147] 5.454545454545454 [0, 19, 0, 2, 4, 2, 2, 19, 9, 27, 27, 27, 9, 35, 36, 40, 35, 4, 35, 36, 48, 44, 22, 59, 50, 46, 45, 62, 36, 19, 45, 53, 50, 51, 35, 62, 69, 55, 74, 59, 59, 78, 75, 68, 75, 68, 90, 97, 88, 88, 63, 78, 84, 90, 74, 97, 90, 95, 112, 102, 112, 116] 0

k\_1000 298

opm 93

the random choice case path in j60 ./rcpsp/j60.sm/j6037\_8.sm case j6037\_8.sm

v5 52 602.0644907951355 s [95, 119] 2.1505376344086025 [0, 0, 0, 0, 17, 2, 8, 2, 11, 18, 26, 28, 8, 15, 18, 26, 8, 11, 8, 26, 30, 18, 9, 15, 18, 37, 40, 61, 60, 60, 45, 26, 37, 37, 36, 45, 50, 41, 51, 50, 28, 67, 60, 50, 61, 69, 63, 30, 69, 58, 59, 76, 25, 58, 71, 83, 47, 83, 89, 92, 77, 95] 0

k\_1000 299

opm 96

the random choice case path in j60 ./rcpsp/j60.sm/j6037\_9.sm case j6037\_9.sm

v5 34 278.22386932373047 s [95, 97] -1.0416666666666665 [0, 0, 0, 0, 21, 13, 8, 2, 25, 29, 8, 23, 50, 15, 31, 2, 15, 38, 15, 25, 8, 31, 2, 61, 25, 18, 43, 26, 29, 48, 50, 43, 79, 44, 44, 60, 80, 57, 50, 61, 35, 38, 70, 54, 50, 70, 61, 61, 67, 70, 65, 73, 81, 77, 56, 82, 84, 82, 88, 93, 91, 95] 0

k\_1000 300

opm 73

the random choice case path in j60 ./rcpsp/j60.sm/j6038\_1.sm case j6038\_1.sm

v5 162 601.0596532821655 s [74, 111] 1.36986301369863 [0, 0, 0, 0, 4, 7, 4, 13, 5, 13, 14, 14, 7, 16, 13, 21, 27, 17, 16, 25, 25, 14, 5, 34, 32, 26, 21, 44, 21, 24, 32, 29, 34, 38, 36, 25, 34, 42, 35, 44, 42, 46, 27, 51, 43, 46, 51, 29, 52, 35, 44, 53, 44, 53, 57, 43, 60, 65, 63, 53, 66, 74] 0

k\_1000 301

opm 66

the random choice case path in j60 ./rcpsp/j60.sm/j6038\_10.sm case j6038\_10.sm

v5 250 598.91326212883 s [67, 107] 1.5151515151515151 [0, 0, 0, 0, 1, 9, 1, 1, 7, 7, 10, 16, 7, 7, 17, 17, 38, 17, 23, 16, 24, 26, 29, 29, 39, 19, 26, 47, 50, 25, 39, 25, 32, 28, 35, 38, 45, 42, 38, 47, 12, 33, 38, 24, 46, 39, 46, 50, 52, 35, 43, 49, 61, 53, 50, 46, 61, 49, 62, 63, 57, 67] 0

k\_1000 302

opm 76

the random choice case path in j60 ./rcpsp/j60.sm/j6038\_2.sm case j6038\_2.sm

v5 120 598.7473769187927 s [80, 160] 5.263157894736842 [0, 0, 0, 0, 9, 8, 9, 1, 14, 8, 13, 13, 9, 19, 13, 23, 19, 19, 13, 24, 22, 23, 13, 24, 22, 31, 13, 30, 31, 27, 40, 36, 27, 33, 47, 28, 28, 28, 33, 41, 44, 40, 62, 44, 47, 44, 53, 68, 33, 54, 57, 65, 43, 47, 59, 68, 65, 52, 74, 73, 72, 80] 0

k\_1000 303

opm 77

the random choice case path in j60 ./rcpsp/j60.sm/j6038\_3.sm case j6038\_3.sm

v5 86 254.86170506477356 s [77, 77] 0.0 [0, 0, 0, 0, 10, 8, 10, 10, 10, 8, 18, 29, 15, 20, 9, 17, 28, 15, 10, 36, 30, 19, 30, 17, 8, 38, 33, 29, 33, 18, 38, 43, 41, 38, 40, 45, 36, 43, 48, 37, 48, 34, 43, 56, 52, 45, 53, 56, 55, 56, 66, 50, 57, 66, 57, 60, 56, 53, 72, 68, 60, 77] 0

k\_1000 304

opm 58

the random choice case path in j60 ./rcpsp/j60.sm/j6038\_4.sm case j6038\_4.sm

v5 16 41.91577434539795 s [58, 191] 0.0 [0, 0, 0, 0, 2, 6, 7, 4, 2, 4, 4, 11, 2, 11, 3, 10, 15, 6, 13, 7, 16, 22, 3, 33, 7, 15, 11, 20, 14, 41, 21, 14, 22, 25, 31, 31, 21, 37, 26, 39, 29, 26, 29, 26, 31, 39, 41, 37, 45, 41, 37, 49, 38, 29, 39, 46, 50, 46, 47, 50, 53, 58] 0

k\_1000 305

opm 103

the random choice case path in j60 ./rcpsp/j60.sm/j6038\_5.sm case j6038\_5.sm

v5 1 3.454697608947754 s [103, 172] 0.0 [0, 0, 0, 0, 9, 9, 9, 13, 13, 17, 18, 17, 22, 30, 22, 6, 8, 41, 8, 17, 51, 16, 17, 39, 30, 33, 9, 22, 29, 39, 46, 48, 51, 30, 56, 60, 46, 59, 60, 54, 29, 32, 66, 35, 66, 76, 70, 64, 74, 48, 56, 69, 74, 62, 62, 51, 82, 83, 93, 83, 84, 103] 0

k\_1000 306

opm 86

the random choice case path in j60 ./rcpsp/j60.sm/j6038\_6.sm case j6038\_6.sm

v5 0 1.322040319442749 s [86, 104] 0.0 [0, 0, 0, 0, 9, 9, 15, 23, 7, 7, 23, 9, 27, 26, 13, 15, 13, 35, 29, 21, 17, 26, 27, 15, 27, 32, 12, 31, 41, 7, 37, 27, 41, 31, 41, 49, 22, 39, 43, 49, 48, 40, 47, 49, 55, 47, 57, 57, 59, 57, 61, 58, 36, 68, 73, 57, 70, 68, 60, 76, 82, 86] 0

k\_1000 307

opm 74

the random choice case path in j60 ./rcpsp/j60.sm/j6038\_7.sm case j6038\_7.sm

v5 71 292.30034828186035 s [74, 155] 0.0 [0, 0, 0, 0, 5, 10, 7, 9, 9, 9, 16, 26, 10, 10, 17, 17, 31, 16, 17, 26, 36, 43, 26, 51, 36, 26, 36, 25, 26, 33, 16, 41, 48, 43, 36, 36, 51, 63, 43, 43, 60, 47, 56, 53, 48, 43, 48, 48, 57, 50, 60, 67, 54, 54, 60, 61, 60, 68, 69, 64, 69, 74] 0

k\_1000 308

opm 71

the random choice case path in j60 ./rcpsp/j60.sm/j6038\_8.sm case j6038\_8.sm

v5 194 600.419951915741 s [73, 76] 2.8169014084507045 [0, 0, 0, 0, 8, 8, 17, 8, 9, 13, 9, 26, 13, 12, 23, 35, 3, 23, 7, 9, 7, 9, 23, 12, 26, 32, 21, 36, 18, 36, 26, 42, 29, 29, 41, 38, 38, 35, 38, 41, 41, 41, 48, 44, 42, 53, 45, 48, 54, 61, 55, 56, 63, 63, 61, 54, 66, 48, 65, 69, 61, 73] 0

k\_1000 309

opm 66

the random choice case path in j60 ./rcpsp/j60.sm/j6038\_9.sm case j6038\_9.sm

v5 246 599.2372543811798 s [67, 103] 1.5151515151515151 [0, 0, 0, 0, 5, 8, 8, 7, 18, 7, 8, 16, 11, 18, 1, 29, 8, 12, 21, 19, 9, 16, 7, 14, 18, 9, 26, 24, 28, 24, 19, 28, 12, 37, 30, 37, 42, 34, 28, 14, 41, 30, 37, 30, 41, 28, 34, 44, 52, 44, 49, 43, 49, 37, 51, 51, 53, 55, 52, 64, 59, 67] 0

k\_1000 310

opm 80

the random choice case path in j60 ./rcpsp/j60.sm/j6039\_1.sm case j6039\_1.sm

v5 6 11.300257205963135 s [80, 93] 0.0 [0, 0, 0, 0, 5, 5, 8, 6, 5, 10, 12, 8, 12, 21, 12, 11, 19, 11, 21, 18, 30, 18, 23, 24, 15, 31, 31, 1, 39, 23, 15, 23, 31, 33, 19, 39, 39, 30, 41, 33, 37, 39, 47, 45, 44, 48, 48, 44, 55, 48, 58, 48, 50, 56, 57, 66, 65, 68, 55, 76, 76, 80] 0

k\_1000 311

opm 74

the random choice case path in j60 ./rcpsp/j60.sm/j6039\_10.sm case j6039\_10.sm

v5 0 0.8482279777526855 s [74, 119] 0.0 [0, 0, 0, 0, 8, 7, 8, 2, 2, 8, 7, 8, 16, 8, 3, 3, 15, 16, 15, 15, 23, 15, 18, 9, 23, 8, 23, 16, 29, 13, 20, 32, 29, 20, 32, 40, 30, 41, 32, 26, 40, 47, 34, 41, 50, 54, 31, 47, 34, 39, 56, 45, 44, 41, 64, 54, 51, 64, 65, 68, 55, 74] 0

k\_1000 312

opm 84

the random choice case path in j60 ./rcpsp/j60.sm/j6039\_2.sm case j6039\_2.sm

v5 0 0.7106168270111084 s [84, 107] 0.0 [0, 0, 0, 0, 10, 10, 10, 2, 17, 17, 12, 18, 15, 21, 2, 10, 24, 34, 27, 21, 24, 27, 43, 36, 27, 21, 42, 51, 42, 51, 35, 45, 57, 19, 27, 62, 51, 51, 31, 49, 52, 49, 58, 31, 66, 43, 43, 66, 53, 75, 55, 66, 58, 45, 55, 63, 71, 66, 80, 82, 74, 84] 0

k\_1000 313

opm 83

the random choice case path in j60 ./rcpsp/j60.sm/j6039\_3.sm case j6039\_3.sm

v5 0 1.3478848934173584 s [83, 101] 0.0 [0, 0, 0, 0, 9, 4, 3, 14, 24, 3, 17, 34, 4, 24, 14, 23, 14, 4, 17, 35, 4, 4, 15, 16, 24, 31, 32, 4, 13, 29, 35, 26, 24, 33, 28, 38, 38, 35, 48, 32, 41, 41, 39, 35, 58, 33, 48, 44, 58, 41, 65, 42, 59, 42, 51, 66, 68, 47, 65, 56, 73, 83] 0

k\_1000 314

opm 92

the random choice case path in j60 ./rcpsp/j60.sm/j6039\_4.sm case j6039\_4.sm

v5 6 15.06775188446045 s [92, 109] 0.0 [0, 0, 0, 0, 8, 4, 9, 10, 14, 4, 11, 12, 14, 10, 14, 20, 22, 18, 21, 10, 10, 27, 27, 27, 18, 21, 21, 19, 29, 36, 28, 35, 41, 38, 32, 45, 31, 47, 42, 41, 47, 36, 51, 42, 51, 54, 57, 45, 55, 34, 62, 54, 47, 61, 72, 62, 58, 73, 62, 83, 37, 92] 0

k\_1000 315

opm 73

the random choice case path in j60 ./rcpsp/j60.sm/j6039\_5.sm case j6039\_5.sm

v5 2 4.8600709438323975 s [73, 78] 0.0 [0, 0, 0, 0, 5, 8, 6, 14, 14, 15, 8, 14, 19, 14, 26, 19, 17, 14, 30, 19, 6, 14, 29, 19, 26, 35, 35, 27, 17, 30, 26, 40, 41, 35, 46, 40, 48, 35, 35, 34, 36, 43, 45, 43, 40, 49, 45, 43, 45, 51, 57, 47, 55, 47, 55, 54, 63, 57, 64, 63, 64, 73] 0

k\_1000 316

opm 84

the random choice case path in j60 ./rcpsp/j60.sm/j6039\_6.sm case j6039\_6.sm

v5 2 5.776014566421509 s [84, 161] 0.0 [0, 0, 0, 0, 9, 4, 15, 4, 19, 19, 15, 28, 37, 4, 19, 37, 28, 37, 7, 31, 15, 24, 9, 12, 31, 17, 25, 43, 45, 28, 38, 45, 50, 60, 42, 42, 41, 43, 41, 71, 53, 61, 50, 53, 45, 61, 60, 65, 71, 63, 74, 65, 68, 71, 56, 64, 77, 77, 81, 80, 83, 84] 0

k\_1000 317

opm 68

the random choice case path in j60 ./rcpsp/j60.sm/j6039\_7.sm case j6039\_7.sm

v5 2 4.54105281829834 s [68, 78] 0.0 [0, 0, 0, 0, 4, 8, 8, 12, 12, 2, 18, 8, 9, 18, 9, 10, 10, 10, 18, 2, 16, 18, 10, 28, 18, 34, 12, 18, 22, 12, 19, 27, 28, 28, 32, 19, 39, 20, 21, 25, 26, 37, 26, 37, 41, 32, 43, 40, 47, 47, 41, 30, 36, 29, 50, 49, 40, 40, 54, 50, 60, 68] 0

k\_1000 318

opm 77

the random choice case path in j60 ./rcpsp/j60.sm/j6039\_8.sm case j6039\_8.sm

v5 1 3.352259635925293 s [77, 100] 0.0 [0, 0, 0, 0, 5, 6, 6, 13, 13, 6, 19, 19, 14, 14, 23, 16, 14, 41, 20, 23, 26, 36, 45, 13, 23, 26, 33, 46, 19, 36, 26, 50, 30, 50, 23, 20, 53, 16, 54, 28, 46, 46, 50, 29, 50, 40, 48, 45, 33, 59, 67, 51, 44, 71, 47, 54, 61, 56, 64, 60, 72, 77] 0

k\_1000 319

opm 72

the random choice case path in j60 ./rcpsp/j60.sm/j6039\_9.sm case j6039\_9.sm

v5 1 2.7184507846832275 s [72, 72] 0.0 [0, 0, 0, 0, 5, 5, 2, 2, 7, 7, 5, 12, 18, 6, 28, 36, 18, 10, 17, 2, 13, 6, 17, 39, 28, 24, 22, 27, 6, 7, 29, 17, 11, 16, 36, 29, 39, 42, 42, 36, 25, 39, 42, 44, 52, 44, 54, 49, 27, 34, 33, 34, 55, 63, 58, 36, 52, 56, 42, 66, 71, 72] 0

k\_1000 320

opm 60

the random choice case path in j60 ./rcpsp/j60.sm/j603\_1.sm case j603\_1.sm

v5 0 0.9070873260498047 s [60, 61] 0.0 [0, 0, 0, 0, 3, 4, 9, 15, 19, 3, 15, 24, 4, 6, 4, 9, 16, 27, 25, 10, 14, 19, 12, 6, 13, 16, 9, 13, 13, 15, 21, 24, 28, 15, 27, 24, 10, 24, 27, 25, 27, 13, 31, 35, 3, 35, 24, 27, 22, 28, 31, 36, 41, 37, 43, 50, 45, 46, 43, 56, 51, 60] 0

k\_1000 321

opm 69

the random choice case path in j60 ./rcpsp/j60.sm/j603\_10.sm case j603\_10.sm

v5 4 9.48586368560791 s [69, 103] 0.0 [0, 0, 0, 0, 10, 1, 19, 7, 24, 10, 10, 14, 18, 19, 24, 17, 45, 23, 7, 19, 39, 24, 48, 7, 3, 49, 30, 29, 25, 17, 26, 3, 35, 18, 32, 32, 39, 41, 29, 35, 47, 37, 26, 6, 30, 49, 54, 45, 32, 35, 34, 41, 47, 51, 55, 63, 64, 56, 45, 66, 60, 69] 0

k\_1000 322

opm 69

the random choice case path in j60 ./rcpsp/j60.sm/j603\_2.sm case j603\_2.sm

v5 0 0.7462859153747559 s [69, 69] 0.0 [0, 0, 0, 0, 4, 9, 7, 8, 8, 11, 15, 18, 18, 23, 7, 15, 4, 15, 12, 18, 20, 24, 20, 8, 27, 9, 14, 11, 30, 21, 21, 21, 27, 9, 18, 35, 27, 11, 32, 4, 38, 26, 41, 32, 25, 44, 27, 30, 36, 28, 35, 45, 35, 27, 39, 43, 23, 53, 48, 63, 39, 69] 0

k\_1000 323

opm 105

the random choice case path in j60 ./rcpsp/j60.sm/j603\_3.sm case j603\_3.sm

v5 0 1.8837132453918457 s [105, 105] 0.0 [0, 0, 0, 0, 10, 4, 16, 16, 23, 9, 23, 9, 9, 21, 31, 23, 31, 40, 49, 12, 16, 34, 57, 57, 24, 12, 61, 28, 19, 4, 26, 37, 38, 64, 24, 12, 24, 11, 19, 21, 34, 61, 71, 26, 19, 44, 31, 64, 31, 64, 47, 39, 68, 26, 81, 89, 46, 99, 100, 35, 65, 105] 0

k\_1000 324

opm 81

the random choice case path in j60 ./rcpsp/j60.sm/j603\_4.sm case j603\_4.sm

v5 0 0.8671588897705078 s [81, 111] 0.0 [0, 0, 0, 0, 7, 9, 9, 7, 11, 12, 12, 1, 10, 19, 17, 10, 13, 12, 13, 17, 21, 18, 21, 17, 13, 19, 21, 17, 26, 23, 21, 10, 19, 25, 21, 24, 25, 10, 30, 25, 31, 35, 34, 32, 24, 31, 39, 41, 37, 26, 27, 47, 54, 60, 41, 60, 60, 70, 69, 65, 77, 81] 0

k\_1000 325

opm 83

the random choice case path in j60 ./rcpsp/j60.sm/j603\_5.sm case j603\_5.sm

v5 0 1.7806274890899658 s [83, 83] 0.0 [0, 0, 0, 0, 8, 18, 10, 28, 28, 18, 10, 18, 13, 29, 10, 14, 15, 29, 13, 22, 37, 13, 24, 8, 30, 24, 44, 49, 54, 24, 18, 16, 29, 37, 27, 22, 54, 14, 55, 13, 33, 44, 18, 37, 60, 37, 47, 64, 29, 36, 45, 57, 47, 18, 62, 70, 64, 66, 45, 78, 75, 83] 0

k\_1000 326

opm 57

the random choice case path in j60 ./rcpsp/j60.sm/j603\_6.sm case j603\_6.sm

v5 0 0.8787124156951904 s [57, 61] 0.0 [0, 0, 0, 0, 6, 9, 6, 10, 8, 10, 9, 8, 14, 9, 14, 19, 8, 17, 20, 20, 20, 11, 11, 19, 22, 20, 14, 30, 17, 20, 30, 15, 26, 23, 41, 32, 17, 22, 10, 28, 16, 26, 35, 23, 30, 17, 36, 35, 12, 32, 29, 30, 38, 43, 29, 36, 39, 45, 51, 50, 41, 57] 0

k\_1000 327

opm 59

the random choice case path in j60 ./rcpsp/j60.sm/j603\_7.sm case j603\_7.sm

v5 0 1.0398907661437988 s [59, 101] 0.0 [0, 0, 0, 0, 2, 8, 8, 2, 8, 6, 13, 13, 10, 3, 17, 17, 11, 10, 3, 6, 19, 14, 11, 21, 7, 17, 4, 26, 6, 21, 27, 30, 21, 10, 11, 6, 26, 35, 12, 13, 38, 15, 17, 23, 12, 13, 41, 44, 22, 2, 13, 35, 22, 40, 27, 35, 35, 47, 47, 31, 54, 59] 0

k\_1000 328

opm 55

the random choice case path in j60 ./rcpsp/j60.sm/j603\_8.sm case j603\_8.sm

v5 9 29.42491102218628 s [55, 56] 0.0 [0, 0, 0, 0, 3, 7, 19, 7, 23, 16, 3, 8, 7, 4, 17, 34, 24, 25, 17, 19, 3, 23, 25, 16, 4, 4, 22, 25, 24, 30, 33, 7, 35, 35, 32, 22, 23, 39, 5, 32, 24, 17, 41, 39, 24, 34, 46, 41, 32, 52, 12, 39, 45, 34, 12, 24, 35, 39, 52, 46, 53, 55] 0

k\_1000 329

opm 67

the random choice case path in j60 ./rcpsp/j60.sm/j603\_9.sm case j603\_9.sm

v5 13 26.109001636505127 s [67, 77] 0.0 [0, 0, 0, 0, 1, 1, 3, 6, 6, 11, 10, 3, 3, 1, 10, 4, 11, 11, 11, 14, 7, 16, 16, 19, 23, 5, 11, 4, 17, 20, 9, 16, 19, 23, 25, 14, 21, 18, 11, 10, 12, 26, 18, 12, 19, 26, 22, 26, 35, 30, 19, 39, 25, 32, 39, 49, 52, 44, 49, 62, 11, 67] 0

k\_1000 330

opm 86

the random choice case path in j60 ./rcpsp/j60.sm/j6040\_1.sm case j6040\_1.sm

v5 0 0.6658310890197754 s [86, 86] 0.0 [0, 0, 0, 0, 4, 4, 10, 7, 10, 20, 27, 7, 7, 10, 20, 27, 29, 17, 35, 16, 7, 16, 22, 18, 17, 42, 35, 20, 25, 27, 41, 22, 29, 35, 35, 50, 44, 42, 50, 53, 35, 50, 30, 44, 54, 52, 49, 50, 61, 70, 61, 57, 66, 54, 70, 54, 64, 78, 79, 72, 70, 86] 0

k\_1000 331

opm 73

the random choice case path in j60 ./rcpsp/j60.sm/j6040\_10.sm case j6040\_10.sm

v5 0 0.7108561992645264 s [73, 73] 0.0 [0, 0, 0, 0, 3, 1, 11, 1, 6, 16, 20, 11, 11, 21, 16, 3, 3, 30, 21, 3, 3, 13, 17, 4, 27, 19, 20, 30, 37, 31, 36, 35, 28, 28, 36, 44, 21, 54, 44, 52, 40, 33, 27, 59, 28, 44, 41, 30, 50, 37, 59, 50, 60, 31, 61, 54, 51, 48, 68, 58, 53, 73] 0

k\_1000 332

opm 81

the random choice case path in j60 ./rcpsp/j60.sm/j6040\_2.sm case j6040\_2.sm

v5 0 0.7326927185058594 s [81, 113] 0.0 [0, 0, 0, 0, 6, 4, 14, 14, 4, 12, 7, 4, 22, 9, 9, 6, 30, 15, 19, 9, 30, 29, 29, 7, 35, 15, 17, 30, 33, 37, 12, 36, 37, 15, 20, 44, 22, 29, 35, 46, 53, 42, 14, 38, 53, 38, 48, 54, 44, 44, 53, 57, 60, 54, 54, 58, 67, 64, 73, 64, 64, 81] 0

k\_1000 333

opm 70

the random choice case path in j60 ./rcpsp/j60.sm/j6040\_3.sm case j6040\_3.sm

v5 0 0.6594521999359131 s [70, 70] 0.0 [0, 0, 0, 0, 2, 6, 6, 12, 14, 16, 14, 12, 3, 6, 16, 3, 17, 3, 23, 2, 13, 3, 23, 13, 13, 16, 11, 9, 18, 25, 25, 25, 18, 30, 29, 30, 30, 32, 23, 40, 29, 27, 14, 35, 32, 39, 38, 40, 23, 44, 44, 41, 42, 49, 36, 45, 49, 59, 67, 59, 50, 70] 0

k\_1000 334

opm 87

the random choice case path in j60 ./rcpsp/j60.sm/j6040\_4.sm case j6040\_4.sm

v5 0 0.6649537086486816 s [87, 87] 0.0 [0, 0, 0, 0, 9, 5, 8, 9, 12, 20, 20, 23, 20, 17, 17, 19, 23, 23, 5, 12, 26, 26, 30, 22, 26, 31, 26, 31, 34, 34, 29, 19, 31, 29, 41, 12, 39, 29, 34, 41, 41, 45, 39, 31, 39, 47, 45, 55, 42, 47, 47, 55, 37, 64, 52, 70, 43, 53, 56, 58, 78, 87] 0

k\_1000 335

opm 83

the random choice case path in j60 ./rcpsp/j60.sm/j6040\_5.sm case j6040\_5.sm

v5 0 0.602485179901123 s [83, 83] 0.0 [0, 0, 0, 0, 5, 11, 5, 15, 4, 15, 21, 14, 4, 24, 24, 22, 22, 27, 30, 32, 36, 14, 4, 24, 19, 27, 22, 24, 35, 37, 27, 36, 27, 30, 39, 37, 22, 21, 36, 39, 43, 49, 40, 47, 57, 64, 46, 58, 72, 64, 47, 58, 60, 60, 73, 62, 66, 72, 50, 82, 69, 83] 0

k\_1000 336

opm 69

the random choice case path in j60 ./rcpsp/j60.sm/j6040\_6.sm case j6040\_6.sm

v5 0 0.5513019561767578 s [69, 82] 0.0 [0, 0, 0, 0, 1, 1, 7, 3, 3, 3, 1, 4, 16, 1, 12, 12, 8, 7, 8, 1, 12, 14, 7, 16, 18, 24, 13, 24, 3, 16, 18, 17, 12, 18, 12, 31, 34, 20, 25, 25, 35, 21, 34, 35, 31, 31, 25, 37, 41, 37, 41, 37, 45, 45, 45, 55, 33, 42, 52, 52, 59, 69] 0

k\_1000 337

opm 68

the random choice case path in j60 ./rcpsp/j60.sm/j6040\_7.sm case j6040\_7.sm

v5 0 0.6995151042938232 s [68, 88] 0.0 [0, 0, 0, 0, 5, 6, 5, 13, 13, 9, 23, 6, 13, 15, 5, 14, 23, 9, 31, 31, 8, 12, 14, 17, 32, 31, 26, 5, 36, 26, 11, 17, 34, 44, 33, 27, 17, 16, 31, 36, 37, 38, 44, 7, 39, 37, 45, 32, 51, 51, 45, 23, 24, 59, 60, 51, 30, 43, 61, 66, 46, 68] 0

k\_1000 338

opm 80

the random choice case path in j60 ./rcpsp/j60.sm/j6040\_8.sm case j6040\_8.sm

v5 0 0.6232688426971436 s [80, 80] 0.0 [0, 0, 0, 0, 8, 7, 6, 7, 7, 8, 14, 24, 11, 8, 15, 28, 17, 29, 14, 14, 24, 11, 29, 24, 32, 17, 36, 42, 33, 32, 37, 26, 28, 36, 35, 44, 43, 24, 43, 43, 46, 44, 53, 53, 47, 35, 51, 56, 42, 51, 46, 61, 45, 50, 45, 53, 61, 69, 62, 63, 75, 80] 0

k\_1000 339

opm 90

the random choice case path in j60 ./rcpsp/j60.sm/j6040\_9.sm case j6040\_9.sm

v5 0 0.7304351329803467 s [90, 90] 0.0 [0, 0, 0, 0, 5, 9, 11, 6, 9, 17, 9, 22, 17, 19, 22, 11, 5, 11, 26, 5, 18, 26, 13, 14, 19, 28, 34, 34, 34, 6, 31, 43, 39, 41, 41, 46, 46, 41, 46, 51, 49, 53, 54, 54, 49, 43, 54, 31, 60, 69, 69, 61, 54, 56, 69, 58, 65, 77, 72, 73, 87, 90] 0

k\_1000 340

opm 122

the random choice case path in j60 ./rcpsp/j60.sm/j6041\_1.sm case j6041\_1.sm

v5 29 603.4970095157623 s [129, 441] 5.737704918032787 [0, 0, 12, 0, 3, 7, 25, 13, 3, 13, 22, 30, 32, 22, 33, 22, 35, 22, 41, 40, 50, 97, 3, 33, 30, 58, 40, 26, 50, 42, 42, 55, 58, 89, 62, 68, 61, 71, 61, 74, 81, 71, 91, 80, 97, 107, 74, 46, 102, 84, 83, 83, 89, 106, 117, 106, 99, 112, 106, 119, 125, 129] 0

k\_1000 341

opm 111

the random choice case path in j60 ./rcpsp/j60.sm/j6041\_10.sm case j6041\_10.sm

v5 48 598.377810716629 s [116, 121] 4.504504504504505 [0, 0, 0, 0, 4, 4, 18, 13, 5, 21, 9, 39, 6, 20, 13, 24, 30, 38, 48, 30, 30, 4, 33, 48, 46, 39, 48, 20, 47, 63, 46, 67, 24, 56, 58, 55, 92, 85, 61, 63, 70, 71, 77, 70, 64, 77, 93, 93, 75, 74, 92, 85, 72, 98, 97, 95, 102, 98, 93, 106, 105, 116] 0

k\_1000 342

opm 113

the random choice case path in j60 ./rcpsp/j60.sm/j6041\_2.sm case j6041\_2.sm

v5 36 480.25958800315857 s [113, 149] 0.0 [0, 0, 0, 0, 25, 10, 5, 10, 32, 14, 25, 14, 12, 37, 5, 23, 20, 21, 37, 27, 41, 21, 34, 37, 42, 41, 60, 37, 46, 32, 51, 42, 46, 51, 60, 50, 62, 66, 59, 73, 53, 71, 74, 79, 79, 83, 72, 85, 85, 84, 94, 91, 88, 98, 99, 104, 84, 104, 108, 92, 104, 113] 0

k\_1000 343

opm 89

the random choice case path in j60 ./rcpsp/j60.sm/j6041\_3.sm case j6041\_3.sm

v5 38 599.9385619163513 s [101, 107] 13.48314606741573 [0, 0, 0, 27, 1, 2, 24, 1, 11, 18, 9, 31, 2, 9, 15, 8, 33, 11, 35, 21, 27, 27, 21, 47, 47, 32, 89, 55, 39, 43, 69, 50, 59, 27, 55, 27, 62, 37, 50, 77, 39, 50, 74, 55, 74, 62, 59, 62, 72, 88, 82, 89, 89, 92, 85, 61, 93, 89, 93, 97, 94, 101] 0

k\_1000 344

opm 133

the random choice case path in j60 ./rcpsp/j60.sm/j6041\_4.sm case j6041\_4.sm

v5 34 594.5158336162567 s [139, 163] 4.511278195488721 [0, 0, 0, 0, 10, 4, 12, 10, 8, 14, 40, 37, 24, 29, 16, 15, 17, 31, 29, 38, 65, 53, 16, 49, 49, 74, 53, 59, 15, 54, 78, 65, 57, 84, 74, 88, 78, 74, 83, 16, 81, 98, 105, 59, 83, 115, 88, 98, 91, 94, 115, 106, 121, 100, 69, 90, 129, 121, 131, 131, 132, 139] 0

k\_1000 345

opm 109

the random choice case path in j60 ./rcpsp/j60.sm/j6041\_5.sm case j6041\_5.sm

v5 25 593.5451474189758 s [126, 550] 15.59633027522936 [0, 0, 0, 0, 4, 33, 11, 29, 38, 21, 44, 11, 21, 35, 20, 22, 38, 29, 44, 37, 27, 47, 47, 29, 54, 39, 54, 48, 63, 66, 56, 63, 54, 4, 75, 70, 68, 105, 71, 56, 85, 75, 86, 96, 96, 93, 85, 73, 103, 89, 76, 93, 101, 89, 110, 111, 115, 115, 118, 115, 124, 126] 0

k\_1000 346

opm 134

the random choice case path in j60 ./rcpsp/j60.sm/j6041\_6.sm case j6041\_6.sm

v5 9 143.32351899147034 s [133, 209] -0.7462686567164178 [0, 0, 0, 14, 22, 13, 10, 4, 11, 26, 13, 46, 24, 10, 36, 4, 62, 75, 61, 28, 34, 24, 55, 65, 28, 78, 71, 46, 46, 84, 88, 62, 54, 104, 80, 94, 70, 65, 75, 84, 85, 85, 13, 85, 77, 88, 88, 101, 109, 78, 86, 98, 98, 105, 105, 117, 112, 113, 117, 124, 123, 133] 0

k\_1000 347

opm 132

the random choice case path in j60 ./rcpsp/j60.sm/j6041\_7.sm case j6041\_7.sm

v5 45 604.8022558689117 s [137, 177] 3.787878787878788 [0, 0, 0, 17, 16, 23, 22, 7, 10, 10, 10, 18, 32, 40, 25, 55, 13, 32, 12, 33, 18, 34, 50, 41, 25, 47, 62, 23, 42, 56, 36, 46, 79, 42, 58, 77, 36, 65, 86, 71, 88, 71, 58, 97, 67, 88, 97, 79, 89, 103, 91, 102, 107, 117, 107, 117, 122, 119, 97, 128, 126, 137] 0

k\_1000 348

opm 135

the random choice case path in j60 ./rcpsp/j60.sm/j6041\_8.sm case j6041\_8.sm

v5 34 598.8581337928772 s [140, 229] 3.7037037037037033 [0, 0, 14, 0, 7, 18, 16, 24, 30, 38, 30, 5, 7, 24, 24, 30, 26, 16, 26, 40, 61, 40, 71, 20, 25, 39, 52, 45, 26, 61, 30, 79, 61, 52, 63, 91, 54, 66, 79, 71, 87, 50, 80, 69, 92, 97, 98, 83, 111, 82, 103, 65, 89, 113, 101, 98, 101, 116, 126, 135, 117, 140] 0

k\_1000 349

opm 131

the random choice case path in j60 ./rcpsp/j60.sm/j6041\_9.sm case j6041\_9.sm

v5 33 596.3963222503662 s [141, 197] 7.633587786259542 [0, 15, 0, 0, 20, 24, 20, 43, 6, 11, 9, 24, 9, 34, 28, 34, 43, 44, 32, 32, 11, 85, 44, 52, 94, 34, 56, 53, 59, 69, 28, 53, 43, 61, 99, 59, 90, 69, 78, 69, 86, 77, 69, 78, 94, 85, 102, 107, 94, 105, 114, 99, 114, 113, 113, 127, 136, 122, 140, 130, 124, 141] 0

k\_1000 350

opm 83

the random choice case path in j60 ./rcpsp/j60.sm/j6042\_1.sm case j6042\_1.sm

v5 156 599.5103149414062 s [83, 127] 0.0 [0, 0, 0, 0, 9, 14, 9, 9, 15, 15, 23, 23, 8, 15, 17, 23, 18, 32, 17, 30, 39, 31, 32, 32, 37, 42, 32, 42, 37, 13, 42, 14, 22, 48, 23, 48, 42, 53, 44, 48, 32, 54, 56, 50, 46, 69, 53, 57, 57, 66, 67, 67, 58, 57, 56, 59, 67, 73, 74, 67, 73, 83] 0

k\_1000 351

opm 87

the random choice case path in j60 ./rcpsp/j60.sm/j6042\_10.sm case j6042\_10.sm

v5 33 300.34247732162476 s [87, 92] 0.0 [0, 0, 0, 0, 7, 9, 7, 16, 9, 20, 1, 26, 20, 38, 45, 11, 19, 20, 16, 31, 13, 1, 25, 30, 28, 20, 45, 25, 28, 36, 39, 18, 36, 31, 49, 50, 52, 59, 34, 40, 47, 48, 62, 49, 40, 34, 48, 68, 59, 56, 54, 55, 64, 51, 64, 69, 75, 70, 83, 54, 77, 87] 0

k\_1000 352

opm 68

the random choice case path in j60 ./rcpsp/j60.sm/j6042\_2.sm case j6042\_2.sm

v5 99 405.19917249679565 s [68, 86] 0.0 [0, 0, 0, 0, 3, 8, 7, 13, 5, 8, 7, 13, 18, 8, 14, 23, 13, 18, 8, 27, 3, 11, 17, 13, 25, 20, 20, 22, 23, 20, 8, 27, 20, 31, 20, 21, 29, 30, 31, 39, 33, 32, 23, 36, 25, 34, 34, 30, 40, 46, 53, 47, 45, 47, 54, 44, 58, 57, 66, 64, 53, 68] 0

k\_1000 353

opm 78

the random choice case path in j60 ./rcpsp/j60.sm/j6042\_3.sm case j6042\_3.sm

v5 92 601.3553712368011 s [84, 111] 7.6923076923076925 [0, 0, 0, 0, 3, 12, 17, 4, 17, 18, 5, 32, 13, 5, 18, 22, 6, 17, 22, 12, 39, 12, 18, 25, 25, 30, 38, 30, 46, 53, 40, 39, 31, 31, 58, 58, 37, 46, 38, 31, 40, 46, 47, 47, 54, 63, 52, 63, 64, 52, 65, 62, 70, 68, 58, 72, 71, 70, 75, 74, 81, 84] 0

k\_1000 354

opm 103

the random choice case path in j60 ./rcpsp/j60.sm/j6042\_4.sm case j6042\_4.sm

v5 70 601.0092694759369 s [106, 144] 2.912621359223301 [0, 0, 0, 0, 8, 8, 21, 8, 14, 13, 8, 22, 24, 10, 37, 24, 14, 34, 47, 22, 34, 36, 22, 34, 63, 30, 53, 34, 57, 41, 43, 30, 15, 53, 52, 51, 52, 63, 67, 56, 37, 72, 63, 63, 54, 57, 71, 22, 74, 78, 76, 75, 88, 84, 90, 76, 77, 85, 96, 90, 97, 106] 0

k\_1000 355

opm 73

the random choice case path in j60 ./rcpsp/j60.sm/j6042\_5.sm case j6042\_5.sm

v5 9 25.91645860671997 s [73, 73] 0.0 [0, 0, 0, 0, 13, 3, 3, 3, 13, 6, 13, 23, 5, 8, 8, 13, 24, 11, 13, 6, 11, 22, 20, 33, 15, 20, 23, 27, 19, 35, 35, 20, 38, 33, 39, 27, 23, 17, 42, 26, 27, 31, 50, 49, 36, 38, 44, 53, 50, 54, 54, 37, 62, 56, 55, 57, 53, 55, 65, 65, 64, 73] 0

k\_1000 356

opm 82

the random choice case path in j60 ./rcpsp/j60.sm/j6042\_6.sm case j6042\_6.sm

v5 122 597.0339143276215 s [84, 84] 2.4390243902439024 [0, 0, 0, 0, 21, 4, 9, 5, 4, 9, 13, 7, 31, 8, 11, 18, 8, 13, 14, 28, 18, 16, 53, 29, 10, 47, 28, 37, 31, 33, 28, 41, 33, 42, 21, 29, 47, 61, 50, 57, 58, 41, 58, 51, 65, 65, 58, 46, 57, 49, 42, 61, 62, 61, 58, 73, 74, 67, 66, 79, 74, 84] 0

k\_1000 357

opm 59

the random choice case path in j60 ./rcpsp/j60.sm/j6042\_7.sm case j6042\_7.sm

v5 190 600.6844720840454 s [60, 79] 1.694915254237288 [0, 0, 0, 0, 6, 6, 10, 10, 12, 15, 16, 6, 13, 3, 18, 34, 23, 32, 23, 18, 10, 27, 32, 29, 32, 16, 27, 36, 21, 41, 32, 27, 33, 32, 46, 21, 35, 23, 29, 41, 48, 46, 41, 27, 49, 33, 41, 43, 36, 46, 45, 39, 51, 48, 50, 46, 42, 54, 49, 58, 56, 60] 0

k\_1000 358

opm 82

the random choice case path in j60 ./rcpsp/j60.sm/j6042\_8.sm case j6042\_8.sm

v5 70 396.06342792510986 s [82, 161] 0.0 [0, 0, 0, 0, 7, 8, 18, 12, 8, 8, 4, 22, 12, 19, 22, 25, 25, 1, 12, 25, 33, 35, 14, 25, 28, 38, 35, 4, 44, 45, 18, 25, 33, 45, 45, 36, 48, 32, 46, 46, 53, 61, 38, 48, 56, 45, 53, 64, 54, 62, 62, 68, 70, 70, 38, 70, 48, 53, 79, 71, 76, 82] 0

k\_1000 359

opm 71

the random choice case path in j60 ./rcpsp/j60.sm/j6042\_9.sm case j6042\_9.sm

v5 145 601.7775077819824 s [73, 205] 2.8169014084507045 [0, 0, 0, 0, 5, 3, 5, 7, 11, 12, 7, 19, 11, 11, 26, 20, 20, 24, 11, 33, 20, 29, 17, 28, 29, 12, 32, 37, 40, 28, 53, 12, 43, 28, 37, 32, 41, 37, 33, 50, 50, 44, 53, 57, 49, 38, 47, 47, 55, 54, 55, 60, 55, 53, 65, 58, 51, 62, 72, 66, 63, 73] 0

k\_1000 360

opm 108

the random choice case path in j60 ./rcpsp/j60.sm/j6043\_1.sm case j6043\_1.sm

v5 4 12.894200801849365 s [108, 157] 0.0 [0, 0, 0, 0, 8, 11, 8, 9, 16, 28, 17, 17, 15, 8, 17, 17, 23, 21, 18, 34, 25, 29, 32, 21, 26, 36, 37, 37, 26, 28, 31, 34, 34, 28, 29, 44, 41, 53, 37, 55, 44, 44, 45, 45, 53, 53, 47, 47, 61, 34, 69, 77, 49, 77, 78, 80, 61, 90, 77, 80, 99, 108] 0

k\_1000 361

opm 78

the random choice case path in j60 ./rcpsp/j60.sm/j6043\_10.sm case j6043\_10.sm

v5 1 4.202796220779419 s [78, 97] 0.0 [0, 0, 0, 0, 1, 7, 10, 10, 23, 7, 18, 9, 12, 20, 12, 13, 9, 20, 18, 8, 13, 20, 27, 27, 24, 24, 18, 12, 11, 27, 26, 24, 22, 33, 23, 33, 43, 52, 31, 31, 27, 38, 31, 43, 29, 44, 30, 33, 58, 63, 71, 37, 63, 45, 40, 29, 49, 40, 75, 57, 48, 78] 0

k\_1000 362

opm 85

the random choice case path in j60 ./rcpsp/j60.sm/j6043\_2.sm case j6043\_2.sm

v5 2 10.235689401626587 s [85, 198] 0.0 [0, 0, 0, 0, 6, 6, 6, 15, 13, 8, 8, 22, 11, 13, 15, 8, 22, 1, 11, 22, 28, 26, 22, 17, 33, 25, 35, 37, 38, 18, 25, 35, 44, 37, 45, 44, 27, 37, 37, 43, 54, 52, 54, 67, 60, 62, 42, 72, 40, 59, 49, 62, 57, 44, 72, 70, 57, 77, 81, 62, 73, 85] 0

k\_1000 363

opm 74

the random choice case path in j60 ./rcpsp/j60.sm/j6043\_3.sm case j6043\_3.sm

v5 2 6.078155994415283 s [74, 122] 0.0 [0, 0, 0, 0, 6, 10, 10, 14, 15, 23, 6, 22, 23, 15, 10, 17, 6, 12, 12, 13, 27, 10, 21, 6, 34, 31, 26, 32, 32, 21, 34, 31, 15, 17, 24, 27, 40, 38, 25, 30, 32, 47, 38, 32, 42, 42, 41, 56, 45, 46, 38, 45, 66, 47, 41, 66, 51, 56, 60, 71, 73, 74] 0

k\_1000 364

opm 75

the random choice case path in j60 ./rcpsp/j60.sm/j6043\_4.sm case j6043\_4.sm

v5 51 136.98056435585022 s [75, 75] 0.0 [0, 0, 0, 0, 10, 10, 4, 13, 10, 2, 2, 2, 4, 13, 16, 19, 19, 12, 22, 26, 21, 29, 21, 22, 11, 9, 29, 40, 31, 9, 27, 12, 39, 36, 36, 21, 21, 23, 34, 26, 32, 43, 39, 41, 47, 50, 28, 35, 45, 46, 34, 41, 48, 48, 53, 57, 55, 59, 55, 65, 57, 75] 0

k\_1000 365

opm 64

the random choice case path in j60 ./rcpsp/j60.sm/j6043\_5.sm case j6043\_5.sm

v5 1 2.793421745300293 s [64, 76] 0.0 [0, 0, 0, 0, 7, 5, 7, 8, 10, 10, 7, 9, 12, 16, 8, 10, 11, 9, 13, 15, 12, 11, 16, 25, 21, 16, 13, 19, 26, 13, 19, 25, 17, 29, 34, 37, 29, 26, 8, 21, 34, 26, 34, 33, 27, 36, 28, 30, 41, 37, 37, 43, 47, 47, 44, 53, 52, 48, 58, 57, 57, 64] 0

k\_1000 366

opm 84

the random choice case path in j60 ./rcpsp/j60.sm/j6043\_6.sm case j6043\_6.sm

v5 1 3.827094316482544 s [84, 84] 0.0 [0, 0, 0, 0, 9, 11, 11, 9, 19, 23, 11, 21, 17, 15, 26, 17, 29, 35, 17, 43, 24, 43, 19, 23, 19, 20, 47, 56, 31, 42, 24, 31, 40, 43, 26, 45, 29, 45, 40, 55, 62, 62, 9, 56, 69, 5, 74, 38, 43, 50, 71, 40, 55, 46, 42, 57, 65, 64, 79, 72, 66, 84] 0

k\_1000 367

opm 89

the random choice case path in j60 ./rcpsp/j60.sm/j6043\_7.sm case j6043\_7.sm

v5 1 7.778564691543579 s [89, 139] 0.0 [0, 0, 0, 0, 3, 12, 20, 22, 20, 7, 26, 3, 31, 7, 8, 32, 12, 31, 3, 41, 12, 50, 18, 54, 54, 21, 56, 7, 40, 22, 44, 38, 32, 56, 58, 40, 43, 50, 50, 54, 58, 51, 43, 45, 59, 68, 51, 64, 58, 68, 59, 68, 74, 72, 77, 79, 86, 64, 74, 87, 87, 89] 0

k\_1000 368

opm 69

the random choice case path in j60 ./rcpsp/j60.sm/j6043\_8.sm case j6043\_8.sm

v5 0 1.1542062759399414 s [69, 69] 0.0 [0, 0, 0, 0, 10, 1, 10, 13, 8, 4, 24, 18, 23, 13, 27, 34, 4, 19, 27, 10, 12, 27, 32, 29, 23, 39, 25, 22, 15, 12, 34, 19, 37, 39, 27, 20, 44, 48, 39, 49, 30, 57, 37, 35, 40, 58, 47, 51, 35, 62, 57, 47, 47, 48, 57, 64, 54, 62, 55, 51, 68, 69] 0

k\_1000 369

opm 70

the random choice case path in j60 ./rcpsp/j60.sm/j6043\_9.sm case j6043\_9.sm

v5 2 5.57739520072937 s [70, 98] 0.0 [0, 0, 0, 0, 9, 6, 10, 10, 1, 6, 9, 19, 10, 9, 20, 22, 1, 5, 19, 18, 10, 25, 10, 22, 9, 19, 26, 31, 31, 24, 23, 30, 22, 19, 30, 28, 30, 36, 38, 36, 31, 33, 37, 38, 44, 40, 49, 30, 28, 44, 48, 37, 38, 45, 45, 40, 59, 55, 55, 55, 64, 70] 0

k\_1000 370

opm 84

the random choice case path in j60 ./rcpsp/j60.sm/j6044\_1.sm case j6044\_1.sm

v5 0 0.6559333801269531 s [84, 84] 0.0 [0, 0, 0, 0, 8, 1, 1, 14, 14, 17, 9, 17, 3, 23, 23, 8, 24, 9, 17, 27, 13, 14, 10, 10, 7, 37, 19, 23, 27, 27, 45, 27, 19, 27, 22, 8, 37, 19, 37, 52, 41, 30, 58, 40, 37, 45, 42, 45, 41, 30, 43, 58, 30, 45, 65, 52, 58, 71, 75, 40, 54, 84] 0

k\_1000 371

opm 65

the random choice case path in j60 ./rcpsp/j60.sm/j6044\_10.sm case j6044\_10.sm

v5 0 0.7294785976409912 s [65, 86] 0.0 [0, 0, 0, 0, 6, 6, 6, 7, 5, 13, 8, 7, 13, 9, 7, 5, 16, 14, 21, 11, 9, 14, 25, 31, 9, 13, 15, 7, 10, 40, 14, 50, 11, 18, 23, 16, 14, 40, 14, 20, 23, 50, 21, 23, 23, 20, 25, 28, 51, 24, 35, 50, 53, 40, 45, 52, 42, 31, 56, 62, 47, 65] 0

k\_1000 372

opm 68

the random choice case path in j60 ./rcpsp/j60.sm/j6044\_2.sm case j6044\_2.sm

v5 0 0.6452116966247559 s [68, 68] 0.0 [0, 0, 0, 0, 2, 2, 2, 8, 7, 3, 3, 11, 3, 8, 6, 16, 15, 16, 8, 15, 12, 13, 17, 17, 26, 9, 25, 18, 26, 7, 20, 11, 25, 30, 12, 31, 26, 25, 26, 33, 33, 32, 39, 42, 34, 34, 42, 50, 45, 35, 39, 43, 43, 32, 51, 45, 40, 48, 61, 43, 53, 68] 0

k\_1000 373

opm 87

the random choice case path in j60 ./rcpsp/j60.sm/j6044\_3.sm case j6044\_3.sm

v5 0 0.9986739158630371 s [87, 106] 0.0 [0, 0, 0, 0, 3, 6, 3, 3, 6, 9, 12, 16, 26, 16, 12, 4, 14, 26, 26, 24, 12, 24, 16, 4, 36, 28, 4, 21, 30, 28, 38, 26, 17, 24, 36, 36, 26, 25, 35, 40, 26, 28, 45, 38, 40, 52, 45, 45, 61, 38, 52, 58, 67, 49, 64, 58, 51, 73, 67, 61, 80, 87] 0

k\_1000 374

opm 77

the random choice case path in j60 ./rcpsp/j60.sm/j6044\_4.sm case j6044\_4.sm

v5 0 0.7568264007568359 s [77, 77] 0.0 [0, 0, 0, 0, 5, 2, 5, 3, 11, 5, 14, 13, 13, 3, 3, 18, 2, 14, 22, 3, 22, 26, 34, 14, 14, 30, 14, 34, 18, 5, 12, 14, 37, 24, 26, 13, 29, 15, 32, 37, 38, 40, 50, 40, 38, 38, 51, 26, 50, 37, 59, 48, 46, 53, 40, 63, 59, 54, 64, 68, 58, 77] 0

k\_1000 375

opm 74

the random choice case path in j60 ./rcpsp/j60.sm/j6044\_5.sm case j6044\_5.sm

v5 0 0.6559123992919922 s [74, 111] 0.0 [0, 0, 0, 0, 9, 5, 5, 14, 5, 14, 9, 22, 12, 12, 15, 22, 12, 15, 17, 13, 23, 23, 30, 30, 15, 17, 38, 22, 31, 33, 33, 27, 38, 38, 33, 47, 39, 54, 48, 9, 39, 42, 42, 48, 50, 48, 55, 39, 44, 52, 52, 65, 56, 49, 62, 62, 51, 56, 65, 64, 66, 74] 0

k\_1000 376

opm 81

the random choice case path in j60 ./rcpsp/j60.sm/j6044\_6.sm case j6044\_6.sm

v5 0 0.7339673042297363 s [81, 81] 0.0 [0, 0, 0, 0, 9, 9, 9, 14, 19, 16, 18, 14, 19, 22, 22, 16, 18, 19, 3, 29, 29, 7, 21, 37, 44, 44, 14, 37, 20, 31, 24, 3, 21, 3, 51, 53, 19, 44, 33, 15, 23, 38, 53, 51, 38, 61, 33, 67, 19, 59, 60, 35, 60, 40, 60, 44, 61, 71, 80, 70, 57, 81] 0

k\_1000 377

opm 76

the random choice case path in j60 ./rcpsp/j60.sm/j6044\_7.sm case j6044\_7.sm

v5 0 0.6412398815155029 s [76, 76] 0.0 [0, 0, 0, 0, 4, 13, 4, 11, 13, 9, 5, 13, 14, 16, 13, 15, 17, 10, 9, 17, 14, 17, 17, 20, 18, 13, 11, 18, 23, 19, 14, 29, 29, 22, 15, 17, 26, 23, 22, 29, 18, 34, 38, 41, 23, 27, 21, 30, 33, 38, 48, 48, 30, 38, 35, 51, 35, 58, 39, 67, 46, 76] 0

k\_1000 378

opm 83

the random choice case path in j60 ./rcpsp/j60.sm/j6044\_8.sm case j6044\_8.sm

v5 0 0.9218480587005615 s [83, 115] 0.0 [0, 0, 0, 0, 8, 18, 8, 4, 5, 20, 16, 25, 5, 20, 9, 19, 30, 38, 16, 8, 5, 19, 8, 14, 38, 4, 8, 35, 45, 20, 30, 33, 30, 45, 39, 19, 48, 39, 55, 20, 8, 57, 24, 28, 48, 57, 60, 40, 31, 37, 57, 69, 48, 61, 77, 25, 46, 51, 78, 38, 77, 83] 0

k\_1000 379

opm 65

the random choice case path in j60 ./rcpsp/j60.sm/j6044\_9.sm case j6044\_9.sm

v5 0 0.8806185722351074 s [65, 65] 0.0 [0, 0, 0, 0, 6, 8, 8, 11, 11, 18, 27, 8, 18, 1, 18, 18, 10, 6, 28, 9, 28, 27, 25, 14, 9, 22, 18, 28, 20, 37, 20, 26, 25, 33, 35, 10, 43, 35, 39, 9, 33, 37, 17, 36, 27, 33, 36, 43, 37, 33, 45, 37, 40, 28, 39, 47, 48, 53, 52, 50, 58, 65] 0

k\_1000 380

opm 96

the random choice case path in j60 ./rcpsp/j60.sm/j6045\_1.sm case j6045\_1.sm

v5 49 601.1909739971161 s [99, 129] 3.125 [0, 0, 0, 0, 1, 2, 4, 9, 4, 20, 28, 16, 28, 16, 30, 46, 36, 46, 5, 52, 46, 10, 2, 20, 26, 26, 37, 36, 49, 51, 66, 74, 62, 76, 54, 10, 56, 42, 44, 49, 62, 9, 52, 56, 82, 64, 69, 69, 83, 63, 74, 94, 83, 90, 46, 67, 82, 84, 95, 93, 94, 99] 0

k\_1000 381

opm 114

the random choice case path in j60 ./rcpsp/j60.sm/j6045\_10.sm case j6045\_10.sm

v5 24 598.8160245418549 s [125, 142] 9.649122807017543 [0, 4, 0, 0, 3, 54, 4, 6, 15, 4, 19, 22, 32, 5, 19, 25, 39, 28, 40, 40, 33, 9, 14, 21, 32, 38, 19, 33, 65, 75, 27, 39, 48, 40, 43, 48, 28, 56, 64, 42, 69, 74, 49, 47, 69, 104, 92, 81, 75, 95, 84, 83, 92, 100, 84, 106, 100, 110, 113, 119, 119, 125] 0

k\_1000 382

opm 144

the random choice case path in j60 ./rcpsp/j60.sm/j6045\_2.sm case j6045\_2.sm

v5 19 595.7240836620331 s [153, 257] 6.25 [0, 0, 7, 0, 2, 3, 9, 25, 7, 28, 18, 33, 57, 39, 46, 48, 14, 36, 81, 33, 29, 39, 31, 55, 16, 57, 46, 39, 52, 63, 67, 48, 76, 89, 65, 104, 84, 100, 70, 100, 76, 19, 94, 121, 109, 89, 114, 109, 136, 119, 98, 123, 129, 119, 137, 136, 125, 126, 137, 145, 146, 153] 0

k\_1000 383

opm 143

the random choice case path in j60 ./rcpsp/j60.sm/j6045\_3.sm case j6045\_3.sm

v5 19 599.1230936050415 s [156, 306] 9.090909090909092 [0, 0, 1, 0, 8, 15, 22, 18, 8, 15, 22, 19, 22, 32, 41, 50, 19, 33, 55, 32, 61, 37, 96, 61, 55, 68, 31, 96, 37, 43, 46, 68, 55, 87, 78, 78, 97, 77, 105, 88, 102, 110, 119, 110, 128, 101, 119, 99, 42, 113, 112, 129, 132, 132, 134, 137, 142, 141, 148, 147, 137, 156] 0

k\_1000 384

opm 108

the random choice case path in j60 ./rcpsp/j60.sm/j6045\_4.sm case j6045\_4.sm

v5 38 594.3124005794525 s [115, 178] 6.481481481481481 [0, 0, 0, 9, 36, 3, 14, 19, 4, 4, 19, 24, 43, 36, 50, 28, 16, 40, 43, 25, 58, 31, 27, 28, 32, 48, 5, 10, 46, 37, 10, 64, 66, 73, 57, 65, 33, 36, 51, 78, 58, 76, 75, 82, 73, 72, 51, 40, 93, 74, 74, 88, 85, 98, 94, 102, 98, 94, 103, 109, 105, 115] 0

k\_1000 385

opm 106

the random choice case path in j60 ./rcpsp/j60.sm/j6045\_5.sm case j6045\_5.sm

v5 30 600.832111120224 s [116, 136] 9.433962264150944 [0, 0, 7, 0, 4, 22, 5, 19, 12, 35, 7, 12, 34, 8, 19, 30, 61, 73, 30, 16, 45, 39, 35, 37, 53, 22, 66, 45, 15, 86, 50, 25, 56, 78, 34, 26, 83, 39, 61, 46, 71, 72, 80, 93, 76, 65, 90, 102, 71, 56, 73, 99, 98, 105, 90, 111, 64, 102, 108, 113, 105, 116] 0

k\_1000 386

opm 144

the random choice case path in j60 ./rcpsp/j60.sm/j6045\_6.sm case j6045\_6.sm

v5 20 583.1794362068176 s [149, 162] 3.4722222222222223 [0, 0, 0, 0, 59, 9, 7, 36, 42, 9, 18, 64, 28, 39, 18, 28, 48, 25, 35, 64, 34, 39, 107, 49, 39, 2, 49, 54, 84, 92, 70, 79, 98, 56, 106, 97, 98, 114, 66, 84, 116, 79, 80, 90, 106, 122, 123, 97, 114, 76, 118, 117, 131, 133, 133, 114, 140, 131, 141, 141, 123, 149] 0

k\_1000 387

opm 122

the random choice case path in j60 ./rcpsp/j60.sm/j6045\_7.sm case j6045\_7.sm

v5 40 602.9214131832123 s [130, 302] 6.557377049180328 [0, 0, 0, 0, 17, 11, 8, 15, 24, 7, 24, 26, 62, 28, 70, 40, 35, 41, 70, 50, 50, 28, 63, 65, 56, 40, 32, 86, 50, 56, 52, 56, 86, 69, 74, 75, 58, 71, 80, 82, 90, 80, 90, 96, 101, 82, 97, 105, 109, 90, 96, 115, 106, 101, 109, 123, 100, 110, 123, 119, 124, 130] 0

k\_1000 388

opm 129

the random choice case path in j60 ./rcpsp/j60.sm/j6045\_8.sm case j6045\_8.sm

v5 29 591.7230019569397 s [136, 229] 5.426356589147287 [0, 0, 3, 0, 3, 47, 10, 3, 13, 25, 58, 9, 71, 38, 6, 17, 19, 31, 49, 16, 28, 26, 37, 28, 35, 41, 34, 41, 48, 56, 56, 64, 35, 49, 69, 58, 68, 82, 77, 77, 79, 87, 96, 89, 92, 99, 101, 113, 106, 104, 69, 92, 112, 118, 110, 108, 117, 125, 132, 128, 104, 136] 0

k\_1000 389

opm 123

the random choice case path in j60 ./rcpsp/j60.sm/j6045\_9.sm case j6045\_9.sm

v5 26 609.1726083755493 s [134, 203] 8.94308943089431 [0, 0, 0, 0, 10, 16, 16, 28, 6, 34, 18, 28, 28, 22, 45, 64, 64, 41, 74, 32, 49, 24, 43, 19, 53, 41, 84, 44, 92, 45, 29, 57, 76, 86, 73, 83, 54, 94, 100, 77, 103, 99, 77, 101, 103, 106, 97, 106, 116, 100, 66, 112, 120, 116, 114, 112, 120, 118, 122, 123, 129, 134] 0

k\_1000 390

opm 79

the random choice case path in j60 ./rcpsp/j60.sm/j6046\_1.sm case j6046\_1.sm

v5 115 601.0862791538239 s [84, 122] 6.329113924050633 [0, 0, 0, 0, 11, 5, 4, 11, 23, 2, 9, 24, 17, 5, 6, 31, 16, 6, 21, 11, 24, 22, 25, 25, 21, 11, 29, 38, 17, 35, 34, 32, 31, 32, 43, 38, 54, 41, 38, 46, 47, 47, 41, 7, 60, 38, 48, 54, 57, 62, 47, 48, 51, 52, 57, 59, 59, 67, 58, 66, 76, 84] 0

k\_1000 391

opm 88

the random choice case path in j60 ./rcpsp/j60.sm/j6046\_10.sm case j6046\_10.sm

v5 84 597.0555717945099 s [91, 278] 3.4090909090909087 [0, 0, 0, 0, 3, 7, 15, 12, 15, 23, 7, 28, 19, 13, 33, 29, 23, 33, 19, 13, 22, 24, 49, 4, 28, 38, 33, 37, 39, 52, 34, 55, 38, 45, 57, 35, 49, 56, 42, 51, 55, 68, 47, 47, 61, 66, 55, 62, 55, 72, 69, 69, 70, 76, 77, 79, 80, 79, 79, 83, 89, 91] 0

k\_1000 392

opm 78

the random choice case path in j60 ./rcpsp/j60.sm/j6046\_2.sm case j6046\_2.sm

v5 111 601.2086427211761 s [79, 137] 1.282051282051282 [0, 0, 0, 0, 7, 9, 10, 12, 12, 7, 20, 19, 9, 24, 23, 19, 19, 19, 19, 31, 12, 32, 42, 29, 24, 15, 31, 40, 48, 33, 31, 31, 32, 33, 42, 43, 38, 31, 42, 39, 42, 48, 25, 43, 65, 52, 45, 52, 52, 55, 60, 60, 57, 64, 70, 64, 70, 51, 64, 73, 71, 79] 0

k\_1000 393

opm 79

the random choice case path in j60 ./rcpsp/j60.sm/j6046\_3.sm case j6046\_3.sm

v5 92 602.6416237354279 s [85, 92] 7.59493670886076 [0, 0, 7, 0, 9, 9, 1, 10, 29, 11, 1, 36, 13, 41, 12, 2, 19, 17, 15, 28, 23, 21, 33, 23, 33, 30, 33, 38, 24, 43, 45, 36, 48, 39, 40, 43, 43, 59, 67, 52, 64, 24, 50, 77, 59, 69, 40, 66, 53, 50, 68, 69, 60, 76, 78, 53, 64, 74, 76, 80, 75, 85] 0

k\_1000 394

opm 74

the random choice case path in j60 ./rcpsp/j60.sm/j6046\_4.sm case j6046\_4.sm

v5 109 599.830075263977 s [78, 89] 5.405405405405405 [0, 0, 0, 0, 9, 9, 27, 8, 10, 6, 11, 18, 11, 27, 19, 18, 19, 18, 27, 39, 22, 34, 27, 23, 27, 31, 30, 23, 36, 42, 49, 52, 37, 59, 33, 52, 38, 49, 42, 47, 29, 38, 57, 65, 56, 56, 40, 66, 43, 37, 66, 47, 53, 58, 58, 63, 45, 67, 68, 73, 70, 78] 0

k\_1000 395

opm 91

the random choice case path in j60 ./rcpsp/j60.sm/j6046\_5.sm case j6046\_5.sm

v5 65 597.8612260818481 s [96, 157] 5.4945054945054945 [0, 0, 0, 0, 1, 8, 10, 4, 28, 15, 11, 4, 16, 20, 30, 19, 40, 36, 20, 42, 15, 30, 13, 22, 54, 42, 45, 44, 31, 41, 39, 49, 41, 51, 43, 69, 45, 54, 49, 33, 61, 53, 44, 46, 58, 55, 64, 66, 66, 65, 64, 66, 74, 76, 75, 80, 82, 75, 91, 87, 91, 96] 0

k\_1000 396

opm 90

the random choice case path in j60 ./rcpsp/j60.sm/j6046\_6.sm case j6046\_6.sm

v5 102 597.9753794670105 s [95, 108] 5.555555555555555 [0, 0, 0, 0, 10, 36, 10, 20, 14, 19, 9, 19, 28, 41, 28, 34, 17, 36, 44, 20, 52, 26, 40, 42, 30, 24, 36, 26, 20, 48, 72, 55, 48, 55, 49, 25, 47, 78, 30, 64, 54, 59, 61, 54, 65, 60, 67, 47, 59, 62, 84, 67, 66, 63, 72, 76, 81, 82, 79, 93, 86, 95] 0

k\_1000 397

opm 78

the random choice case path in j60 ./rcpsp/j60.sm/j6046\_7.sm case j6046\_7.sm

v5 130 599.467809677124 s [80, 108] 2.564102564102564 [0, 0, 0, 0, 1, 8, 24, 14, 8, 17, 14, 4, 23, 9, 16, 19, 5, 23, 32, 20, 24, 2, 23, 31, 16, 41, 5, 29, 14, 44, 29, 17, 43, 49, 57, 62, 49, 35, 57, 41, 20, 32, 40, 38, 33, 40, 50, 61, 55, 66, 54, 62, 56, 64, 69, 66, 70, 68, 73, 74, 75, 80] 0

k\_1000 398

opm 75

the random choice case path in j60 ./rcpsp/j60.sm/j6046\_8.sm case j6046\_8.sm

v5 115 602.0205206871033 s [77, 83] 2.666666666666667 [0, 0, 0, 0, 7, 5, 6, 7, 15, 12, 7, 13, 12, 15, 14, 12, 22, 23, 22, 35, 5, 26, 14, 34, 26, 17, 29, 31, 22, 35, 35, 43, 17, 15, 30, 26, 43, 45, 51, 39, 48, 50, 39, 26, 45, 58, 45, 58, 62, 66, 54, 64, 56, 48, 58, 68, 65, 65, 67, 75, 59, 77] 0

k\_1000 399

opm 69

the random choice case path in j60 ./rcpsp/j60.sm/j6046\_9.sm case j6046\_9.sm

v5 120 600.6494324207306 s [72, 126] 4.3478260869565215 [0, 0, 0, 0, 4, 13, 4, 6, 11, 11, 13, 6, 18, 18, 14, 11, 22, 32, 23, 13, 2, 23, 29, 34, 32, 12, 24, 33, 21, 24, 27, 35, 37, 37, 28, 43, 42, 46, 30, 44, 51, 41, 44, 44, 54, 55, 51, 48, 49, 55, 52, 54, 61, 53, 55, 58, 59, 61, 62, 67, 61, 72] 0

k\_1000 400

opm 75

the random choice case path in j60 ./rcpsp/j60.sm/j6047\_1.sm case j6047\_1.sm

v5 1 3.2491347789764404 s [75, 101] 0.0 [0, 0, 0, 0, 15, 2, 2, 8, 2, 4, 11, 11, 6, 4, 6, 15, 15, 11, 19, 17, 18, 8, 16, 24, 31, 32, 4, 32, 31, 29, 32, 18, 25, 34, 35, 29, 27, 25, 40, 10, 45, 32, 34, 42, 26, 34, 47, 28, 41, 50, 42, 45, 40, 59, 45, 55, 46, 61, 51, 67, 63, 75] 0

k\_1000 401

opm 66

the random choice case path in j60 ./rcpsp/j60.sm/j6047\_10.sm case j6047\_10.sm

v5 232 598.7861979007721 s [67, 67] 1.5151515151515151 [0, 0, 0, 0, 1, 5, 1, 9, 11, 9, 11, 11, 15, 13, 11, 23, 18, 18, 15, 21, 15, 9, 22, 14, 24, 23, 17, 33, 15, 26, 33, 9, 26, 24, 32, 30, 24, 28, 34, 38, 24, 39, 25, 28, 39, 39, 36, 44, 39, 39, 45, 43, 46, 55, 45, 42, 52, 41, 63, 59, 51, 67] 0

k\_1000 402

opm 66

the random choice case path in j60 ./rcpsp/j60.sm/j6047\_2.sm case j6047\_2.sm

v5 28 60.22622990608215 s [66, 87] 0.0 [0, 0, 0, 0, 7, 14, 7, 14, 14, 30, 15, 13, 23, 24, 13, 30, 18, 7, 21, 40, 25, 40, 26, 23, 21, 38, 29, 38, 29, 29, 30, 41, 30, 39, 18, 46, 32, 39, 49, 43, 5, 39, 34, 47, 49, 45, 39, 41, 25, 38, 53, 54, 44, 47, 57, 56, 59, 52, 65, 62, 57, 66] 0

k\_1000 403

opm 69

the random choice case path in j60 ./rcpsp/j60.sm/j6047\_3.sm case j6047\_3.sm

v5 78 221.8904848098755 s [69, 144] 0.0 [0, 0, 0, 0, 1, 9, 1, 4, 1, 2, 4, 10, 3, 14, 8, 12, 8, 12, 3, 14, 16, 10, 20, 20, 15, 27, 24, 14, 10, 22, 27, 24, 29, 30, 35, 25, 31, 25, 38, 33, 17, 40, 37, 48, 30, 35, 46, 49, 32, 43, 38, 43, 44, 33, 43, 51, 54, 57, 58, 62, 66, 69] 0

k\_1000 404

opm 76

the random choice case path in j60 ./rcpsp/j60.sm/j6047\_4.sm case j6047\_4.sm

v5 2 8.183434009552002 s [76, 76] 0.0 [0, 0, 0, 0, 22, 8, 11, 6, 1, 6, 11, 11, 12, 14, 17, 23, 17, 11, 11, 33, 16, 31, 16, 31, 36, 36, 38, 31, 46, 14, 41, 46, 23, 45, 41, 45, 25, 41, 22, 41, 48, 32, 48, 58, 58, 45, 54, 58, 67, 60, 55, 33, 43, 61, 68, 70, 67, 61, 66, 74, 70, 76] 0

k\_1000 405

opm 87

the random choice case path in j60 ./rcpsp/j60.sm/j6047\_5.sm case j6047\_5.sm

v5 16 62.17317509651184 s [87, 319] 0.0 [0, 0, 0, 0, 12, 3, 9, 11, 16, 16, 9, 16, 24, 17, 17, 28, 8, 24, 29, 11, 28, 34, 25, 32, 37, 21, 35, 44, 33, 36, 10, 39, 29, 37, 40, 35, 37, 49, 43, 49, 47, 43, 57, 47, 57, 43, 51, 52, 61, 52, 63, 53, 62, 72, 65, 54, 74, 62, 74, 72, 81, 87] 0

k\_1000 406

opm 76

the random choice case path in j60 ./rcpsp/j60.sm/j6047\_6.sm case j6047\_6.sm

v5 1 4.550676584243774 s [76, 85] 0.0 [0, 0, 0, 0, 2, 2, 6, 2, 10, 10, 12, 12, 17, 6, 19, 21, 19, 21, 6, 26, 12, 19, 12, 25, 5, 21, 27, 27, 28, 15, 13, 33, 35, 36, 42, 39, 27, 35, 52, 34, 25, 34, 34, 39, 42, 47, 44, 58, 43, 48, 42, 52, 56, 56, 11, 36, 53, 52, 62, 68, 62, 76] 0

k\_1000 407

opm 68

the random choice case path in j60 ./rcpsp/j60.sm/j6047\_7.sm case j6047\_7.sm

v5 18 44.93364477157593 s [68, 79] 0.0 [0, 0, 0, 0, 5, 7, 17, 6, 8, 17, 24, 21, 7, 7, 11, 17, 26, 28, 21, 8, 21, 16, 13, 13, 16, 23, 33, 26, 19, 26, 29, 33, 17, 23, 36, 31, 36, 43, 43, 41, 40, 48, 37, 43, 48, 48, 50, 33, 42, 48, 43, 45, 51, 51, 51, 61, 60, 57, 58, 57, 64, 68] 0

k\_1000 408

opm 71

the random choice case path in j60 ./rcpsp/j60.sm/j6047\_8.sm case j6047\_8.sm

v5 196 600.9681434631348 s [72, 156] 1.4084507042253522 [0, 0, 0, 0, 2, 4, 11, 13, 11, 19, 2, 23, 13, 17, 13, 16, 23, 26, 13, 2, 16, 19, 19, 29, 32, 19, 23, 32, 23, 28, 28, 32, 27, 41, 32, 41, 37, 37, 46, 36, 37, 42, 50, 40, 43, 44, 44, 44, 46, 46, 55, 54, 60, 50, 50, 55, 56, 56, 65, 63, 61, 72] 0

k\_1000 409

opm 76

the random choice case path in j60 ./rcpsp/j60.sm/j6047\_9.sm case j6047\_9.sm

v5 11 38.97776699066162 s [76, 99] 0.0 [0, 0, 0, 0, 8, 6, 9, 14, 8, 8, 16, 10, 14, 18, 18, 8, 26, 19, 27, 30, 18, 6, 14, 32, 24, 9, 5, 49, 5, 35, 21, 20, 21, 35, 9, 37, 28, 44, 25, 27, 35, 43, 27, 38, 38, 51, 38, 38, 27, 51, 44, 50, 58, 44, 42, 52, 58, 52, 60, 67, 68, 76] 0

k\_1000 410

opm 71

the random choice case path in j60 ./rcpsp/j60.sm/j6048\_1.sm case j6048\_1.sm

v5 0 0.8517262935638428 s [71, 93] 0.0 [0, 0, 0, 0, 10, 10, 10, 10, 7, 7, 12, 12, 7, 12, 18, 12, 14, 14, 16, 14, 12, 10, 14, 21, 21, 22, 25, 16, 8, 31, 28, 31, 16, 22, 28, 18, 32, 41, 26, 41, 37, 29, 51, 31, 25, 32, 28, 37, 37, 53, 37, 20, 36, 28, 41, 42, 38, 48, 62, 51, 37, 71] 0

k\_1000 411

opm 70

the random choice case path in j60 ./rcpsp/j60.sm/j6048\_10.sm case j6048\_10.sm

v5 0 0.7829358577728271 s [70, 70] 0.0 [0, 0, 0, 0, 1, 1, 1, 7, 8, 7, 7, 11, 9, 21, 9, 21, 21, 8, 5, 11, 14, 3, 22, 22, 25, 11, 18, 14, 29, 22, 14, 26, 31, 29, 29, 26, 26, 29, 31, 32, 13, 36, 38, 30, 36, 38, 32, 45, 38, 16, 39, 42, 51, 45, 42, 45, 52, 41, 62, 47, 49, 70] 0

k\_1000 412

opm 87

the random choice case path in j60 ./rcpsp/j60.sm/j6048\_2.sm case j6048\_2.sm

v5 0 0.8060503005981445 s [87, 87] 0.0 [0, 0, 0, 0, 4, 9, 7, 9, 12, 17, 13, 9, 4, 11, 13, 16, 16, 18, 22, 18, 13, 18, 17, 30, 12, 22, 18, 32, 24, 36, 18, 19, 21, 26, 32, 38, 28, 35, 28, 48, 34, 41, 38, 48, 21, 29, 44, 35, 38, 24, 57, 35, 57, 64, 19, 73, 40, 41, 62, 81, 45, 87] 0

k\_1000 413

opm 84

the random choice case path in j60 ./rcpsp/j60.sm/j6048\_3.sm case j6048\_3.sm

v5 0 0.8208456039428711 s [84, 101] 0.0 [0, 0, 0, 0, 7, 15, 9, 9, 9, 7, 15, 15, 25, 8, 13, 13, 7, 21, 13, 13, 22, 21, 21, 17, 26, 25, 28, 29, 27, 29, 27, 35, 37, 29, 21, 35, 17, 15, 35, 36, 28, 41, 29, 45, 39, 41, 48, 48, 39, 46, 46, 56, 36, 65, 36, 56, 75, 44, 57, 49, 82, 84] 0

k\_1000 414

opm 62

the random choice case path in j60 ./rcpsp/j60.sm/j6048\_4.sm case j6048\_4.sm

v5 0 0.7353546619415283 s [62, 88] 0.0 [0, 0, 0, 0, 4, 1, 1, 3, 11, 15, 9, 11, 3, 4, 16, 9, 11, 9, 1, 8, 10, 14, 15, 16, 20, 14, 12, 15, 29, 21, 11, 34, 17, 29, 27, 23, 44, 3, 20, 23, 23, 34, 33, 31, 33, 23, 30, 38, 40, 33, 34, 43, 44, 48, 43, 44, 49, 52, 55, 54, 55, 62] 0

k\_1000 415

opm 101

the random choice case path in j60 ./rcpsp/j60.sm/j6048\_5.sm case j6048\_5.sm

v5 0 1.27008056640625 s [101, 145] 0.0 [0, 0, 0, 0, 2, 3, 9, 2, 3, 3, 9, 9, 2, 19, 21, 10, 9, 5, 19, 17, 12, 23, 20, 7, 23, 23, 30, 33, 39, 39, 33, 30, 39, 42, 19, 52, 48, 55, 55, 60, 42, 41, 38, 47, 52, 29, 48, 60, 70, 60, 55, 59, 60, 60, 68, 77, 55, 84, 77, 70, 94, 101] 0

k\_1000 416

opm 66

the random choice case path in j60 ./rcpsp/j60.sm/j6048\_6.sm case j6048\_6.sm

v5 0 0.909512996673584 s [66, 66] 0.0 [0, 0, 0, 0, 3, 3, 9, 11, 9, 16, 10, 4, 18, 26, 3, 16, 12, 4, 33, 34, 11, 7, 33, 18, 19, 26, 42, 19, 7, 22, 26, 20, 17, 19, 18, 25, 33, 21, 41, 29, 32, 29, 34, 34, 41, 26, 37, 46, 37, 49, 50, 53, 56, 50, 37, 50, 52, 30, 62, 61, 40, 66] 0

k\_1000 417

opm 77

the random choice case path in j60 ./rcpsp/j60.sm/j6048\_7.sm case j6048\_7.sm

v5 0 0.8643825054168701 s [77, 84] 0.0 [0, 0, 0, 0, 4, 8, 4, 4, 8, 11, 11, 8, 13, 21, 13, 13, 21, 23, 11, 11, 15, 19, 23, 32, 23, 27, 30, 15, 32, 37, 30, 21, 42, 28, 34, 34, 42, 45, 37, 21, 26, 28, 37, 46, 45, 26, 46, 45, 50, 37, 42, 45, 50, 53, 46, 53, 60, 50, 69, 55, 60, 77] 0

k\_1000 418

opm 88

the random choice case path in j60 ./rcpsp/j60.sm/j6048\_8.sm case j6048\_8.sm

v5 0 1.0242316722869873 s [88, 96] 0.0 [0, 0, 0, 0, 4, 10, 3, 3, 3, 5, 12, 12, 16, 25, 19, 12, 25, 15, 33, 33, 11, 14, 17, 36, 33, 43, 11, 37, 37, 23, 31, 39, 39, 39, 45, 45, 53, 23, 45, 53, 49, 61, 50, 16, 51, 61, 27, 71, 14, 21, 61, 79, 25, 63, 55, 31, 45, 51, 67, 85, 56, 88] 0

k\_1000 419

opm 82

the random choice case path in j60 ./rcpsp/j60.sm/j6048\_9.sm case j6048\_9.sm

v5 0 0.7130100727081299 s [82, 82] 0.0 [0, 0, 0, 0, 2, 7, 2, 2, 11, 3, 3, 10, 4, 7, 10, 3, 4, 11, 13, 4, 4, 11, 20, 20, 21, 13, 22, 8, 12, 21, 18, 20, 18, 29, 21, 21, 31, 27, 36, 37, 30, 23, 36, 29, 23, 39, 46, 23, 19, 25, 31, 30, 31, 39, 40, 50, 59, 66, 46, 45, 74, 82] 0

k\_1000 420

opm 84

the random choice case path in j60 ./rcpsp/j60.sm/j604\_1.sm case j604\_1.sm

v5 0 0.8832199573516846 s [84, 127] 0.0 [0, 0, 0, 0, 7, 6, 16, 16, 16, 14, 20, 10, 6, 7, 25, 7, 31, 28, 17, 38, 11, 45, 17, 25, 10, 24, 24, 14, 24, 30, 18, 14, 12, 45, 40, 22, 27, 18, 45, 30, 43, 25, 51, 35, 49, 43, 10, 32, 28, 15, 52, 57, 40, 59, 67, 31, 48, 54, 76, 66, 57, 84] 0

k\_1000 421

opm 77

the random choice case path in j60 ./rcpsp/j60.sm/j604\_10.sm case j604\_10.sm

v5 0 1.2301533222198486 s [77, 77] 0.0 [0, 0, 0, 0, 9, 9, 2, 17, 20, 17, 27, 20, 19, 27, 17, 2, 28, 29, 36, 38, 30, 9, 38, 27, 18, 18, 27, 23, 12, 18, 28, 36, 9, 34, 32, 24, 12, 41, 29, 33, 27, 36, 26, 40, 43, 44, 36, 30, 38, 43, 40, 41, 49, 45, 57, 59, 66, 52, 73, 48, 66, 77] 0

k\_1000 422

opm 60

the random choice case path in j60 ./rcpsp/j60.sm/j604\_2.sm case j604\_2.sm

v5 0 1.2247271537780762 s [60, 86] 0.0 [0, 0, 0, 0, 2, 4, 5, 7, 8, 5, 8, 4, 7, 14, 8, 5, 10, 19, 17, 9, 15, 24, 14, 19, 15, 19, 7, 16, 16, 21, 21, 23, 26, 22, 23, 22, 29, 17, 35, 17, 29, 38, 30, 23, 22, 8, 40, 31, 40, 2, 17, 26, 32, 20, 32, 28, 35, 15, 34, 47, 50, 60] 0

k\_1000 423

opm 58

the random choice case path in j60 ./rcpsp/j60.sm/j604\_3.sm case j604\_3.sm

v5 0 1.00105881690979 s [58, 89] 0.0 [0, 0, 0, 0, 4, 6, 5, 4, 6, 5, 6, 12, 4, 8, 18, 12, 6, 9, 10, 5, 15, 12, 16, 6, 18, 19, 12, 25, 13, 6, 33, 15, 15, 18, 13, 21, 25, 10, 13, 22, 13, 24, 30, 16, 13, 15, 24, 19, 10, 43, 25, 13, 19, 30, 32, 27, 26, 37, 37, 51, 42, 58] 0

k\_1000 424

opm 65

the random choice case path in j60 ./rcpsp/j60.sm/j604\_4.sm case j604\_4.sm

v5 0 0.7042222023010254 s [65, 65] 0.0 [0, 0, 0, 0, 4, 6, 8, 4, 9, 14, 14, 21, 8, 19, 21, 29, 8, 12, 12, 22, 16, 16, 12, 19, 22, 32, 22, 29, 29, 7, 34, 29, 14, 18, 29, 5, 19, 25, 32, 25, 33, 32, 30, 12, 39, 39, 16, 42, 48, 50, 9, 38, 50, 54, 39, 37, 50, 57, 53, 55, 62, 65] 0

k\_1000 425

opm 75

the random choice case path in j60 ./rcpsp/j60.sm/j604\_5.sm case j604\_5.sm

v5 0 0.8227410316467285 s [75, 75] 0.0 [0, 0, 0, 0, 1, 1, 7, 10, 10, 18, 7, 10, 14, 7, 11, 1, 14, 19, 11, 22, 19, 24, 1, 29, 11, 20, 18, 23, 7, 19, 24, 7, 19, 29, 1, 6, 33, 22, 32, 36, 21, 29, 27, 28, 11, 33, 24, 40, 42, 37, 16, 44, 30, 52, 33, 28, 60, 42, 66, 66, 50, 75] 0

k\_1000 426

opm 71

the random choice case path in j60 ./rcpsp/j60.sm/j604\_6.sm case j604\_6.sm

v5 0 0.8262481689453125 s [71, 71] 0.0 [0, 0, 0, 0, 2, 9, 5, 16, 16, 2, 9, 3, 5, 18, 3, 9, 2, 16, 3, 21, 8, 9, 22, 11, 16, 27, 9, 5, 28, 18, 8, 9, 9, 21, 18, 7, 22, 29, 8, 15, 8, 21, 28, 24, 11, 22, 39, 39, 17, 24, 42, 28, 42, 51, 35, 53, 16, 24, 29, 62, 27, 71] 0

k\_1000 427

opm 67

the random choice case path in j60 ./rcpsp/j60.sm/j604\_7.sm case j604\_7.sm

v5 0 0.6063287258148193 s [67, 67] 0.0 [0, 0, 0, 0, 9, 11, 2, 4, 5, 12, 22, 12, 4, 22, 22, 5, 9, 3, 5, 9, 12, 2, 11, 9, 11, 9, 15, 31, 4, 18, 13, 22, 9, 13, 16, 18, 9, 20, 26, 26, 13, 29, 36, 37, 20, 40, 30, 29, 31, 22, 28, 40, 50, 25, 22, 59, 50, 36, 49, 56, 62, 67] 0

k\_1000 428

opm 65

the random choice case path in j60 ./rcpsp/j60.sm/j604\_8.sm case j604\_8.sm

v5 0 0.8194582462310791 s [65, 110] 0.0 [0, 0, 0, 0, 4, 4, 3, 7, 7, 4, 7, 12, 14, 7, 23, 14, 5, 13, 3, 25, 11, 14, 14, 10, 19, 25, 13, 14, 12, 14, 1, 3, 24, 13, 18, 21, 24, 18, 27, 12, 24, 13, 7, 33, 19, 33, 19, 22, 33, 23, 34, 28, 36, 33, 42, 33, 43, 49, 41, 37, 56, 65] 0

k\_1000 429

opm 75

the random choice case path in j60 ./rcpsp/j60.sm/j604\_9.sm case j604\_9.sm

v5 0 0.910536527633667 s [75, 75] 0.0 [0, 0, 0, 0, 7, 14, 7, 7, 9, 16, 16, 16, 14, 1, 14, 14, 17, 15, 14, 1, 17, 20, 23, 20, 30, 19, 17, 7, 17, 20, 26, 6, 26, 26, 7, 23, 34, 17, 28, 30, 14, 29, 28, 38, 48, 54, 18, 29, 59, 14, 24, 48, 30, 26, 37, 52, 35, 41, 67, 35, 57, 75] 0

k\_1000 430

opm 76

the random choice case path in j60 ./rcpsp/j60.sm/j605\_1.sm case j605\_1.sm

v5 46 602.8155648708344 s [81, 92] 6.578947368421052 [0, 0, 0, 0, 15, 6, 17, 15, 20, 7, 17, 17, 15, 31, 21, 7, 18, 20, 36, 26, 21, 42, 12, 32, 45, 36, 56, 33, 44, 42, 26, 45, 49, 63, 12, 30, 30, 40, 21, 53, 32, 57, 45, 28, 44, 2, 51, 49, 36, 61, 22, 58, 61, 51, 54, 70, 71, 61, 64, 74, 67, 81] 0

k\_1000 431

opm 81

the random choice case path in j60 ./rcpsp/j60.sm/j605\_10.sm case j605\_10.sm

v5 26 603.7834558486938 s [91, 422] 12.345679012345679 [0, 0, 0, 0, 10, 8, 8, 9, 6, 42, 62, 13, 21, 13, 34, 20, 19, 30, 10, 6, 25, 13, 40, 22, 30, 35, 44, 35, 25, 22, 11, 42, 52, 46, 13, 48, 22, 32, 43, 59, 44, 40, 48, 48, 64, 61, 68, 44, 71, 54, 78, 64, 59, 71, 53, 65, 62, 80, 88, 86, 76, 91] 0

k\_1000 432

opm 106

the random choice case path in j60 ./rcpsp/j60.sm/j605\_2.sm case j605\_2.sm

v5 29 604.5589883327484 s [112, 136] 5.660377358490567 [0, 0, 0, 15, 5, 5, 23, 5, 5, 15, 24, 32, 36, 30, 10, 10, 47, 32, 1, 36, 78, 19, 44, 81, 4, 5, 39, 39, 41, 46, 57, 44, 71, 19, 19, 54, 67, 54, 23, 23, 10, 57, 64, 30, 78, 65, 57, 88, 68, 78, 84, 96, 82, 26, 64, 86, 94, 78, 95, 104, 46, 112] 0

k\_1000 433

opm 80

the random choice case path in j60 ./rcpsp/j60.sm/j605\_3.sm case j605\_3.sm

v5 52 603.0772023200989 s [85, 118] 6.25 [0, 4, 0, 0, 9, 19, 4, 4, 11, 16, 11, 18, 24, 27, 4, 6, 36, 31, 34, 34, 27, 16, 5, 5, 17, 25, 37, 39, 25, 46, 9, 56, 39, 18, 34, 37, 59, 37, 6, 45, 46, 31, 36, 49, 58, 68, 56, 49, 46, 59, 69, 27, 59, 50, 67, 65, 67, 72, 61, 80, 77, 85] 0

k\_1000 434

opm 72

the random choice case path in j60 ./rcpsp/j60.sm/j605\_4.sm case j605\_4.sm

v5 35 591.8978817462921 s [78, 157] 8.333333333333332 [0, 44, 0, 0, 9, 11, 11, 12, 16, 21, 19, 11, 11, 9, 11, 12, 2, 18, 37, 4, 2, 21, 37, 26, 27, 12, 27, 18, 14, 24, 42, 52, 21, 31, 36, 35, 35, 52, 5, 27, 26, 63, 19, 45, 45, 37, 26, 58, 21, 51, 37, 46, 55, 49, 63, 61, 66, 71, 76, 63, 70, 78] 0

k\_1000 435

opm 108

the random choice case path in j60 ./rcpsp/j60.sm/j605\_5.sm case j605\_5.sm

v5 42 606.4293904304504 s [117, 141] 8.333333333333332 [0, 0, 0, 0, 7, 16, 14, 7, 53, 21, 3, 21, 9, 5, 31, 37, 14, 23, 37, 35, 16, 33, 31, 41, 31, 23, 51, 53, 49, 28, 24, 41, 39, 68, 53, 41, 53, 77, 58, 68, 63, 79, 77, 85, 28, 97, 79, 89, 84, 35, 87, 88, 74, 97, 87, 33, 84, 97, 106, 107, 115, 117] 0

k\_1000 436

opm 74

the random choice case path in j60 ./rcpsp/j60.sm/j605\_6.sm case j605\_6.sm

v5 47 599.0137360095978 s [76, 113] 2.7027027027027026 [0, 0, 0, 0, 3, 9, 11, 9, 10, 18, 19, 29, 11, 10, 13, 11, 3, 9, 4, 26, 13, 4, 17, 24, 15, 26, 10, 15, 29, 35, 31, 14, 15, 41, 20, 24, 31, 33, 45, 49, 49, 42, 35, 63, 53, 28, 52, 24, 27, 24, 40, 53, 41, 50, 53, 61, 58, 53, 63, 64, 70, 76] 0

k\_1000 437

opm 75

the random choice case path in j60 ./rcpsp/j60.sm/j605\_7.sm case j605\_7.sm

v5 40 592.5571546554565 s [81, 132] 8.0 [0, 0, 0, 0, 6, 5, 12, 8, 8, 19, 13, 36, 9, 25, 20, 42, 45, 20, 36, 9, 42, 25, 25, 31, 53, 49, 36, 31, 12, 12, 42, 13, 28, 28, 45, 20, 20, 51, 44, 59, 58, 44, 48, 65, 66, 72, 59, 52, 58, 63, 57, 65, 66, 67, 68, 63, 77, 66, 68, 80, 72, 81] 0

k\_1000 438

opm 78

the random choice case path in j60 ./rcpsp/j60.sm/j605\_8.sm case j605\_8.sm

v5 36 534.5230407714844 s [78, 88] 0.0 [0, 15, 0, 0, 10, 11, 4, 4, 15, 10, 4, 20, 22, 10, 21, 20, 32, 32, 20, 32, 32, 20, 37, 38, 55, 61, 46, 23, 29, 31, 58, 39, 61, 9, 38, 39, 49, 39, 46, 44, 11, 56, 56, 45, 44, 28, 49, 56, 14, 66, 45, 57, 58, 64, 64, 63, 38, 74, 67, 70, 75, 78] 0

k\_1000 439

opm 83

the random choice case path in j60 ./rcpsp/j60.sm/j605\_9.sm case j605\_9.sm

v5 40 592.3941209316254 s [88, 166] 6.024096385542169 [0, 0, 2, 0, 2, 37, 8, 18, 14, 2, 8, 12, 22, 22, 29, 22, 39, 17, 28, 14, 14, 8, 52, 14, 27, 2, 18, 21, 38, 18, 19, 34, 54, 59, 67, 62, 44, 57, 20, 51, 19, 54, 46, 37, 52, 51, 54, 37, 59, 60, 44, 59, 65, 71, 72, 67, 68, 75, 72, 73, 82, 88] 0

k\_1000 440

opm 60

the random choice case path in j60 ./rcpsp/j60.sm/j606\_1.sm case j606\_1.sm

v5 20 69.0615701675415 s [60, 82] 0.0 [0, 0, 0, 0, 9, 13, 19, 9, 5, 18, 11, 5, 29, 28, 18, 7, 29, 19, 5, 25, 29, 19, 7, 5, 19, 13, 9, 17, 7, 23, 13, 18, 13, 28, 28, 30, 5, 25, 17, 30, 27, 34, 34, 36, 36, 37, 41, 30, 43, 39, 50, 29, 36, 55, 43, 51, 44, 45, 52, 57, 39, 60] 0

k\_1000 441

opm 74

the random choice case path in j60 ./rcpsp/j60.sm/j606\_10.sm case j606\_10.sm

v5 3 20.986148357391357 s [74, 87] 0.0 [0, 0, 0, 0, 8, 10, 17, 2, 10, 36, 12, 2, 2, 19, 19, 29, 16, 27, 9, 9, 27, 11, 30, 4, 13, 12, 10, 30, 8, 30, 12, 17, 26, 4, 43, 49, 28, 13, 30, 29, 36, 32, 36, 32, 24, 36, 28, 59, 24, 14, 36, 46, 37, 53, 43, 12, 46, 61, 52, 49, 66, 74] 0

k\_1000 442

opm 67

the random choice case path in j60 ./rcpsp/j60.sm/j606\_2.sm case j606\_2.sm

v5 201 601.7692975997925 s [71, 112] 5.970149253731343 [0, 0, 0, 0, 15, 8, 8, 18, 12, 7, 8, 7, 16, 25, 24, 16, 24, 23, 12, 16, 16, 15, 16, 29, 37, 20, 15, 24, 37, 20, 20, 25, 15, 33, 30, 25, 33, 41, 41, 51, 34, 43, 27, 34, 44, 44, 46, 50, 41, 46, 54, 51, 44, 37, 47, 57, 46, 60, 50, 67, 66, 71] 0

k\_1000 443

opm 72

the random choice case path in j60 ./rcpsp/j60.sm/j606\_3.sm case j606\_3.sm

v5 5 18.728460788726807 s [72, 73] 0.0 [0, 0, 0, 0, 5, 8, 8, 10, 10, 11, 13, 17, 21, 17, 26, 3, 23, 8, 9, 9, 11, 13, 13, 12, 29, 18, 37, 26, 43, 11, 21, 9, 27, 30, 26, 30, 30, 29, 37, 37, 27, 42, 46, 43, 43, 19, 43, 15, 12, 26, 51, 51, 53, 59, 26, 46, 56, 57, 65, 63, 3, 72] 0

k\_1000 444

opm 67

the random choice case path in j60 ./rcpsp/j60.sm/j606\_4.sm case j606\_4.sm

v5 72 597.6563150882721 s [68, 159] 1.4925373134328357 [0, 0, 0, 0, 9, 14, 10, 14, 20, 1, 1, 1, 22, 10, 32, 22, 19, 34, 9, 20, 19, 42, 14, 38, 40, 32, 20, 34, 22, 31, 16, 20, 29, 28, 33, 40, 38, 16, 46, 48, 32, 36, 40, 51, 45, 33, 41, 39, 31, 51, 46, 42, 44, 52, 51, 53, 58, 58, 59, 53, 61, 68] 0

k\_1000 445

opm 78

the random choice case path in j60 ./rcpsp/j60.sm/j606\_5.sm case j606\_5.sm

v5 1 11.532119750976562 s [78, 117] 0.0 [0, 0, 0, 0, 7, 9, 11, 9, 18, 11, 7, 10, 16, 11, 16, 18, 18, 28, 25, 16, 25, 19, 19, 33, 37, 21, 17, 25, 48, 17, 19, 43, 38, 25, 37, 25, 34, 48, 38, 33, 27, 30, 25, 40, 43, 47, 48, 55, 43, 40, 58, 58, 64, 33, 28, 55, 63, 67, 67, 69, 72, 78] 0

k\_1000 446

opm 55

the random choice case path in j60 ./rcpsp/j60.sm/j606\_6.sm case j606\_6.sm

v5 84 599.7705819606781 s [60, 82] 9.090909090909092 [0, 0, 0, 0, 5, 7, 9, 12, 18, 9, 10, 10, 10, 16, 16, 12, 20, 11, 24, 13, 33, 24, 7, 17, 12, 18, 30, 16, 18, 38, 14, 25, 26, 21, 20, 23, 29, 21, 13, 35, 21, 38, 28, 24, 20, 21, 32, 39, 28, 28, 35, 35, 48, 41, 21, 35, 48, 33, 50, 50, 54, 60] 0

k\_1000 447

opm 61

the random choice case path in j60 ./rcpsp/j60.sm/j606\_7.sm case j606\_7.sm

v5 105 598.5802571773529 s [63, 85] 3.278688524590164 [0, 0, 0, 0, 11, 8, 8, 17, 11, 18, 17, 5, 19, 28, 17, 5, 30, 9, 19, 9, 25, 29, 20, 25, 21, 11, 34, 15, 22, 9, 30, 38, 46, 30, 34, 28, 25, 14, 35, 14, 22, 54, 30, 20, 32, 41, 38, 38, 38, 37, 43, 42, 23, 42, 29, 42, 50, 51, 59, 61, 49, 63] 0

k\_1000 448

opm 72

the random choice case path in j60 ./rcpsp/j60.sm/j606\_8.sm case j606\_8.sm

v5 83 560.3829023838043 s [72, 138] 0.0 [0, 0, 0, 0, 4, 4, 4, 4, 8, 12, 12, 12, 4, 5, 25, 20, 21, 20, 20, 32, 16, 16, 26, 10, 28, 12, 11, 10, 20, 20, 25, 35, 27, 29, 29, 11, 34, 39, 34, 28, 40, 17, 21, 26, 28, 35, 40, 41, 34, 32, 41, 41, 50, 46, 36, 49, 60, 53, 63, 49, 62, 72] 0

k\_1000 449

opm 64

the random choice case path in j60 ./rcpsp/j60.sm/j606\_9.sm case j606\_9.sm

v5 13 65.14402747154236 s [64, 83] 0.0 [0, 0, 0, 0, 4, 8, 10, 6, 8, 9, 13, 21, 9, 21, 6, 22, 16, 25, 10, 10, 21, 11, 29, 25, 15, 4, 12, 11, 26, 11, 15, 10, 19, 29, 37, 25, 28, 19, 29, 31, 38, 4, 46, 31, 31, 41, 31, 22, 52, 31, 11, 38, 20, 34, 40, 46, 32, 48, 41, 54, 55, 64] 0

k\_1000 450

opm 77

the random choice case path in j60 ./rcpsp/j60.sm/j607\_1.sm case j607\_1.sm

v5 1 3.355226516723633 s [77, 87] 0.0 [0, 0, 0, 0, 3, 13, 3, 9, 10, 9, 3, 19, 15, 18, 18, 18, 12, 9, 6, 12, 19, 9, 26, 19, 12, 12, 26, 17, 19, 23, 11, 26, 31, 31, 13, 10, 36, 36, 11, 21, 27, 29, 40, 38, 31, 21, 30, 36, 48, 19, 43, 49, 58, 62, 43, 67, 44, 46, 73, 67, 49, 77] 0

k\_1000 451

opm 82

the random choice case path in j60 ./rcpsp/j60.sm/j607\_10.sm case j607\_10.sm

v5 1 3.2601051330566406 s [82, 82] 0.0 [0, 0, 0, 0, 9, 10, 15, 20, 22, 20, 15, 8, 16, 8, 18, 10, 21, 18, 9, 18, 18, 26, 33, 26, 15, 22, 34, 25, 8, 22, 32, 44, 15, 25, 23, 18, 48, 35, 15, 18, 34, 41, 35, 28, 44, 25, 15, 45, 54, 44, 36, 44, 30, 54, 33, 63, 44, 69, 52, 73, 56, 82] 0

k\_1000 452

opm 85

the random choice case path in j60 ./rcpsp/j60.sm/j607\_2.sm case j607\_2.sm

v5 0 2.151679515838623 s [85, 133] 0.0 [0, 0, 0, 0, 10, 10, 14, 19, 10, 15, 20, 15, 18, 22, 23, 24, 14, 19, 10, 24, 8, 17, 23, 22, 29, 22, 14, 12, 24, 24, 23, 32, 41, 34, 15, 10, 26, 20, 34, 36, 26, 30, 38, 37, 37, 26, 37, 16, 26, 40, 40, 21, 42, 52, 49, 58, 67, 49, 77, 56, 52, 85] 0

k\_1000 453

opm 62

the random choice case path in j60 ./rcpsp/j60.sm/j607\_3.sm case j607\_3.sm

v5 1 3.1041970252990723 s [62, 68] 0.0 [0, 0, 0, 0, 4, 4, 4, 5, 5, 7, 4, 11, 11, 4, 6, 20, 4, 5, 7, 13, 13, 11, 19, 18, 13, 19, 11, 20, 16, 7, 25, 16, 31, 28, 24, 16, 26, 20, 28, 12, 38, 33, 15, 36, 43, 32, 23, 36, 20, 19, 5, 15, 24, 26, 36, 38, 28, 47, 54, 38, 45, 62] 0

k\_1000 454

opm 63

the random choice case path in j60 ./rcpsp/j60.sm/j607\_4.sm case j607\_4.sm

v5 2 6.054338693618774 s [63, 83] 0.0 [0, 0, 0, 0, 8, 7, 5, 12, 11, 15, 7, 12, 15, 15, 8, 8, 11, 12, 21, 8, 16, 16, 17, 17, 16, 32, 22, 21, 21, 16, 21, 30, 22, 20, 16, 23, 30, 8, 27, 40, 29, 17, 7, 22, 31, 13, 49, 41, 22, 52, 38, 42, 25, 54, 49, 32, 51, 20, 54, 61, 45, 63] 0

k\_1000 455

opm 71

the random choice case path in j60 ./rcpsp/j60.sm/j607\_5.sm case j607\_5.sm

v5 0 0.7215549945831299 s [71, 71] 0.0 [0, 0, 0, 0, 2, 2, 6, 6, 4, 2, 3, 4, 10, 4, 4, 11, 5, 10, 3, 3, 14, 12, 16, 20, 13, 21, 25, 27, 19, 27, 19, 5, 20, 23, 23, 36, 6, 37, 36, 23, 37, 41, 32, 44, 39, 11, 44, 44, 26, 47, 49, 55, 30, 11, 34, 47, 55, 53, 58, 61, 53, 71] 0

k\_1000 456

opm 65

the random choice case path in j60 ./rcpsp/j60.sm/j607\_6.sm case j607\_6.sm

v5 1 4.708949565887451 s [65, 66] 0.0 [0, 0, 0, 0, 10, 12, 13, 10, 21, 10, 21, 11, 13, 21, 11, 13, 35, 22, 15, 24, 22, 12, 26, 27, 33, 14, 26, 22, 26, 34, 15, 27, 35, 30, 42, 2, 15, 22, 15, 38, 24, 42, 35, 24, 30, 33, 46, 46, 38, 42, 11, 27, 10, 22, 49, 38, 46, 52, 46, 60, 55, 65] 0

k\_1000 457

opm 89

the random choice case path in j60 ./rcpsp/j60.sm/j607\_7.sm case j607\_7.sm

v5 1 4.333695411682129 s [89, 117] 0.0 [0, 0, 0, 0, 8, 2, 10, 6, 8, 11, 2, 6, 11, 6, 10, 20, 8, 17, 9, 19, 6, 20, 12, 19, 30, 9, 12, 18, 11, 13, 38, 19, 28, 12, 18, 19, 28, 38, 26, 27, 33, 38, 44, 52, 26, 52, 28, 34, 35, 36, 28, 41, 46, 36, 61, 41, 67, 76, 47, 85, 62, 89] 0

k\_1000 458

opm 66

the random choice case path in j60 ./rcpsp/j60.sm/j607\_8.sm case j607\_8.sm

v5 1 3.604893684387207 s [66, 90] 0.0 [0, 0, 0, 0, 8, 4, 8, 10, 8, 10, 19, 18, 21, 9, 21, 19, 27, 9, 18, 9, 28, 23, 33, 24, 22, 23, 32, 23, 36, 22, 25, 32, 22, 27, 19, 32, 19, 33, 36, 28, 38, 25, 39, 29, 41, 32, 39, 45, 41, 28, 39, 45, 45, 45, 55, 8, 23, 55, 37, 49, 61, 66] 0

k\_1000 459

opm 44

the random choice case path in j60 ./rcpsp/j60.sm/j607\_9.sm case j607\_9.sm

v5 5 10.594510555267334 s [44, 71] 0.0 [0, 0, 0, 0, 2, 2, 4, 6, 12, 13, 4, 9, 11, 13, 13, 14, 15, 15, 13, 17, 17, 4, 9, 9, 26, 17, 22, 15, 14, 14, 19, 20, 9, 23, 14, 17, 19, 17, 22, 23, 29, 14, 17, 32, 22, 23, 25, 30, 29, 36, 39, 19, 23, 20, 23, 25, 28, 33, 40, 37, 37, 44] 0

k\_1000 460

opm 64

the random choice case path in j60 ./rcpsp/j60.sm/j608\_1.sm case j608\_1.sm

v5 0 0.7310349941253662 s [64, 64] 0.0 [0, 0, 0, 0, 5, 10, 10, 12, 5, 10, 10, 10, 19, 10, 13, 12, 23, 10, 23, 23, 5, 18, 30, 40, 13, 11, 13, 21, 13, 13, 43, 13, 10, 45, 18, 40, 49, 18, 57, 28, 23, 31, 40, 7, 30, 19, 28, 11, 30, 47, 12, 49, 39, 50, 11, 30, 55, 59, 55, 63, 59, 64] 0

k\_1000 461

opm 97

the random choice case path in j60 ./rcpsp/j60.sm/j608\_10.sm case j608\_10.sm

v5 0 1.1039495468139648 s [97, 134] 0.0 [0, 0, 0, 0, 9, 14, 19, 14, 24, 29, 19, 14, 29, 10, 32, 34, 34, 23, 32, 9, 9, 9, 19, 35, 38, 29, 42, 37, 36, 42, 42, 44, 37, 50, 58, 44, 24, 37, 35, 44, 36, 36, 45, 48, 52, 39, 55, 46, 44, 59, 65, 52, 24, 52, 64, 74, 54, 83, 58, 60, 93, 97] 0

k\_1000 462

opm 61

the random choice case path in j60 ./rcpsp/j60.sm/j608\_2.sm case j608\_2.sm

v5 0 0.7463772296905518 s [61, 101] 0.0 [0, 0, 0, 0, 8, 9, 19, 9, 4, 8, 4, 15, 18, 4, 18, 14, 12, 18, 12, 14, 19, 19, 17, 19, 9, 17, 17, 19, 22, 23, 21, 28, 24, 30, 21, 21, 36, 22, 28, 30, 30, 37, 24, 19, 21, 5, 29, 30, 33, 32, 41, 30, 22, 40, 43, 40, 48, 41, 51, 56, 52, 61] 0

k\_1000 463

opm 79

the random choice case path in j60 ./rcpsp/j60.sm/j608\_3.sm case j608\_3.sm

v5 0 1.0061044692993164 s [79, 93] 0.0 [0, 0, 0, 0, 8, 8, 8, 2, 8, 8, 2, 16, 15, 24, 31, 31, 32, 11, 32, 10, 15, 35, 39, 39, 2, 42, 16, 16, 21, 22, 39, 21, 48, 5, 22, 31, 46, 32, 24, 54, 16, 54, 62, 21, 56, 46, 64, 56, 35, 16, 24, 47, 63, 24, 46, 68, 48, 50, 62, 65, 75, 79] 0

k\_1000 464

opm 64

the random choice case path in j60 ./rcpsp/j60.sm/j608\_4.sm case j608\_4.sm

v5 0 0.6140623092651367 s [64, 64] 0.0 [0, 0, 0, 0, 7, 9, 14, 14, 14, 17, 9, 7, 18, 20, 17, 18, 16, 26, 27, 26, 19, 17, 27, 26, 15, 33, 9, 35, 26, 8, 26, 34, 41, 44, 19, 30, 27, 19, 27, 7, 30, 35, 29, 31, 16, 34, 50, 20, 32, 44, 38, 52, 41, 34, 46, 55, 51, 56, 60, 55, 61, 64] 0

k\_1000 465

opm 83

the random choice case path in j60 ./rcpsp/j60.sm/j608\_5.sm case j608\_5.sm

v5 0 0.7541370391845703 s [83, 119] 0.0 [0, 0, 0, 0, 10, 10, 9, 14, 11, 21, 11, 9, 21, 22, 22, 18, 31, 9, 24, 10, 14, 9, 15, 18, 21, 16, 18, 22, 31, 32, 37, 37, 15, 9, 11, 42, 25, 43, 20, 38, 43, 20, 11, 43, 47, 20, 38, 49, 31, 32, 36, 52, 24, 58, 42, 34, 29, 66, 60, 40, 76, 83] 0

k\_1000 466

opm 56

the random choice case path in j60 ./rcpsp/j60.sm/j608\_6.sm case j608\_6.sm

v5 0 0.7523314952850342 s [56, 56] 0.0 [0, 0, 0, 0, 10, 17, 17, 3, 27, 18, 18, 18, 20, 10, 25, 21, 27, 25, 17, 8, 8, 24, 20, 31, 31, 3, 25, 17, 31, 27, 13, 16, 16, 35, 10, 34, 21, 22, 30, 8, 34, 33, 20, 13, 39, 40, 16, 17, 41, 46, 18, 33, 27, 39, 48, 42, 45, 27, 52, 54, 47, 56] 0

k\_1000 467

opm 62

the random choice case path in j60 ./rcpsp/j60.sm/j608\_7.sm case j608\_7.sm

v5 0 0.8334085941314697 s [62, 87] 0.0 [0, 0, 0, 0, 1, 4, 2, 6, 4, 4, 14, 11, 21, 14, 21, 6, 21, 23, 27, 2, 18, 1, 5, 6, 11, 8, 27, 30, 13, 18, 18, 23, 28, 27, 2, 29, 36, 18, 18, 38, 37, 13, 18, 39, 20, 28, 34, 24, 27, 20, 24, 42, 37, 18, 37, 41, 51, 30, 61, 46, 44, 62] 0

k\_1000 468

opm 66

the random choice case path in j60 ./rcpsp/j60.sm/j608\_8.sm case j608\_8.sm

v5 0 0.7654378414154053 s [66, 75] 0.0 [0, 0, 0, 0, 7, 12, 6, 6, 6, 18, 11, 7, 14, 14, 7, 23, 11, 17, 11, 14, 21, 23, 21, 13, 13, 7, 15, 15, 17, 27, 21, 23, 30, 33, 16, 28, 22, 7, 35, 21, 30, 14, 9, 26, 10, 23, 30, 23, 22, 38, 44, 38, 47, 47, 12, 56, 42, 38, 59, 29, 59, 66] 0

k\_1000 469

opm 58

the random choice case path in j60 ./rcpsp/j60.sm/j608\_9.sm case j608\_9.sm

v5 0 0.707655668258667 s [58, 58] 0.0 [0, 0, 0, 0, 1, 2, 5, 4, 5, 4, 4, 5, 1, 1, 8, 5, 5, 5, 2, 7, 12, 12, 5, 8, 5, 18, 15, 5, 13, 13, 18, 13, 9, 7, 17, 23, 10, 20, 20, 13, 9, 9, 26, 12, 20, 34, 15, 20, 31, 23, 13, 23, 38, 40, 25, 26, 33, 39, 46, 39, 49, 58] 0

k\_1000 470

opm 82

the random choice case path in j60 ./rcpsp/j60.sm/j609\_1.sm case j609\_1.sm

v5 24 587.7429504394531 s [94, 97] 14.634146341463413 [0, 0, 0, 0, 10, 9, 11, 12, 24, 4, 17, 16, 6, 43, 4, 9, 12, 6, 10, 15, 17, 17, 12, 12, 10, 24, 24, 28, 46, 39, 39, 19, 24, 36, 38, 29, 56, 55, 59, 29, 69, 24, 25, 51, 55, 36, 61, 46, 51, 61, 62, 62, 71, 78, 43, 69, 78, 81, 85, 65, 85, 94] 0

k\_1000 471

opm 93

the random choice case path in j60 ./rcpsp/j60.sm/j609\_10.sm case j609\_10.sm

v5 22 607.0541839599609 s [103, 256] 10.75268817204301 [0, 0, 0, 0, 2, 5, 5, 11, 17, 3, 21, 21, 11, 24, 23, 2, 11, 31, 26, 27, 3, 30, 46, 37, 46, 46, 7, 56, 20, 7, 61, 45, 61, 27, 34, 27, 17, 46, 40, 56, 65, 54, 69, 34, 62, 54, 61, 70, 52, 75, 62, 84, 74, 80, 87, 93, 84, 90, 90, 97, 90, 103] 0

k\_1000 472

opm 82

the random choice case path in j60 ./rcpsp/j60.sm/j609\_2.sm case j609\_2.sm

v5 42 595.1539709568024 s [94, 172] 14.634146341463413 [0, 10, 0, 0, 8, 22, 14, 14, 8, 32, 45, 19, 27, 35, 50, 19, 22, 32, 50, 27, 27, 22, 55, 16, 46, 34, 10, 56, 45, 37, 66, 62, 48, 54, 44, 35, 32, 37, 79, 46, 64, 36, 64, 76, 67, 41, 71, 74, 79, 56, 85, 66, 71, 50, 86, 76, 81, 90, 91, 86, 65, 94] 0

k\_1000 473

opm 100

the random choice case path in j60 ./rcpsp/j60.sm/j609\_3.sm case j609\_3.sm

v5 25 600.9827094078064 s [114, 484] 14.000000000000002 [0, 35, 0, 26, 6, 8, 15, 38, 6, 15, 8, 72, 39, 53, 10, 23, 23, 46, 30, 15, 61, 29, 29, 19, 46, 26, 18, 33, 54, 79, 83, 14, 74, 70, 92, 26, 95, 62, 38, 53, 82, 53, 87, 72, 80, 87, 84, 18, 72, 60, 97, 62, 84, 97, 100, 101, 101, 104, 113, 92, 100, 114] 0

k\_1000 474

opm 87

the random choice case path in j60 ./rcpsp/j60.sm/j609\_4.sm case j609\_4.sm

v5 33 600.7677597999573 s [96, 103] 10.344827586206897 [0, 0, 0, 0, 1, 7, 10, 2, 15, 15, 28, 30, 12, 23, 1, 30, 10, 6, 12, 22, 27, 30, 35, 47, 23, 7, 39, 22, 31, 14, 63, 25, 12, 27, 40, 38, 39, 42, 48, 40, 39, 63, 65, 23, 38, 52, 56, 67, 48, 75, 81, 56, 75, 65, 75, 76, 58, 81, 91, 86, 80, 96] 0

k\_1000 475

opm 82

the random choice case path in j60 ./rcpsp/j60.sm/j609\_5.sm case j609\_5.sm

v5 20 598.7163021564484 s [87, 109] 6.097560975609756 [0, 0, 0, 0, 3, 9, 13, 9, 13, 23, 3, 28, 59, 9, 40, 18, 23, 33, 22, 35, 20, 33, 53, 40, 12, 12, 40, 26, 35, 63, 45, 48, 22, 16, 40, 69, 67, 35, 31, 48, 19, 54, 67, 50, 40, 70, 54, 55, 59, 61, 31, 64, 69, 75, 50, 80, 65, 75, 83, 81, 81, 87] 0

k\_1000 476

opm 105

the random choice case path in j60 ./rcpsp/j60.sm/j609\_6.sm case j609\_6.sm

v5 23 605.8769309520721 s [115, 310] 9.523809523809524 [0, 0, 0, 15, 7, 17, 27, 44, 7, 60, 35, 9, 17, 35, 8, 13, 30, 23, 41, 26, 17, 25, 35, 51, 37, 41, 50, 82, 17, 96, 30, 61, 46, 55, 70, 70, 46, 54, 78, 78, 52, 87, 102, 70, 44, 35, 50, 52, 77, 67, 87, 87, 96, 94, 61, 105, 87, 97, 105, 111, 105, 115] 0

k\_1000 477

opm 100

the random choice case path in j60 ./rcpsp/j60.sm/j609\_7.sm case j609\_7.sm

v5 17 596.312343120575 s [120, 257] 20.0 [0, 0, 0, 0, 18, 25, 8, 12, 18, 15, 31, 10, 20, 45, 34, 41, 10, 49, 49, 45, 36, 41, 59, 21, 61, 12, 53, 20, 60, 29, 29, 21, 60, 80, 26, 70, 38, 75, 84, 36, 88, 56, 56, 75, 84, 69, 92, 87, 69, 89, 21, 92, 54, 104, 75, 102, 102, 104, 110, 111, 105, 120] 0

k\_1000 478

opm 96

the random choice case path in j60 ./rcpsp/j60.sm/j609\_8.sm case j609\_8.sm

v5 27 589.3682086467743 s [102, 112] 6.25 [0, 0, 0, 0, 10, 17, 19, 18, 21, 4, 29, 27, 9, 30, 3, 28, 4, 15, 59, 37, 30, 15, 19, 47, 19, 40, 83, 17, 54, 11, 34, 61, 79, 50, 3, 18, 45, 25, 69, 37, 12, 16, 50, 69, 56, 40, 57, 19, 81, 79, 68, 64, 27, 54, 45, 76, 85, 76, 92, 94, 94, 102] 0

k\_1000 479

opm 99

the random choice case path in j60 ./rcpsp/j60.sm/j609\_9.sm case j609\_9.sm

v5 14 578.1101675033569 s [111, 211] 12.121212121212121 [0, 6, 0, 0, 2, 8, 8, 27, 6, 13, 15, 21, 32, 28, 28, 15, 15, 23, 31, 41, 41, 14, 50, 81, 68, 65, 32, 25, 49, 8, 41, 27, 15, 59, 74, 59, 36, 28, 23, 87, 73, 41, 65, 21, 38, 15, 87, 36, 87, 50, 55, 73, 97, 79, 85, 85, 101, 95, 103, 89, 97, 111] 0

aver\_result\_1000\_time 201.9308858424425

aver\_result\_1000\_deviation 2.0156293550781665

Process finished with exit code 0