

BT2022 | QUIZ IV | JAN-MAY 2022 | 20 Marks

Consider the given data on the dependency of Y on the independent random variables X₁, X₂, X₃ and X₄. Fit it into the given multiple linear regression model and obtain the sample estimates of the parameters $\beta_0, \beta_1, \beta_2, \beta_3, \beta_4$ (5 X 2 = 10 Marks). Compute the SSR, SSE and R² (3 X 2 = 6 Marks) along with the probable range (low and high side) of the population value of the given parameter at the given alpha value (2 X 2 = 4 Marks).

BT2022_qiv_22_alldata

AE18B004

alpha = 0.059715925

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X1 X4 X3 X1 + beta_2 X2 X1 X4 X4 X4 + beta_3 X3 X3 X2 X1 X3
+ beta_4 X4 X1 X4 X2 X2

PARAMATER FOR POPULATION RANGE: beta_3

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[-0.3216496]@
\$[0.072561526]@,\$[0.075110155]@,\$[0.17586255]@,\$[0.14974557]@,\$[0.51847951]@
\$[0.18936349]@,\$[0.13401676]@,\$[0.39813062]@,\$[0.1550791]@,\$[0.39183943]@
\$[0.39634023]@,\$[0.46787813]@,\$[0.3707408]@,\$[0.53245995]@,\$[-0.033519825]@
\$[0.48778507]@,\$[0.70450172]@,\$[0.56689735]@,\$[0.30099472]@,\$[1.1996128]@
\$[0.67338895]@,\$[0.39909466]@,\$[0.68060524]@,\$[0.27887784]@,\$[-0.58209736]@
\$[1.0861364]@,\$[0.622082]@,\$[0.42267062]@,\$[0.31140766]@,\$[-1.5197512]@
\$[0.99794417]@,\$[1.3422919]@,\$[1.0141042]@,\$[1.2111659]@,\$[27.611569]@
\$[0.59257831]@,\$[1.070147]@,\$[0.64417573]@,\$[0.66862191]@,\$[2.1730596]@
\$[1.1996713]@,\$[1.7783211]@,\$[0.73913054]@,\$[1.3192191]@,\$[59.640608]@
\$[0.98927267]@,\$[0.66492764]@,\$[1.5475288]@,\$[1.0350599]@,\$[13.902321]@
\$[1.1029824]@,\$[1.0027852]@,\$[2.1821134]@,\$[1.1798613]@,\$[51.336147]@
\$[0.91174467]@,\$[1.0557626]@,\$[1.0035298]@,\$[1.794656]@,\$[44.346132]@
\$[1.0846722]@,\$[1.3806969]@,\$[0.95266229]@,\$[1.0266614]@,\$[22.277696]@
\$[0.7539617]@,\$[1.3647757]@,\$[1.0617005]@,\$[2.4229038]@,\$[104.16839]@
\$[1.9131476]@,\$[2.3277625]@,\$[0.80612439]@,\$[2.2509341]@,\$[503.7803]@
\$[1.1744955]@,\$[2.4612449]@,\$[2.3427322]@,\$[2.43929]@,\$[505.81166]@
\$[1.0078812]@,\$[1.7011647]@,\$[1.0005365]@,\$[2.3342961]@,\$[175.35496]@
\$[1.6410285]@,\$[1.8175841]@,\$[3.5605236]@,\$[1.8771868]@,\$[608.92954]@
\$[2.8812867]@,\$[3.1649739]@,\$[1.3048626]@,\$[3.010326]@,\$[2573.5358]@

AE18B005

alpha = 0.070246726

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X1 X4 X1 X3 + beta_2 X2 X4 X3 X4 X3 + beta_3 X3 X4 X2 X3 X1
+ beta_4 X4 X3 X1 X2 X4

PARAMATER FOR POPULATION RANGE: beta_1

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[1.2354948]@
\$[0.16324439]@,\$[0.094821132]@,\$[0.13813269]@,\$[0.17676724]@,\$[0.10150735]@
\$[0.2227657]@,\$[0.31208823]@,\$[0.12238938]@,\$[0.19782191]@,\$[1.4067494]@
\$[0.38743164]@,\$[0.31364518]@,\$[0.37293849]@,\$[0.22325883]@,\$[1.5486287]@
\$[0.3289585]@,\$[0.42839941]@,\$[0.67856898]@,\$[0.75501849]@,\$[2.5406134]@
\$[0.44983979]@,\$[0.8019204]@,\$[0.72966722]@,\$[0.76945839]@,\$[2.5166526]@
\$[0.63233894]@,\$[0.33943377]@,\$[0.8485896]@,\$[0.52709477]@,\$[2.8907327]@
\$[0.599177]@,\$[0.5326196]@,\$[0.80231181]@,\$[0.6076097]@,\$[2.1041561]@
\$[0.93004802]@,\$[1.5464501]@,\$[1.5539427]@,\$[1.195684]@,\$[12.859611]@
\$[1.1007578]@,\$[1.4734294]@,\$[1.1323363]@,\$[1.6156711]@,\$[20.560067]@
\$[1.3393348]@,\$[1.6715367]@,\$[1.9493266]@,\$[0.98218208]@,\$[3.2442685]@
\$[1.6777516]@,\$[0.7201616]@,\$[1.1162587]@,\$[1.617823]@,\$[-8.6168543]@

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BT2022_qiv_22_alldata
$[2.2176269]@,$[2.1948547]@,$[0.78428805]@,$[0.9411453]@,$[-11.287666]@
$[1.5482069]@,$[0.70323755]@,$[2.5276586]@,$[1.508999]@,$[-17.483761]@
$[2.002979]@,$[1.9079467]@,$[0.97262158]@,$[1.3771399]@,$[-1.3851462]@
$[0.97183589]@,$[1.5899051]@,$[1.9208702]@,$[2.1902597]@,$[76.12182]@
$[1.1490234]@,$[2.2183157]@,$[3.1884552]@,$[3.1926489]@,$[514.63034]@
$[2.6853918]@,$[2.8510884]@,$[1.9384775]@,$[3.3234085]@,$[465.5329]@
$[2.3596487]@,$[3.2847049]@,$[3.4847101]@,$[1.0388963]@,$[-114.03996]@
$[1.9598464]@,$[3.3529277]@,$[2.9260566]@,$[2.822424]@,$[629.42646]@

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AE18B007

alpha = 0.14015257

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X3 X4 X1 X3 + beta_2 X2 X3 X1 X3 X1 + beta_3 X3 X1 X4 X1 X2
+ beta_4 X4 X2 X4 X2 X4

PARAMATER FOR POPULATION RANGE: beta_0

DATA COLUMNS X1 X2 X3 X4 Y

```

$[0]@,$[0]@,$[0]@,$[0]@,$[2.500035]@
$[0.16092701]@,$[0.09181342]@,$[0.19814234]@,$[0.18503822]@,$[2.8231617]@
$[0.25478499]@,$[0.17600964]@,$[0.33656341]@,$[0.23748562]@,$[1.558168]@
$[0.34681792]@,$[0.21041537]@,$[0.31752546]@,$[0.19584865]@,$[3.8328594]@
$[0.71073523]@,$[0.45969479]@,$[0.46691861]@,$[0.45026636]@,$[3.4777382]@
$[0.87271668]@,$[0.99304987]@,$[0.60274983]@,$[0.77138101]@,$[9.6312534]@
$[0.61813071]@,$[0.74791254]@,$[0.84799624]@,$[1.1202193]@,$[9.0786052]@
$[0.5344082]@,$[0.59953234]@,$[1.1760204]@,$[0.95134719]@,$[6.4428677]@
$[0.7636682]@,$[1.4268053]@,$[1.2042468]@,$[1.243798]@,$[31.759415]@
$[1.1081632]@,$[1.2255223]@,$[0.82509396]@,$[0.78672524]@,$[16.864178]@
$[0.969347]@,$[1.9757818]@,$[0.82853231]@,$[1.1362682]@,$[41.363925]@
$[1.0570506]@,$[1.5299737]@,$[0.7268818]@,$[0.82466153]@,$[18.407532]@
$[0.78009532]@,$[1.9677575]@,$[0.96678269]@,$[1.4905032]@,$[71.263796]@
$[2.2752814]@,$[0.75433872]@,$[1.1034634]@,$[2.233491]@,$[163.30073]@
$[1.5421339]@,$[2.2368127]@,$[1.9097719]@,$[1.1233693]@,$[170.48294]@
$[2.4981656]@,$[1.6230103]@,$[1.4244266]@,$[0.94084938]@,$[175.01283]@
$[1.2654152]@,$[1.6531939]@,$[2.4741198]@,$[1.8974322]@,$[267.39851]@
$[2.7654697]@,$[1.3111752]@,$[2.6060251]@,$[2.8343873]@,$[1442.7832]@
$[2.5409339]@,$[1.8894811]@,$[3.1633246]@,$[2.8033255]@,$[2035.8199]@
$[2.8337144]@,$[2.5511732]@,$[1.6009251]@,$[2.5738311]@,$[1268.0472]@

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AE18B008

alpha = 0.18641112

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X1 X1 X4 X1 + beta_2 X2 X1 X1 X3 X4 + beta_3 X3 X2 X4 X3 X1
+ beta_4 X4 X2 X3 X4 X2

PARAMATER FOR POPULATION RANGE: beta_4

DATA COLUMNS X1 X2 X3 X4 Y

```

$[0]@,$[0]@,$[0]@,$[0]@,$[0.5553616]@
$[0.075201711]@,$[0.084994438]@,$[0.089666842]@,$[0.12655883]@,$[-2.0135742]@

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BT2022_qiv_22_alldata

$\$[0.22858757]@, \$[0.28289942]@, \$[0.20986117]@, \$[0.15707598]@, \$[1.5796961]@$
 $\$[0.57640406]@, \$[0.56870214]@, \$[0.53891828]@, \$[0.32632073]@, \$[1.1571774]@$
 $\$[0.42557263]@, \$[0.61466967]@, \$[0.27283261]@, \$[0.21756236]@, \$[-2.1818756]@$
 $\$[0.95335265]@, \$[0.73248051]@, \$[0.48472823]@, \$[0.42105394]@, \$[-0.93115724]@$
 $\$[0.61822903]@, \$[0.64607194]@, \$[0.76021427]@, \$[0.75061568]@, \$[-1.0783142]@$
 $\$[0.50215158]@, \$[1.1950581]@, \$[0.71706841]@, \$[0.81050856]@, \$[1.8122852]@$
 $\$[1.0288798]@, \$[0.50069153]@, \$[1.2463364]@, \$[0.93547322]@, \$[4.1428861]@$
 $\$[1.4734611]@, \$[1.2310362]@, \$[1.6986767]@, \$[1.0827995]@, \$[28.979774]@$
 $\$[0.78817013]@, \$[0.81482347]@, \$[1.5997095]@, \$[1.3134103]@, \$[12.467639]@$
 $\$[1.317862]@, \$[1.8346226]@, \$[0.96517067]@, \$[1.9404717]@, \$[54.281737]@$
 $\$[1.2979555]@, \$[1.8266409]@, \$[1.6376712]@, \$[1.3146961]@, \$[59.257388]@$
 $\$[0.85071037]@, \$[1.692446]@, \$[1.3730611]@, \$[1.4790403]@, \$[39.205857]@$
 $\$[0.79631498]@, \$[1.8032442]@, \$[2.7175548]@, \$[1.9037499]@, \$[180.80079]@$
 $\$[2.0113006]@, \$[2.7875446]@, \$[2.3612733]@, \$[2.4050372]@, \$[600.6805]@$
 $\$[1.6973526]@, \$[2.7931876]@, \$[1.97034]@, \$[1.3245268]@, \$[167.39799]@$
 $\$[1.4697392]@, \$[2.8840818]@, \$[2.2504591]@, \$[2.8617443]@, \$[715.68161]@$
 $\$[0.93900438]@, \$[1.757614]@, \$[1.8566227]@, \$[1.6120736]@, \$[80.769824]@$
 $\$[2.803258]@, \$[0.9732149]@, \$[2.5064057]@, \$[1.966208]@, \$[235.10005]@$

AE18B018
alpha = 0.077912648
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X2 X4 X4 X4 + beta_2 X2 X1 X2 X1 X3 + beta_3 X3 X2 X4 X4 X4
+ beta_4 X4 X3 X3 X4 X3
PARAMATER FOR POPULATION RANGE: beta_3
DATA COLUMNS X1 X2 X3 X4 Y
 $\$[0]@, \$[0]@, \$[0]@, \$[0]@, \$[3.9243163]@$
 $\$[0.09038046]@, \$[0.11850967]@, \$[0.10699319]@, \$[0.092991588]@, \$[7.2016677]@$
 $\$[0.3833213]@, \$[0.22378348]@, \$[0.28153863]@, \$[0.32176335]@, \$[4.4291374]@$
 $\$[0.53044739]@, \$[0.46088686]@, \$[0.37048944]@, \$[0.1852954]@, \$[4.3600013]@$
 $\$[0.22290368]@, \$[0.6507298]@, \$[0.49845284]@, \$[0.51260545]@, \$[5.0791259]@$
 $\$[0.32452329]@, \$[0.45853522]@, \$[0.75533586]@, \$[0.87330804]@, \$[4.2767493]@$
 $\$[0.61624593]@, \$[0.98087592]@, \$[0.58079738]@, \$[0.72850967]@, \$[4.9352828]@$
 $\$[0.73859877]@, \$[1.2458285]@, \$[0.91283759]@, \$[0.47608692]@, \$[5.1437594]@$
 $\$[0.83168487]@, \$[1.0443258]@, \$[1.1014617]@, \$[1.3072619]@, \$[-6.9476494]@$
 $\$[0.47504698]@, \$[0.57552198]@, \$[1.7372562]@, \$[1.3964115]@, \$[-33.268598]@$
 $\$[1.7542923]@, \$[1.1059204]@, \$[1.7700545]@, \$[1.5999783]@, \$[-49.989138]@$
 $\$[1.7263431]@, \$[1.2575635]@, \$[1.830269]@, \$[1.252972]@, \$[-27.239963]@$
 $\$[2.0998739]@, \$[1.8491946]@, \$[1.1340184]@, \$[0.94623951]@, \$[15.816546]@$
 $\$[1.7107211]@, \$[0.96888708]@, \$[0.68018671]@, \$[2.0381061]@, \$[1.7910111]@$
 $\$[1.6526959]@, \$[0.91545452]@, \$[2.6805115]@, \$[1.7737059]@, \$[-210.42787]@$
 $\$[1.9051612]@, \$[1.3130157]@, \$[2.2461082]@, \$[1.603786]@, \$[-97.648643]@$
 $\$[1.064632]@, \$[2.6564151]@, \$[2.8236919]@, \$[1.1854919]@, \$[-104.19504]@$
 $\$[1.6644623]@, \$[1.4105931]@, \$[2.9144352]@, \$[2.057029]@, \$[-394.8118]@$
 $\$[2.1638623]@, \$[2.9097462]@, \$[1.6666782]@, \$[2.8097844]@, \$[-241.27215]@$
 $\$[3.2207428]@, \$[1.6640702]@, \$[3.7432874]@, \$[1.6328988]@, \$[-376.51629]@$

BT2022_qiv_22_alldata

AE18B022
alpha = 0.096276365
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X1 X1 X1 X1 + beta_2 X2 X2 X4 X2 X4 + beta_3 X3 X4 X2 X3 X4
+ beta_4 X4 X1 X2 X1 X1
PARAMATER FOR POPULATION RANGE: beta_2
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[4.8802924]@
\$[0.12371974]@,\$[0.17263107]@,\$[0.09564384]@,\$[0.18634289]@,\$[4.9689894]@
\$[0.1155229]@,\$[0.37766968]@,\$[0.25105796]@,\$[0.1539146]@,\$[5.1059852]@
\$[0.22878722]@,\$[0.39573899]@,\$[0.1514752]@,\$[0.54545604]@,\$[3.4769332]@
\$[0.49589027]@,\$[0.49807268]@,\$[0.62855455]@,\$[0.63096869]@,\$[5.6034087]@
\$[0.3090111]@,\$[0.64317773]@,\$[0.84132782]@,\$[0.96050293]@,\$[4.8271337]@
\$[0.99190943]@,\$[1.0424478]@,\$[0.36000319]@,\$[1.1952823]@,\$[8.8842262]@
\$[0.62290466]@,\$[0.7766266]@,\$[0.60437644]@,\$[1.1453504]@,\$[4.5675942]@
\$[1.4710267]@,\$[0.68586477]@,\$[0.42625314]@,\$[1.1921192]@,\$[14.169938]@
\$[0.77954445]@,\$[1.4104774]@,\$[0.75081151]@,\$[1.7832893]@,\$[-6.1447654]@
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\$[1.8929449]@,\$[1.1940171]@,\$[0.84438054]@,\$[1.0295813]@,\$[32.004742]@
\$[0.96373512]@,\$[0.75434219]@,\$[1.6278342]@,\$[1.3053404]@,\$[7.8128838]@
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\$[1.2496465]@,\$[1.3679894]@,\$[2.8692315]@,\$[1.9585887]@,\$[29.068025]@
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\$[2.3610691]@,\$[3.3421088]@,\$[2.2997226]@,\$[1.0108132]@,\$[120.13125]@
\$[2.4748377]@,\$[2.1511227]@,\$[1.6160129]@,\$[3.2123024]@,\$[278.80995]@

AE18B026
alpha = 0.17876676
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X1 X4 X3 X2 + beta_2 X2 X1 X3 X1 X1 + beta_3 X3 X1 X3 X4 X1
+ beta_4 X4 X3 X3 X3 X1
PARAMATER FOR POPULATION RANGE: beta_0
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[-2.546654]@
\$[0.12362129]@,\$[0.13525706]@,\$[0.069209791]@,\$[0.18047583]@,\$[-2.5656624]@
\$[0.21735264]@,\$[0.38597114]@,\$[0.29028016]@,\$[0.28499689]@,\$[-1.7639794]@
\$[0.46865554]@,\$[0.40737398]@,\$[0.39682619]@,\$[0.45435598]@,\$[-1.8255211]@
\$[0.41243689]@,\$[0.47375359]@,\$[0.446141]@,\$[0.74702276]@,\$[-2.2395189]@
\$[0.72391677]@,\$[0.6176611]@,\$[0.58068295]@,\$[0.60047262]@,\$[-2.0658113]@
\$[1.1912304]@,\$[0.81159473]@,\$[0.92355785]@,\$[0.82810348]@,\$[5.8826339]@
\$[1.278692]@,\$[1.030884]@,\$[0.73169286]@,\$[0.95923436]@,\$[6.2647959]@
\$[1.3209646]@,\$[0.76359527]@,\$[1.23582]@,\$[0.9029728]@,\$[14.06663]@
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\$[1.5174846]@,\$[1.9876001]@,\$[1.424001]@,\$[1.5766953]@,\$[80.243949]@

BT2022_qiv_22_alldata

\$[1.5042541]@,\$[2.1055245]@,\$[0.64164347]@,\$[1.4572615]@,\$[28.804115]@
 \$[2.0309311]@,\$[1.4356291]@,\$[0.78357464]@,\$[2.2242439]@,\$[72.714973]@
 \$[2.549541]@,\$[2.3324858]@,\$[0.87337966]@,\$[0.91981509]@,\$[112.34082]@
 \$[2.3096141]@,\$[2.2913788]@,\$[2.1832413]@,\$[1.0344774]@,\$[273.98555]@
 \$[1.6594589]@,\$[1.8507754]@,\$[2.6746069]@,\$[1.0557139]@,\$[153.61484]@
 \$[1.8571639]@,\$[1.4376395]@,\$[1.8140287]@,\$[1.7298845]@,\$[142.69969]@
 \$[1.299519]@,\$[1.0775492]@,\$[1.2351604]@,\$[1.897886]@,\$[33.777964]@
 \$[1.2527334]@,\$[2.4681039]@,\$[1.1635771]@,\$[3.1819628]@,\$[94.606387]@
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AE18B030

alpha = 0.14195707

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X4 X2 X2 X2 + beta_2 X2 X3 X2 X2 X4 + beta_3 X3 X4 X3 X3 X4
 + beta_4 X4 X3 X1 X4 X4

PARAMATER FOR POPULATION RANGE: beta_2

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[0.32329808]@
 \$[0.18628549]@,\$[0.10754158]@,\$[0.17106537]@,\$[0.19801752]@,\$[0.30537545]@
 \$[0.15489191]@,\$[0.26183443]@,\$[0.15209351]@,\$[0.10441896]@,\$[-0.71756077]@
 \$[0.53593455]@,\$[0.36610511]@,\$[0.4824558]@,\$[0.51883727]@,\$[-0.66675326]@
 \$[0.317522]@,\$[0.20088668]@,\$[0.75262609]@,\$[0.67913369]@,\$[1.1100303]@
 \$[0.40571276]@,\$[0.94723028]@,\$[0.29536551]@,\$[0.81847963]@,\$[4.1177152]@
 \$[0.57916798]@,\$[1.1888989]@,\$[0.89459673]@,\$[0.93783664]@,\$[11.060442]@
 \$[0.627537]@,\$[0.81932719]@,\$[0.36459392]@,\$[0.68435668]@,\$[0.94803769]@
 \$[0.53494835]@,\$[0.95746537]@,\$[0.50876141]@,\$[1.2114938]@,\$[3.7875699]@
 \$[1.1923233]@,\$[0.90521991]@,\$[1.0886964]@,\$[0.76055337]@,\$[5.8824315]@
 \$[0.88639408]@,\$[0.91304056]@,\$[1.5186175]@,\$[0.98744532]@,\$[14.205655]@
 \$[0.74120946]@,\$[1.977833]@,\$[1.2201916]@,\$[0.70162389]@,\$[42.291043]@
 \$[2.2817015]@,\$[1.8738102]@,\$[1.2308643]@,\$[0.81580007]@,\$[68.646685]@
 \$[1.4357286]@,\$[1.8026929]@,\$[2.1734763]@,\$[2.4943549]@,\$[400.94404]@
 \$[2.1123752]@,\$[2.6042388]@,\$[2.5020594]@,\$[1.8883916]@,\$[736.11331]@
 \$[1.0678199]@,\$[2.6296728]@,\$[1.3056959]@,\$[2.1388935]@,\$[386.96136]@
 \$[1.4408022]@,\$[1.0635246]@,\$[2.3020509]@,\$[1.3655275]@,\$[80.436507]@
 \$[1.3404603]@,\$[2.3673477]@,\$[2.6425851]@,\$[0.92141762]@,\$[226.25499]@
 \$[3.5258209]@,\$[1.334819]@,\$[1.2373077]@,\$[1.9491708]@,\$[138.86907]@
 \$[1.1661252]@,\$[2.6493808]@,\$[2.6064119]@,\$[3.3096756]@,\$[1466.663]@

AE18B032

alpha = 0.077054786

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X2 X3 X3 X4 + beta_2 X2 X2 X4 X4 X3 + beta_3 X3 X4 X4 X2 X4
 + beta_4 X4 X1 X1 X3 X4

PARAMATER FOR POPULATION RANGE: beta_4

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[1.5574398]@

```

BT2022_qiv_22_alldata
$[0.08589516]@,$[0.096592527]@,$[0.07383534]@,$[0.06389418]@,$[3.1311544]@
$[0.20547264]@,$[0.309606]@,$[0.18183751]@,$[0.35978734]@,$[2.6742043]@
$[0.2143354]@,$[0.56207212]@,$[0.17338801]@,$[0.44999056]@,$[0.75145812]@
$[0.33770733]@,$[0.33330144]@,$[0.42105621]@,$[0.52423072]@,$[2.1106182]@
$[0.46228862]@,$[0.81597417]@,$[0.86260577]@,$[0.67580441]@,$[4.2871473]@
$[0.75687136]@,$[0.42600929]@,$[0.83678297]@,$[1.1679133]@,$[6.4596497]@
$[0.66418314]@,$[0.89112157]@,$[0.41423138]@,$[1.2356159]@,$[2.9125677]@
$[1.2553298]@,$[1.1373368]@,$[0.75143608]@,$[0.7755098]@,$[7.8507792]@
$[0.89414486]@,$[1.1153356]@,$[0.72211709]@,$[0.8439156]@,$[6.0906806]@
$[1.6770401]@,$[1.5446368]@,$[1.867985]@,$[0.91789558]@,$[47.913923]@
$[0.88011822]@,$[2.0662423]@,$[0.55673004]@,$[2.06684]@,$[34.655797]@
$[1.3109856]@,$[0.66402394]@,$[0.81493497]@,$[1.7664176]@,$[28.592747]@
$[1.1381882]@,$[2.3358843]@,$[2.3116355]@,$[0.68875149]@,$[38.368873]@
$[2.758564]@,$[2.2991084]@,$[0.90376479]@,$[2.4549824]@,$[261.95245]@
$[1.3261085]@,$[2.2579856]@,$[1.3525824]@,$[1.3985851]@,$[60.487624]@
$[2.2421455]@,$[2.7536914]@,$[2.7554745]@,$[1.0990304]@,$[232.42001]@
$[3.375422]@,$[1.5787611]@,$[3.2668234]@,$[2.6918613]@,$[1652.0304]@
$[2.6463184]@,$[1.9847496]@,$[3.3734891]@,$[2.3605453]@,$[1073.8447]@
$[1.9369519]@,$[2.8599708]@,$[3.0636008]@,$[1.4224664]@,$[353.08025]@

```

AE18B033

alpha = 0.15344576

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X4 X1 X2 X1 + beta_2 X2 X2 X2 X1 X4 + beta_3 X3 X3 X3 X2 X1
+ beta_4 X4 X4 X2 X2 X3

PARAMATER FOR POPULATION RANGE: beta_0

DATA COLUMNS X1 X2 X3 X4 Y

```

$[0]@,$[0]@,$[0]@,$[0]@,$[-2.1243247]@
$[0.098144025]@,$[0.12777669]@,$[0.19187569]@,$[0.060536148]@,$[-0.60058007]@
$[0.16917879]@,$[0.21428429]@,$[0.14294202]@,$[0.23244982]@,$[-0.48254687]@
$[0.39536144]@,$[0.50328558]@,$[0.4817454]@,$[0.22706598]@,$[0.76289145]@
$[0.55977952]@,$[0.4026562]@,$[0.73817232]@,$[0.20436041]@,$[-1.7086995]@
$[0.78962434]@,$[0.75211641]@,$[0.55948493]@,$[0.87153233]@,$[-0.82181811]@
$[0.85863172]@,$[1.0761024]@,$[0.55358775]@,$[0.38590972]@,$[0.12241429]@
$[0.56907686]@,$[1.197059]@,$[1.2943907]@,$[0.4562042]@,$[2.5219424]@
$[0.49838142]@,$[0.62899999]@,$[0.45537514]@,$[1.3094744]@,$[0.022337036]@
$[1.2865612]@,$[1.0486875]@,$[1.7177601]@,$[0.55633432]@,$[20.75945]@
$[1.971724]@,$[1.9745532]@,$[1.1094095]@,$[1.2060855]@,$[51.399027]@
$[0.61392806]@,$[0.66666071]@,$[0.87374087]@,$[0.98554294]@,$[-0.91686911]@
$[2.2261715]@,$[1.3645719]@,$[1.8414944]@,$[1.1054883]@,$[99.57807]@
$[1.3924127]@,$[1.980736]@,$[1.2768768]@,$[2.0214915]@,$[15.427857]@
$[1.6027158]@,$[1.0119487]@,$[1.2373025]@,$[2.262858]@,$[31.793382]@
$[2.9273068]@,$[1.0539067]@,$[1.6414027]@,$[1.1273538]@,$[132.28115]@
$[1.9004655]@,$[2.7016628]@,$[1.1913255]@,$[1.3972773]@,$[41.317259]@
$[1.4552798]@,$[2.5578908]@,$[2.8177139]@,$[1.0993959]@,$[224.41968]@
$[1.3812703]@,$[0.92475087]@,$[1.2845413]@,$[3.0521867]@,$[22.671579]@
$[3.1157396]@,$[3.5227509]@,$[3.113173]@,$[2.7054122]@,$[1331.8122]@

```

BT2022_qiv_22_alldata

AE18B043

alpha = 0.17215216

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X1 X4 X3 X2 + beta_2 X2 X3 X3 X4 X2 + beta_3 X3 X3 X3 X4 X1
+ beta_4 X4 X1 X1 X1 X2
PARAMATER FOR POPULATION RANGE: beta_4
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[4.1639258]@
\$[0.11637323]@,\$[0.082806504]@,\$[0.13897287]@,\$[0.12237154]@,\$[4.0403251]@
\$[0.30508445]@,\$[0.35459887]@,\$[0.31576111]@,\$[0.21271744]@,\$[3.0069393]@
\$[0.4291789]@,\$[0.43731401]@,\$[0.57637445]@,\$[0.24858502]@,\$[3.1703256]@
\$[0.2970082]@,\$[0.59074628]@,\$[0.37274872]@,\$[0.50509895]@,\$[4.1117714]@
\$[0.53142362]@,\$[0.76240143]@,\$[0.31997005]@,\$[0.85126548]@,\$[2.958153]@
\$[1.0931465]@,\$[0.43399494]@,\$[0.80605244]@,\$[0.55335359]@,\$[4.5474273]@
\$[1.391393]@,\$[0.36148393]@,\$[1.2035869]@,\$[0.58380437]@,\$[3.2586685]@
\$[1.4178059]@,\$[1.3008486]@,\$[0.59826214]@,\$[0.61466874]@,\$[9.5208894]@
\$[0.97240482]@,\$[1.3076241]@,\$[1.5512307]@,\$[0.59672173]@,\$[14.501542]@
\$[1.2634113]@,\$[1.2914187]@,\$[0.50292444]@,\$[1.8679764]@,\$[13.456838]@
\$[2.0249308]@,\$[1.3245122]@,\$[0.77742569]@,\$[1.1566846]@,\$[29.532754]@
\$[1.1595975]@,\$[0.99022278]@,\$[1.7715817]@,\$[0.77324918]@,\$[16.077231]@
\$[1.7600038]@,\$[1.7705973]@,\$[1.0925846]@,\$[1.8377193]@,\$[63.284304]@
\$[1.6839632]@,\$[2.0528629]@,\$[2.7993788]@,\$[1.5338277]@,\$[217.08306]@
\$[2.5559969]@,\$[2.7925971]@,\$[2.4872988]@,\$[1.0708614]@,\$[311.53323]@
\$[1.0346979]@,\$[1.7062061]@,\$[2.0024493]@,\$[1.5167074]@,\$[70.689966]@
\$[1.6490616]@,\$[3.3463843]@,\$[0.91139437]@,\$[1.9351172]@,\$[123.70557]@
\$[1.5357473]@,\$[1.0165736]@,\$[2.0709665]@,\$[2.5339152]@,\$[61.821428]@
\$[2.0930257]@,\$[3.2421505]@,\$[2.8905245]@,\$[3.0574795]@,\$[1188.4533]@

AE18B044

alpha = 0.11838522

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X3 X2 X4 X2 + beta_2 X2 X2 X2 X1 X4 + beta_3 X3 X2 X3 X1 X3
+ beta_4 X4 X4 X3 X2 X3
PARAMATER FOR POPULATION RANGE: beta_4
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[0.66170839]@
\$[0.10266354]@,\$[0.19654606]@,\$[0.075011424]@,\$[0.15733007]@,\$[1.1490517]@
\$[0.27571436]@,\$[0.33976497]@,\$[0.17457787]@,\$[0.15106921]@,\$[-0.68427968]@
\$[0.15854051]@,\$[0.31134192]@,\$[0.34976669]@,\$[0.36976504]@,\$[0.22358614]@
\$[0.319111]@,\$[0.45347968]@,\$[0.77777287]@,\$[0.28892707]@,\$[1.6219584]@
\$[0.5089341]@,\$[0.6109028]@,\$[0.87147443]@,\$[0.80070427]@,\$[1.1247449]@
\$[0.55991302]@,\$[0.56268081]@,\$[0.56444794]@,\$[0.74338646]@,\$[0.10733827]@
\$[1.1718168]@,\$[1.026255]@,\$[1.3054227]@,\$[0.88887339]@,\$[6.1187443]@
\$[1.0760908]@,\$[0.74221389]@,\$[1.5846612]@,\$[0.98593375]@,\$[5.662334]@
\$[0.65145922]@,\$[1.4141183]@,\$[1.5483917]@,\$[1.0958643]@,\$[10.55503]@

BT2022_qiv_22_alldata

```

$[1.9009111]@,$[1.4349819]@,$[0.77802614]@,$[0.60317972]@,$[6.0661394]@
$[1.0204061]@,$[0.89883334]@,$[0.62385223]@,$[1.2775204]@,$[3.1449397]@
$[1.4374697]@,$[0.81263089]@,$[0.98305327]@,$[0.81383481]@,$[2.8472454]@
$[1.146898]@,$[2.1027547]@,$[1.9299182]@,$[2.4086275]@,$[81.12326]@
$[2.3589541]@,$[2.2669369]@,$[0.82839706]@,$[2.1057332]@,$[41.721031]@
$[1.7140599]@,$[2.096388]@,$[1.9540651]@,$[1.1196861]@,$[75.034644]@
$[2.7811576]@,$[1.8635739]@,$[1.5300136]@,$[2.9737793]@,$[145.03346]@
$[1.3453809]@,$[2.3631182]@,$[2.6793883]@,$[1.8745916]@,$[167.67721]@
$[1.4370374]@,$[1.7960166]@,$[0.9867462]@,$[2.0206043]@,$[24.470612]@
$[0.96091717]@,$[3.7567812]@,$[1.6433222]@,$[3.3598906]@,$[151.1219]@

```

AE18B105

alpha = 0.13873433

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X3 X3 X2 X2 + beta_2 X2 X1 X1 X1 X2 + beta_3 X3 X1 X3 X4 X4
+ beta_4 X4 X2 X4 X4 X2

PARAMATER FOR POPULATION RANGE: beta_2

DATA COLUMNS X1 X2 X3 X4 Y

```

$[0]@,$[0]@,$[0]@,$[0]@,$[5.3834097]@
$[0.070582278]@,$[0.18819095]@,$[0.10267922]@,$[0.13543094]@,$[3.6453452]@
$[0.18851111]@,$[0.223747]@,$[0.19455402]@,$[0.13633444]@,$[5.3653504]@
$[0.28042761]@,$[0.33194555]@,$[0.30539313]@,$[0.21453113]@,$[5.5045339]@
$[0.57990772]@,$[0.57661327]@,$[0.33167388]@,$[0.41620525]@,$[5.1902457]@
$[0.73825188]@,$[0.6068348]@,$[0.97422139]@,$[0.87026744]@,$[7.5217027]@
$[0.82024859]@,$[0.45882887]@,$[0.79374316]@,$[0.41065471]@,$[6.61463]@
$[0.84793202]@,$[0.57803281]@,$[1.0796244]@,$[0.42387986]@,$[6.2802447]@
$[0.65330923]@,$[1.1603728]@,$[1.516455]@,$[1.3086913]@,$[29.553538]@
$[1.3999953]@,$[1.5987597]@,$[0.52885108]@,$[0.8221066]@,$[39.346316]@
$[1.0152575]@,$[1.0492979]@,$[1.6881689]@,$[1.3035543]@,$[36.160258]@
$[1.1908136]@,$[1.2413838]@,$[0.93401973]@,$[1.4188799]@,$[40.561515]@
$[1.2315414]@,$[0.7268677]@,$[1.4282259]@,$[1.6148243]@,$[32.136755]@
$[2.0522096]@,$[1.8637499]@,$[2.1266546]@,$[2.4570625]@,$[522.48184]@
$[2.1869848]@,$[2.7627065]@,$[1.3531715]@,$[2.6605278]@,$[1046.6387]@
$[2.0198246]@,$[2.10412]@,$[1.4804384]@,$[2.5262815]@,$[546.67686]@
$[1.1445818]@,$[0.92982716]@,$[2.7217181]@,$[1.4699308]@,$[72.930203]@
$[2.9123631]@,$[0.87070279]@,$[3.1145509]@,$[3.1332303]@,$[678.64719]@
$[1.218342]@,$[2.9673002]@,$[3.177431]@,$[3.0485474]@,$[1635.0603]@
$[1.6545293]@,$[2.1680163]@,$[2.0757549]@,$[2.2986515]@,$[486.68832]@

```

BE17B010

alpha = 0.17285383

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X2 X3 X1 X3 + beta_2 X2 X4 X4 X1 X3 + beta_3 X3 X2 X2 X3 X4
+ beta_4 X4 X1 X3 X2 X4

PARAMATER FOR POPULATION RANGE: beta_4

DATA COLUMNS X1 X2 X3 X4 Y

```

BT2022_qiv_22_alldata
$[0]@,$[0]@,$[0]@,$[0]@,$[5.1992249]@
$[0.18212462]@,$[0.051250543]@,$[0.099607164]@,$[0.068210256]@,$[7.5509818]@
$[0.21736468]@,$[0.2431396]@,$[0.34272602]@,$[0.15597063]@,$[2.7721777]@
$[0.59692544]@,$[0.27247355]@,$[0.35615446]@,$[0.53406879]@,$[6.0841706]@
$[0.35838559]@,$[0.66364188]@,$[0.47685035]@,$[0.53407282]@,$[7.2159793]@
$[0.82158905]@,$[0.25399174]@,$[0.45630291]@,$[0.96353905]@,$[6.7792615]@
$[0.69190309]@,$[0.78952449]@,$[0.50663021]@,$[1.1742268]@,$[6.9276173]@
$[0.37890181]@,$[1.0689196]@,$[0.44147082]@,$[0.8836398]@,$[5.5468904]@
$[0.68864298]@,$[0.83571082]@,$[1.0152768]@,$[0.80741358]@,$[6.1667088]@
$[1.5505645]@,$[0.47844655]@,$[0.82520577]@,$[1.5643926]@,$[6.1651367]@
$[0.56831688]@,$[0.77738658]@,$[0.80705796]@,$[1.6177641]@,$[6.2828859]@
$[1.7649883]@,$[0.56869841]@,$[2.0687919]@,$[1.006181]@,$[22.783863]@
$[2.0208914]@,$[2.2747448]@,$[1.8213348]@,$[1.697658]@,$[177.95516]@
$[2.1696484]@,$[1.4086285]@,$[1.4813202]@,$[1.9102403]@,$[61.878409]@
$[1.3317541]@,$[1.5804064]@,$[2.0537912]@,$[2.5117853]@,$[140.25174]@
$[2.7705746]@,$[1.9658127]@,$[2.765658]@,$[2.7931906]@,$[537.83953]@
$[2.3109318]@,$[0.98320108]@,$[2.0724806]@,$[2.7672663]@,$[88.791266]@
$[2.0384177]@,$[1.7433605]@,$[2.8234188]@,$[3.2384065]@,$[434.019]@
$[2.1371726]@,$[2.2662226]@,$[3.4628908]@,$[1.3351407]@,$[552.24276]@
$[3.482652]@,$[1.2486872]@,$[3.629008]@,$[2.0262001]@,$[484.03719]@

```

BE18B022

alpha = 0.15671174

MLR FIT FUNCTION

```

Y = beta_0 + beta_1 X1 X3 X3 X4 X3 + beta_2 X2 X3 X2 X3 X3 + beta_3 X3 X2 X3 X2 X4
+ beta_4 X4 X3 X4 X1 X4

```

PARAMATER FOR POPULATION RANGE: beta_3

DATA COLUMNS X1 X2 X3 X4 Y

```

$[0]@,$[0]@,$[0]@,$[0]@,$[4.2873461]@
$[0.15694491]@,$[0.16080915]@,$[0.065497507]@,$[0.12886651]@,$[5.7518909]@
$[0.17187807]@,$[0.31295428]@,$[0.30192728]@,$[0.24993493]@,$[5.3465179]@
$[0.25649422]@,$[0.26964107]@,$[0.39181826]@,$[0.27943009]@,$[4.9968929]@
$[0.67804297]@,$[0.79802477]@,$[0.56047942]@,$[0.2499243]@,$[6.2193397]@
$[0.50030624]@,$[0.43992165]@,$[0.79514185]@,$[0.61617393]@,$[8.6585292]@
$[0.85729749]@,$[0.8067432]@,$[1.0693738]@,$[0.46519197]@,$[8.0940019]@
$[1.2464224]@,$[0.75339852]@,$[0.41539958]@,$[1.3142849]@,$[6.8126407]@
$[1.4452498]@,$[1.5294486]@,$[1.5845331]@,$[1.3803798]@,$[47.950308]@
$[1.0585687]@,$[1.6091809]@,$[0.46691622]@,$[1.4858121]@,$[8.8727059]@
$[0.85218012]@,$[1.0975903]@,$[0.60249644]@,$[1.7397956]@,$[13.405813]@
$[0.76886996]@,$[0.89076389]@,$[0.99947666]@,$[0.91830496]@,$[9.9833694]@
$[2.1000849]@,$[1.2352202]@,$[0.88494634]@,$[2.040507]@,$[35.037056]@
$[1.2547233]@,$[2.0318003]@,$[1.4692655]@,$[1.1484914]@,$[38.246455]@
$[2.2071695]@,$[1.4780755]@,$[1.5180267]@,$[2.7472145]@,$[166.4137]@
$[2.9955061]@,$[2.9766462]@,$[2.234111]@,$[1.2529329]@,$[223.46597]@
$[1.5650933]@,$[1.6458184]@,$[1.3754705]@,$[3.1895493]@,$[146.34608]@
$[1.6455046]@,$[2.0959198]@,$[1.5613588]@,$[2.2756317]@,$[116.86686]@
$[1.1177386]@,$[3.0078406]@,$[3.4766972]@,$[1.7288472]@,$[542.58487]@

```

BT2022_qiv_22_alldata
\$[3.3259044]@,\$[1.6080798]@,\$[1.2754562]@,\$[1.3373617]@,\$[55.257906]@

BE18B030
alpha = 0.19622171
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X1 X1 X3 X4 + beta_2 X2 X4 X3 X4 X1 + beta_3 X3 X2 X1 X2 X4
+ beta_4 X4 X2 X2 X1 X4
PARAMATER FOR POPULATION RANGE: beta_1
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[-2.0306305]@
\$[0.064787873]@,\$[0.11760893]@,\$[0.1362214]@,\$[0.16090968]@,\$[-1.701944]@
\$[0.33872197]@,\$[0.12225042]@,\$[0.32995483]@,\$[0.33891525]@,\$[-1.7653649]@
\$[0.58586523]@,\$[0.42828034]@,\$[0.46632953]@,\$[0.17556742]@,\$[-0.89029228]@
\$[0.37118445]@,\$[0.79338304]@,\$[0.26703435]@,\$[0.28627006]@,\$[-2.3494275]@
\$[0.58070503]@,\$[0.29751074]@,\$[0.49431517]@,\$[0.29945864]@,\$[-0.72555668]@
\$[0.4460643]@,\$[0.88484188]@,\$[1.065345]@,\$[1.0375831]@,\$[4.0467738]@
\$[0.68263325]@,\$[0.77756919]@,\$[0.73484213]@,\$[1.0853192]@,\$[4.258823]@
\$[0.84485879]@,\$[1.4874494]@,\$[1.2709445]@,\$[1.2987624]@,\$[42.766886]@
\$[1.1312839]@,\$[1.3275731]@,\$[0.50462576]@,\$[1.7645992]@,\$[39.816762]@
\$[1.7529325]@,\$[1.5764416]@,\$[1.1416835]@,\$[1.8471882]@,\$[180.19352]@
\$[1.1772692]@,\$[0.95531294]@,\$[0.89178783]@,\$[1.2653603]@,\$[21.694676]@
\$[2.3735788]@,\$[1.1268546]@,\$[0.75232131]@,\$[1.6357997]@,\$[111.64399]@
\$[1.1069113]@,\$[1.6953166]@,\$[1.0528457]@,\$[2.0371856]@,\$[124.50368]@
\$[1.0092047]@,\$[1.5183609]@,\$[2.369782]@,\$[1.4174189]@,\$[104.82336]@
\$[0.86202469]@,\$[0.92990599]@,\$[0.76870225]@,\$[2.3211118]@,\$[36.521387]@
\$[1.7203718]@,\$[1.4296882]@,\$[2.2773515]@,\$[2.7630603]@,\$[505.99502]@
\$[1.6119805]@,\$[2.1883523]@,\$[3.3113517]@,\$[1.6341534]@,\$[538.49201]@
\$[3.3767746]@,\$[2.5973269]@,\$[2.4489816]@,\$[3.1441916]@,\$[3557.0807]@
\$[2.2689122]@,\$[1.1195766]@,\$[3.0154552]@,\$[1.5876652]@,\$[344.97075]@

BE19B017
alpha = 0.14805527
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X2 X1 X4 X2 + beta_2 X2 X3 X2 X4 X2 + beta_3 X3 X2 X3 X4 X1
+ beta_4 X4 X4 X2 X2 X2
PARAMATER FOR POPULATION RANGE: beta_3
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[-0.41555406]@
\$[0.1318299]@,\$[0.10300753]@,\$[0.14536018]@,\$[0.14070507]@,\$[0.58887151]@
\$[0.12911772]@,\$[0.39839247]@,\$[0.16869722]@,\$[0.35711287]@,\$[2.8864415]@
\$[0.30684702]@,\$[0.48440469]@,\$[0.59328456]@,\$[0.43495918]@,\$[1.1270808]@
\$[0.69015973]@,\$[0.49283131]@,\$[0.53697759]@,\$[0.61525122]@,\$[2.3511323]@
\$[0.8956667]@,\$[0.75058714]@,\$[0.74999564]@,\$[0.61926381]@,\$[2.8555107]@
\$[0.92431939]@,\$[0.491738]@,\$[0.46139597]@,\$[0.59304871]@,\$[3.0711618]@
\$[0.98408143]@,\$[0.91380431]@,\$[0.66948639]@,\$[1.2886368]@,\$[7.8675394]@
\$[1.1203077]@,\$[1.2975207]@,\$[1.3915557]@,\$[1.2300207]@,\$[30.083792]@

BT2022_qiv_22_alldata

```

$[1.6036272]@,$[0.51161106]@,$[1.4038639]@,$[0.95409136]@,$[6.526032]@
$[1.1867289]@,$[0.52671854]@,$[0.75430496]@,$[0.95376535]@,$[2.9489505]@
$[1.4799522]@,$[1.8306204]@,$[1.8735557]@,$[0.8693705]@,$[73.831568]@
$[1.3620409]@,$[1.7206655]@,$[0.97638006]@,$[0.84723948]@,$[33.188364]@
$[0.8255905]@,$[2.2483526]@,$[0.95138142]@,$[2.0908664]@,$[132.61473]@
$[0.73748938]@,$[2.5608262]@,$[2.3344144]@,$[1.0579751]@,$[203.15916]@
$[1.6426779]@,$[0.87385994]@,$[1.7269475]@,$[2.5984147]@,$[50.506244]@
$[2.2809984]@,$[1.841966]@,$[2.7900124]@,$[2.1078073]@,$[377.57324]@
$[1.2822761]@,$[1.651274]@,$[2.7775461]@,$[1.4778207]@,$[139.30082]@
$[1.7488167]@,$[2.8227754]@,$[3.4582773]@,$[1.0389432]@,$[509.56754]@
$[3.3483323]@,$[1.0174247]@,$[3.6935155]@,$[1.4631523]@,$[200.44136]@

```

BE19B034

alpha = 0.061378787

MLR FIT FUNCTION

**Y = beta_0 + beta_1 X1 X3 X3 X4 X4 + beta_2 X2 X3 X2 X3 X3 + beta_3 X3 X1 X4 X1 X4
+ beta_4 X4 X4 X3 X2 X1**

PARAMATER FOR POPULATION RANGE: beta_0

DATA COLUMNS X1 X2 X3 X4 Y

```

$[0]@,$[0]@,$[0]@,$[0]@,$[-0.52248813]@
$[0.19255142]@,$[0.060143211]@,$[0.052904095]@,$[0.13512799]@,$[0.90116217]@
$[0.11420364]@,$[0.39284997]@,$[0.18919516]@,$[0.1528715]@,$[-0.71189401]@
$[0.49921903]@,$[0.54752566]@,$[0.49984751]@,$[0.47180269]@,$[-0.15582866]@
$[0.72290657]@,$[0.3408421]@,$[0.77714276]@,$[0.7011]@,$[1.8517174]@
$[0.64192844]@,$[0.84334687]@,$[0.78763014]@,$[0.90035605]@,$[3.0847619]@
$[0.46571977]@,$[0.46767862]@,$[0.71876731]@,$[1.1806426]@,$[1.3521519]@
$[0.98398643]@,$[1.053259]@,$[1.2660342]@,$[1.228015]@,$[24.32958]@
$[0.46169724]@,$[1.3430606]@,$[0.4283719]@,$[1.555381]@,$[2.0451946]@
$[1.6424059]@,$[1.2089902]@,$[0.65790727]@,$[1.6706878]@,$[27.304755]@
$[1.7894178]@,$[0.83654679]@,$[0.79091582]@,$[1.8008385]@,$[43.587302]@
$[1.2323059]@,$[1.670445]@,$[0.70104609]@,$[0.69795148]@,$[6.3325595]@
$[1.1990771]@,$[1.6705141]@,$[1.910788]@,$[0.89346516]@,$[90.428104]@
$[2.0193002]@,$[2.5306486]@,$[2.0130818]@,$[1.1183826]@,$[261.99581]@
$[1.865742]@,$[2.6761885]@,$[2.367649]@,$[1.7810561]@,$[578.34396]@
$[1.719651]@,$[2.8982478]@,$[1.2523464]@,$[1.235283]@,$[101.11073]@
$[1.4232425]@,$[1.904628]@,$[2.7473875]@,$[1.1041685]@,$[337.3978]@
$[1.1259788]@,$[1.7817319]@,$[1.8584474]@,$[3.1872222]@,$[343.27579]@
$[2.0778989]@,$[2.4352597]@,$[1.7552436]@,$[2.2795509]@,$[415.61468]@
$[2.7702462]@,$[2.7502941]@,$[1.1031046]@,$[1.3903667]@,$[128.10159]@

```

BE20B002

alpha = 0.1268469

MLR FIT FUNCTION

**Y = beta_0 + beta_1 X1 X2 X2 X3 + beta_2 X2 X1 X1 X4 X2 + beta_3 X3 X3 X1 X1 X2
+ beta_4 X4 X4 X2 X3 X4**

PARAMATER FOR POPULATION RANGE: beta_2

BT2022_qiv_22_alldata

DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@[0]@[0]@[0]@[0]@[0.57048373]@
\$[0.19312835]@[0.099911901]@[0.08034897]@[0.068426423]@[0.18107459]@
\$[0.14204016]@[0.36576394]@[0.23844438]@[0.3269994]@[0.2894749]@
\$[0.48231734]@[0.5633939]@[0.22672364]@[0.28994337]@[1.480767]@
\$[0.47490302]@[0.39026182]@[0.38852745]@[0.73050305]@[2.6864652]@
\$[0.8324895]@[0.83400896]@[0.6550558]@[0.72247344]@[4.4355667]@
\$[0.30285682]@[0.3500882]@[0.93721652]@[1.0627422]@[3.9884309]@
\$[0.83104022]@[1.0170237]@[0.72895145]@[0.64915551]@[5.277971]@
\$[0.73390454]@[0.5528891]@[0.6407474]@[1.4275748]@[3.799634]@
\$[0.97336562]@[0.80981863]@[1.4431755]@[0.59902414]@[6.3279725]@
\$[0.82982424]@[1.8009949]@[1.1592927]@[0.56793128]@[11.288552]@
\$[2.0380554]@[1.1875599]@[0.91857919]@[2.154137]@[102.4636]@
\$[1.2553145]@[0.70531758]@[2.0841662]@[1.5065351]@[35.170173]@
\$[1.7190782]@[0.74570362]@[0.96326854]@[1.5538788]@[28.205894]@
\$[2.5536872]@[2.4439386]@[1.1404725]@[1.6161191]@[378.88542]@
\$[1.2572183]@[1.335446]@[2.1113479]@[1.2658516]@[60.565555]@
\$[1.0235259]@[2.6695468]@[1.8612425]@[2.0044203]@[212.3764]@
\$[1.9725643]@[0.90104183]@[1.0916804]@[2.9443195]@[131.76481]@
\$[1.8155279]@[3.2919483]@[1.5684642]@[3.1611133]@[1071.9916]@
\$[2.213673]@[1.1299064]@[1.7357266]@[1.1112395]@[89.420812]@

BE20B004
alpha = 0.16978206
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X3 X3 X3 X4 + beta_2 X2 X2 X2 X4 X3 + beta_3 X3 X4 X4 X4 X4
+ beta_4 X4 X4 X1 X4 X3
PARAMATER FOR POPULATION RANGE: beta_4
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@[0]@[0]@[0]@[0]@[0.4919573]@
\$[0.13821019]@[0.13912497]@[0.17072725]@[0.18992335]@[0.1638886]@
\$[0.25822914]@[0.22851301]@[0.20075249]@[0.17519898]@[0.3281647]@
\$[0.34631379]@[0.26058776]@[0.44443182]@[0.34645495]@[0.2200255]@
\$[0.35117948]@[0.63378838]@[0.54668924]@[0.71263401]@[0.63525206]@
\$[0.69555574]@[0.88796254]@[0.74339508]@[0.5811816]@[1.8123438]@
\$[0.68516111]@[1.1604958]@[0.44408569]@[0.67429322]@[2.543722]@
\$[0.64440733]@[1.3899862]@[0.89043257]@[0.84626522]@[11.705991]@
\$[0.62218433]@[0.81021302]@[0.72543458]@[1.1533954]@[10.709495]@
\$[1.3379325]@[1.6541086]@[1.2061539]@[0.83483021]@[34.183196]@
\$[0.62260995]@[0.6027645]@[1.531678]@[1.4133643]@[62.962958]@
\$[1.5016029]@[1.3934333]@[0.85156748]@[0.65620268]@[13.1319]@
\$[0.93541996]@[0.636665215]@[0.86663677]@[0.74129095]@[4.551205]@
\$[1.670343]@[0.89076904]@[2.1216535]@[0.90345833]@[106.14453]@
\$[1.6968067]@[0.8206087]@[2.7691311]@[2.2096135]@[989.71332]@
\$[0.77818323]@[0.97987461]@[1.5348022]@[0.97806687]@[32.918284]@
\$[2.5923267]@[2.0715098]@[1.9708184]@[2.65925]@[1288.2658]@
\$[0.94264648]@[2.413227]@[2.7326254]@[0.96626022]@[282.84732]@

BT2022_qiv_22_alldata
\$[2.1951415]@,\$[2.9830362]@,\$[0.99068744]@,\$[1.9908137]@,\$[365.20757]@
\$[2.5286443]@,\$[2.706571]@,\$[1.323554]@,\$[3.2015562]@,\$[1487.0514]@

BE20B005

alpha = 0.14254768

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X4 X2 X3 X4 + beta_2 X2 X4 X4 X1 X4 + beta_3 X3 X3 X2 X3 X1
+ beta_4 X4 X3 X4 X4 X2

PARAMATER FOR POPULATION RANGE: beta_1

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@[1.3950643]@
\$[0.11516104]@,\$[0.054475272]@,\$[0.12435484]@,\$[0.096735227]@,\$[1.3131616]@
\$[0.38431275]@,\$[0.28384314]@,\$[0.21518332]@,\$[0.32624958]@,\$[1.1269968]@
\$[0.34941647]@,\$[0.40848081]@,\$[0.18751832]@,\$[0.28926936]@,\$[2.2614727]@
\$[0.5189395]@,\$[0.50029094]@,\$[0.79851606]@,\$[0.37823249]@,\$[2.2352154]@
\$[0.2623287]@,\$[0.32847308]@,\$[0.86750991]@,\$[0.76944618]@,\$[3.2138225]@
\$[0.75204127]@,\$[0.83849038]@,\$[0.72337269]@,\$[0.715987]@,\$[6.1041309]@
\$[0.5322806]@,\$[0.73490169]@,\$[0.50281177]@,\$[0.59055698]@,\$[1.2238145]@
\$[0.92554557]@,\$[0.73132207]@,\$[0.68292371]@,\$[1.1065308]@,\$[9.9012524]@
\$[0.48452824]@,\$[1.2018543]@,\$[1.2576308]@,\$[0.96130466]@,\$[14.172319]@
\$[0.59428396]@,\$[1.5151231]@,\$[1.8554068]@,\$[0.68744578]@,\$[10.045426]@
\$[1.4317739]@,\$[1.1463584]@,\$[1.8369138]@,\$[1.1835099]@,\$[33.360536]@
\$[1.3147499]@,\$[1.8553163]@,\$[1.9727094]@,\$[1.1535918]@,\$[51.753756]@
\$[2.003977]@,\$[2.0914469]@,\$[1.9944787]@,\$[2.2509742]@,\$[468.20256]@
\$[0.97680938]@,\$[2.5983125]@,\$[2.3314303]@,\$[1.9361826]@,\$[375.99374]@
\$[0.83527835]@,\$[2.1820974]@,\$[0.83100574]@,\$[2.1037778]@,\$[165.87411]@
\$[2.43885]@,\$[1.7574742]@,\$[1.6270998]@,\$[2.2294481]@,\$[347.03135]@
\$[2.2465975]@,\$[2.7956624]@,\$[2.5455559]@,\$[1.88048]@,\$[450.36033]@
\$[3.0302897]@,\$[2.9466272]@,\$[1.9025702]@,\$[2.2527472]@,\$[715.00412]@
\$[1.8419863]@,\$[2.319369]@,\$[1.1454055]@,\$[2.6572502]@,\$[547.07673]@

BE20B006

alpha = 0.17987886

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X3 X4 X3 X1 + beta_2 X2 X2 X1 X2 X3 + beta_3 X3 X3 X4 X4 X3
+ beta_4 X4 X1 X2 X4 X1

PARAMATER FOR POPULATION RANGE: beta_2

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[-2.9167135]@
\$[0.13146861]@,\$[0.053304263]@,\$[0.095922011]@,\$[0.12464617]@,\$[-3.6887183]@
\$[0.13041235]@,\$[0.17191648]@,\$[0.13334579]@,\$[0.20697493]@,\$[-2.170063]@
\$[0.55554399]@,\$[0.28048559]@,\$[0.57853943]@,\$[0.49286228]@,\$[-2.7915531]@
\$[0.69554136]@,\$[0.33747008]@,\$[0.24150723]@,\$[0.27463442]@,\$[-4.1078454]@
\$[0.56809976]@,\$[0.51341407]@,\$[0.37203144]@,\$[0.67751055]@,\$[-3.1283667]@
\$[1.0712442]@,\$[0.76927212]@,\$[0.96094227]@,\$[0.56708819]@,\$[-4.0145412]@
\$[1.236689]@,\$[0.73815201]@,\$[0.95288989]@,\$[1.053933]@,\$[-6.6623601]@

```

BT2022_qiv_22_alldata
$[0.65976858]@,$[0.72296995]@,$[1.0827202]@,$[1.4903692]@,$[-1.2298952]@
$[1.5300776]@,$[0.56726958]@,$[0.78676885]@,$[0.69141103]@,$[-6.3256623]@
$[0.7255685]@,$[0.58223695]@,$[0.63146771]@,$[1.7078664]@,$[-5.3049641]@
$[1.3446023]@,$[1.9179722]@,$[1.659068]@,$[1.4345122]@,$[36.652011]@
$[1.7824006]@,$[2.3583327]@,$[1.9264572]@,$[1.097411]@,$[119.16019]@
$[1.7138415]@,$[2.5430189]@,$[0.96519277]@,$[1.2843073]@,$[68.55424]@
$[2.3232805]@,$[1.1433101]@,$[2.4378447]@,$[2.5562497]@,$[-178.36141]@
$[2.1768041]@,$[1.8541258]@,$[1.4801662]@,$[1.1154287]@,$[20.932049]@
$[1.7547315]@,$[2.122533]@,$[1.7811983]@,$[1.6578567]@,$[48.247244]@
$[1.4814136]@,$[3.1535025]@,$[1.9806877]@,$[3.3939805]@,$[267.22852]@
$[3.5283501]@,$[2.622988]@,$[2.7746379]@,$[2.084999]@,$[-152.47836]@
$[2.0153017]@,$[2.3445448]@,$[1.5586072]@,$[3.5117148]@,$[-79.599479]@

```

BE20B009

alpha = 0.095839337

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X1 X2 X4 X3 + beta_2 X2 X4 X2 X1 X2 + beta_3 X3 X2 X2 X2 X1
+ beta_4 X4 X4 X1 X1 X4

PARAMATER FOR POPULATION RANGE: beta_3

DATA COLUMNS X1 X2 X3 X4 Y

```

$[0]@,$[0]@,$[0]@,$[0]@,$[2.6706377]@
$[0.19407372]@,$[0.078208751]@,$[0.18972738]@,$[0.18900349]@,$[4.1430527]@
$[0.28433252]@,$[0.13673248]@,$[0.25898538]@,$[0.22605285]@,$[4.700628]@
$[0.15070102]@,$[0.26894633]@,$[0.56856593]@,$[0.27510858]@,$[3.2452524]@
$[0.36835288]@,$[0.5105473]@,$[0.47737547]@,$[0.68378494]@,$[5.0850426]@
$[0.49189093]@,$[0.25696196]@,$[0.84572376]@,$[0.92998065]@,$[3.4929766]@
$[0.74960152]@,$[1.1304885]@,$[0.98755428]@,$[0.89006318]@,$[9.3055113]@
$[0.42371705]@,$[0.57107906]@,$[0.85856833]@,$[1.0316289]@,$[6.4048619]@
$[0.58537928]@,$[1.3610109]@,$[0.93923616]@,$[0.74678292]@,$[7.8785282]@
$[0.77830683]@,$[0.77255225]@,$[0.50014878]@,$[0.82346565]@,$[4.7141857]@
$[1.924085]@,$[1.0619737]@,$[0.82555064]@,$[1.786531]@,$[57.788372]@
$[1.5384305]@,$[0.72790792]@,$[1.0268621]@,$[0.83736991]@,$[8.7890458]@
$[1.8280983]@,$[1.2114495]@,$[1.9949423]@,$[2.2961509]@,$[118.83274]@
$[1.5662914]@,$[1.9138806]@,$[2.1846346]@,$[1.1673839]@,$[80.167756]@
$[0.90670615]@,$[2.0359786]@,$[1.8261408]@,$[2.6905414]@,$[77.199872]@
$[0.80626281]@,$[0.91339445]@,$[2.4118548]@,$[1.4239484]@,$[12.549562]@
$[2.77223]@,$[2.0209603]@,$[1.5136299]@,$[1.7743902]@,$[199.06798]@
$[1.2016072]@,$[1.1011347]@,$[1.1979567]@,$[3.0713172]@,$[105.2254]@
$[1.9865535]@,$[2.4404268]@,$[2.2841765]@,$[3.4776266]@,$[561.98772]@
$[2.0422266]@,$[1.4082154]@,$[2.7210479]@,$[3.4080832]@,$[432.85846]@

```

BE20B014

alpha = 0.056471682

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X3 X4 X3 X2 + beta_2 X2 X3 X2 X4 X1 + beta_3 X3 X4 X1 X1 X2
+ beta_4 X4 X4 X3 X1 X4

BT2022_qiv_22_alldata

PARAMATER FOR POPULATION RANGE: beta_1

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[4.0785382]@
\$[0.097525551]@,\$[0.067001958]@,\$[0.10537883]@,\$[0.097238201]@,\$[1.8121038]@
\$[0.25398528]@,\$[0.35175556]@,\$[0.30769502]@,\$[0.15270665]@,\$[0.089958046]@
\$[0.4035067]@,\$[0.23151143]@,\$[0.22295948]@,\$[0.29968996]@,\$[2.9429395]@
\$[0.62067258]@,\$[0.75016275]@,\$[0.30652804]@,\$[0.36747003]@,\$[2.8874031]@
\$[0.37575794]@,\$[0.66895012]@,\$[0.62043632]@,\$[0.57991944]@,\$[2.3003299]@
\$[1.0576973]@,\$[0.91673359]@,\$[0.8164451]@,\$[0.6269246]@,\$[7.5050593]@
\$[0.54694517]@,\$[0.67373809]@,\$[1.371775]@,\$[0.63871009]@,\$[5.6482677]@
\$[0.71586423]@,\$[1.088546]@,\$[0.71528222]@,\$[0.54359944]@,\$[6.9660067]@
\$[0.81304376]@,\$[1.0772928]@,\$[0.73801133]@,\$[1.7098447]@,\$[20.459431]@
\$[0.69880313]@,\$[1.8142375]@,\$[1.6642996]@,\$[1.0813717]@,\$[37.687713]@
\$[1.2326549]@,\$[0.82743081]@,\$[0.67159784]@,\$[1.3189472]@,\$[15.729432]@
\$[1.9255975]@,\$[0.61906779]@,\$[1.9671309]@,\$[0.73700248]@,\$[30.971193]@
\$[2.3676142]@,\$[0.95064657]@,\$[1.8658602]@,\$[0.69066687]@,\$[52.063988]@
\$[2.3347324]@,\$[1.0694324]@,\$[0.80248998]@,\$[2.0913257]@,\$[97.380059]@
\$[0.99397475]@,\$[1.1861317]@,\$[2.8685629]@,\$[0.77848237]@,\$[47.353977]@
\$[2.4269845]@,\$[2.024267]@,\$[3.0906765]@,\$[3.0218878]@,\$[1561.2099]@
\$[2.0640609]@,\$[2.1007781]@,\$[2.1446025]@,\$[1.7359147]@,\$[371.8868]@
\$[2.7559456]@,\$[3.3679624]@,\$[2.1648298]@,\$[2.4657822]@,\$[1495.1388]@
\$[2.6063416]@,\$[2.1381451]@,\$[1.7360551]@,\$[3.3910741]@,\$[1080.5565]@

BE20B016

alpha = 0.052399844

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X1 X1 X1 X3 + beta_2 X2 X2 X3 X1 X4 + beta_3 X3 X1 X2 X4 X1
+ beta_4 X4 X3 X1 X3 X2

PARAMATER FOR POPULATION RANGE: beta_2

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[-0.048498903]@
\$[0.064075971]@,\$[0.086435515]@,\$[0.1568977]@,\$[0.14385677]@,\$[0.73914765]@
\$[0.32987862]@,\$[0.18784929]@,\$[0.13427505]@,\$[0.29292409]@,\$[0.89079094]@
\$[0.2749126]@,\$[0.34785841]@,\$[0.1755923]@,\$[0.53525402]@,\$[1.6169809]@
\$[0.70449757]@,\$[0.41146475]@,\$[0.70948572]@,\$[0.2170911]@,\$[2.3586856]@
\$[0.26784693]@,\$[0.92169269]@,\$[0.79820546]@,\$[0.6552599]@,\$[2.198936]@
\$[0.93881453]@,\$[0.76461776]@,\$[0.88123414]@,\$[0.68933083]@,\$[2.7444849]@
\$[0.65350953]@,\$[0.51584528]@,\$[0.69290837]@,\$[0.41193199]@,\$[-0.20460672]@
\$[0.69229931]@,\$[1.1034282]@,\$[0.72853839]@,\$[0.81315244]@,\$[1.2555911]@
\$[0.75278975]@,\$[1.0806494]@,\$[0.62581403]@,\$[1.2969093]@,\$[1.6782137]@
\$[1.5774306]@,\$[0.67509448]@,\$[1.7126803]@,\$[1.1087478]@,\$[20.340331]@
\$[0.5786011]@,\$[0.90389331]@,\$[2.1353834]@,\$[0.72043583]@,\$[5.4284724]@
\$[1.5622936]@,\$[2.3283034]@,\$[1.2957736]@,\$[1.8053113]@,\$[61.092043]@
\$[1.6762842]@,\$[2.2561694]@,\$[1.4014107]@,\$[2.481904]@,\$[98.920763]@
\$[1.4989727]@,\$[0.89492644]@,\$[2.6470985]@,\$[2.341596]@,\$[101.73799]@
\$[0.99943721]@,\$[2.1485504]@,\$[2.1581394]@,\$[0.76692828]@,\$[34.243561]@
\$[1.9476745]@,\$[0.84146105]@,\$[2.3864196]@,\$[3.1715211]@,\$[150.53682]@

BT2022_qiv_22_alldata
\$[1.6908236]@,\$[2.5435829]@,\$[0.88072127]@,\$[1.7253234]@,\$[40.300068]@
\$[0.99086158]@,\$[3.0372664]@,\$[3.5072553]@,\$[2.8358147]@,\$[424.37347]@
\$[2.8932349]@,\$[3.7219491]@,\$[2.0282739]@,\$[2.920658]@,\$[770.98229]@

BE20B020

alpha = 0.090205499

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X3 X2 X4 X3 + beta_2 X2 X2 X2 X2 X2 + beta_3 X3 X3 X3 X4 X2
+ beta_4 X4 X1 X4 X4 X3

PARAMATER FOR POPULATION RANGE: beta_0

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[1.1909358]@
\$[0.11234828]@,\$[0.13337894]@,\$[0.14835625]@,\$[0.056435842]@,\$[1.6119537]@
\$[0.36814803]@,\$[0.33228886]@,\$[0.27690668]@,\$[0.28305322]@,\$[4.9187935]@
\$[0.41192962]@,\$[0.467962]@,\$[0.46598152]@,\$[0.22741469]@,\$[3.6465001]@
\$[0.70272656]@,\$[0.37602964]@,\$[0.79201519]@,\$[0.72297586]@,\$[4.6516267]@
\$[0.45010705]@,\$[0.95840431]@,\$[0.84612092]@,\$[0.50095049]@,\$[5.0325453]@
\$[0.56488441]@,\$[0.38666505]@,\$[0.33120082]@,\$[0.68615743]@,\$[2.9536715]@
\$[0.78952339]@,\$[1.2565662]@,\$[0.57824566]@,\$[0.41799674]@,\$[6.8999383]@
\$[1.1361657]@,\$[0.52307146]@,\$[1.2232486]@,\$[0.97969615]@,\$[11.84641]@
\$[1.7904034]@,\$[1.3455979]@,\$[0.90468037]@,\$[1.2428585]@,\$[28.001678]@
\$[1.8139657]@,\$[1.2608979]@,\$[1.8602916]@,\$[1.0300935]@,\$[53.74606]@
\$[1.9095977]@,\$[1.9972359]@,\$[1.9758758]@,\$[1.3298519]@,\$[157.87797]@
\$[1.058463]@,\$[1.3244251]@,\$[1.5843239]@,\$[1.2038623]@,\$[43.311561]@
\$[2.2583264]@,\$[2.5622497]@,\$[1.7000727]@,\$[2.1831319]@,\$[413.857]@
\$[2.3450165]@,\$[2.4246443]@,\$[2.5184951]@,\$[2.6984799]@,\$[999.29481]@
\$[2.2550816]@,\$[1.781245]@,\$[0.94499103]@,\$[1.4323213]@,\$[61.739709]@
\$[1.4948734]@,\$[2.4818716]@,\$[3.1284517]@,\$[1.4110372]@,\$[562.62629]@
\$[1.2183665]@,\$[3.1103619]@,\$[3.3713888]@,\$[2.2616305]@,\$[1519.2347]@
\$[2.9189479]@,\$[2.309803]@,\$[2.9598495]@,\$[1.5779927]@,\$[592.93805]@
\$[3.5159797]@,\$[2.1913078]@,\$[3.1398972]@,\$[3.5252236]@,\$[3054.0934]@

BE20B025

alpha = 0.092486163

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X3 X2 X4 X3 + beta_2 X2 X2 X2 X2 X2 + beta_3 X3 X2 X1 X1 X4
+ beta_4 X4 X2 X2 X4 X2

PARAMATER FOR POPULATION RANGE: beta_0

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[2.274856]@
\$[0.12392775]@,\$[0.1784104]@,\$[0.13198778]@,\$[0.084847934]@,\$[1.5235948]@
\$[0.36731928]@,\$[0.16453741]@,\$[0.22305334]@,\$[0.20032979]@,\$[3.1004204]@
\$[0.51977955]@,\$[0.2260978]@,\$[0.51202679]@,\$[0.21278375]@,\$[3.4186428]@
\$[0.78698845]@,\$[0.77234857]@,\$[0.43473346]@,\$[0.24300302]@,\$[2.9442796]@
\$[0.29677723]@,\$[0.5932779]@,\$[0.43223698]@,\$[0.78528352]@,\$[4.8963504]@
\$[0.3361522]@,\$[1.1710839]@,\$[0.37498333]@,\$[1.0220656]@,\$[19.996069]@

```

BT2022_qiv_22_alldata
$[0.39116923]@,$[1.2357319]@,$[0.91725808]@,$[0.93144214]@,$[21.70036]@
$[1.2981374]@,$[1.5332259]@,$[1.3737866]@,$[1.000054]@,$[51.158941]@
$[0.49785485]@,$[0.72002576]@,$[1.5154905]@,$[1.5400069]@,$[7.8054686]@
$[0.86582466]@,$[1.9184012]@,$[1.2523006]@,$[1.7678512]@,$[219.07808]@
$[0.94805045]@,$[1.7906826]@,$[1.2654486]@,$[1.1297737]@,$[107.15359]@
$[1.1214806]@,$[0.78361695]@,$[1.481519]@,$[1.8493994]@,$[10.38192]@
$[0.8432242]@,$[2.2033898]@,$[0.82433356]@,$[1.9320508]@,$[415.88485]@
$[1.9468366]@,$[0.75662619]@,$[2.3579697]@,$[1.7196634]@,$[0.91734864]@
$[2.4223475]@,$[1.1386196]@,$[0.77983925]@,$[0.85961467]@,$[13.42562]@
$[1.7433757]@,$[2.5916719]@,$[2.8677887]@,$[2.3357035]@,$[909.74302]@
$[2.4644154]@,$[2.6194419]@,$[1.1324232]@,$[2.4413315]@,$[1033.3516]@
$[1.9550417]@,$[1.6439057]@,$[2.9980923]@,$[3.1222334]@,$[236.1904]@
$[3.3383751]@,$[3.2685876]@,$[2.9861031]@,$[3.4891282]@,$[3503.2577]@

```

BE20B029

alpha = 0.10533058

MLR FIT FUNCTION

```

Y = beta_0 + beta_1 X1 X4 X3 X2 X2 + beta_2 X2 X4 X4 X4 X3 + beta_3 X3 X1 X2 X2 X1
+ beta_4 X4 X1 X2 X3 X1
PARAMATER FOR POPULATION RANGE: beta_2
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@,$[5.8971008]@
$[0.17809993]@,$[0.12892805]@,$[0.065344221]@,$[0.063603704]@,$[2.9670309]@
$[0.27388096]@,$[0.2662028]@,$[0.2100662]@,$[0.30047399]@,$[5.8175961]@
$[0.21003002]@,$[0.27227663]@,$[0.36237505]@,$[0.59508535]@,$[4.1694547]@
$[0.24362752]@,$[0.65234066]@,$[0.36011785]@,$[0.4771177]@,$[3.5617127]@
$[0.3232067]@,$[0.79710407]@,$[0.77997426]@,$[0.57604845]@,$[6.2395322]@
$[0.39125578]@,$[1.1043569]@,$[0.8104421]@,$[0.50575275]@,$[3.7651771]@
$[1.2725092]@,$[0.97132212]@,$[0.87559698]@,$[1.0623251]@,$[13.658899]@
$[0.83438852]@,$[1.0921063]@,$[0.59652263]@,$[0.50894784]@,$[6.3291011]@
$[1.7565202]@,$[1.1133257]@,$[0.95475701]@,$[0.56531732]@,$[17.524456]@
$[1.5681888]@,$[1.8616452]@,$[0.87695211]@,$[0.60019905]@,$[31.880833]@
$[1.6743458]@,$[0.77899706]@,$[1.6079069]@,$[1.2248025]@,$[21.340524]@
$[2.0857705]@,$[1.2786756]@,$[1.2307726]@,$[1.3637088]@,$[55.22574]@
$[1.3611378]@,$[1.0576891]@,$[0.81083943]@,$[0.78566889]@,$[13.34441]@
$[1.0078831]@,$[1.3011415]@,$[1.9835182]@,$[2.6099014]@,$[139.12331]@
$[1.5066868]@,$[2.0874132]@,$[2.6916592]@,$[2.8267511]@,$[521.92787]@
$[2.4794278]@,$[1.6269094]@,$[3.0601487]@,$[0.95586033]@,$[192.39914]@
$[3.1613472]@,$[1.6535858]@,$[2.0860732]@,$[0.88602972]@,$[190.42235]@
$[1.9189466]@,$[3.5349894]@,$[1.4621784]@,$[1.7019641]@,$[441.53369]@
$[3.1782973]@,$[1.371579]@,$[1.6231256]@,$[3.4786379]@,$[402.83578]@

```

BE20B031

alpha = 0.14449655

MLR FIT FUNCTION

```

Y = beta_0 + beta_1 X1 X2 X1 X1 X1 + beta_2 X2 X4 X3 X2 X3 + beta_3 X3 X2 X3 X2 X4

```

```

BT2022_qiv_22_alldata
+ beta_4 X4 X1 X1 X3 X1
PARAMATER FOR POPULATION RANGE: beta_0
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@[3.9362449]@
$[0.17116376]@,$[0.093805677]@,$[0.096733918]@,$[0.11889224]@,$[3.3397477]@
$[0.10983767]@,$[0.21689274]@,$[0.13573348]@,$[0.16970753]@,$[4.7603048]@
$[0.21195482]@,$[0.36769578]@,$[0.18720577]@,$[0.52271787]@,$[2.7212289]@
$[0.59287354]@,$[0.52824725]@,$[0.4234063]@,$[0.63703641]@,$[5.6191149]@
$[0.46036682]@,$[0.30511111]@,$[0.43851224]@,$[0.71013752]@,$[4.162805]@
$[1.0853827]@,$[0.82962515]@,$[0.67206073]@,$[0.80800822]@,$[12.199667]@
$[1.2129079]@,$[0.81461509]@,$[0.65419796]@,$[0.39222325]@,$[13.518664]@
$[1.5415953]@,$[1.3978926]@,$[1.1751917]@,$[1.3314444]@,$[100.22336]@
$[1.61661]@,$[0.66053714]@,$[0.8559603]@,$[1.362246]@,$[58.822071]@
$[0.54381634]@,$[0.78341809]@,$[1.8722496]@,$[0.59085507]@,$[13.927703]@
$[1.1118622]@,$[1.3013886]@,$[2.1045684]@,$[0.90810533]@,$[76.621642]@
$[0.60407319]@,$[1.137221]@,$[0.93400935]@,$[1.4425357]@,$[18.751255]@
$[1.9134696]@,$[1.9069207]@,$[1.7413413]@,$[1.6694922]@,$[373.62819]@
$[0.75561148]@,$[2.4620442]@,$[2.7885959]@,$[1.8344829]@,$[615.68669]@
$[1.7103231]@,$[1.1359434]@,$[2.349815]@,$[1.9553343]@,$[301.12331]@
$[2.0417538]@,$[2.1018875]@,$[1.5116757]@,$[2.7500553]@,$[590.06228]@
$[2.7356866]@,$[2.9967807]@,$[2.4581797]@,$[2.1525654]@,$[2233.9546]@
$[2.916814]@,$[1.0619466]@,$[1.6478731]@,$[1.1925045]@,$[675.39833]@
$[3.5697324]@,$[1.5513966]@,$[2.695886]@,$[1.5992584]@,$[2578.3057]@

```

```

BE20B034
alpha = 0.082482298
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X2 X3 X1 X4 + beta_2 X2 X4 X2 X2 X2 + beta_3 X3 X2 X1 X1 X3
+ beta_4 X4 X1 X3 X1 X2
PARAMATER FOR POPULATION RANGE: beta_1
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@[1.3292448]@
$[0.12865272]@,$[0.088421329]@,$[0.16333222]@,$[0.19678473]@,$[1.6746246]@
$[0.39828282]@,$[0.22783468]@,$[0.33671524]@,$[0.31586216]@,$[3.2910179]@
$[0.20672641]@,$[0.38963925]@,$[0.40939278]@,$[0.47291869]@,$[0.56751645]@
$[0.63660432]@,$[0.62995336]@,$[0.56427531]@,$[0.47495662]@,$[2.1615501]@
$[0.47917903]@,$[0.77091665]@,$[0.69824835]@,$[0.36966281]@,$[3.7715871]@
$[0.87227997]@,$[1.1727261]@,$[0.84489956]@,$[0.7612465]@,$[19.396199]@
$[0.63558566]@,$[0.99841066]@,$[1.0744663]@,$[0.66988444]@,$[11.01552]@
$[0.62379557]@,$[1.4039145]@,$[0.76651394]@,$[1.5147589]@,$[35.105019]@
$[0.60453965]@,$[1.6418372]@,$[0.56256503]@,$[1.4573156]@,$[54.625784]@
$[0.92664001]@,$[0.96822664]@,$[1.7538264]@,$[0.68128036]@,$[27.94325]@
$[0.99197816]@,$[1.5246904]@,$[1.8683393]@,$[1.922597]@,$[124.60823]@
$[0.80698493]@,$[1.1225803]@,$[0.91162391]@,$[1.5042953]@,$[25.786715]@
$[1.3801105]@,$[2.4158182]@,$[0.9097575]@,$[1.217322]@,$[246.74031]@
$[1.293848]@,$[1.8870916]@,$[2.0447803]@,$[1.4927024]@,$[245.8203]@
$[1.6811671]@,$[0.96733914]@,$[2.7076479]@,$[1.0755457]@,$[191.69573]@

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BT2022_qiv_22_alldata
\$[1.783297]@,\$[3.1328575]@,\$[1.2488282]@,\$[0.92902544]@,\$[581.04538]@
\$[3.0244204]@,\$[1.031981]@,\$[1.9186412]@,\$[1.1568542]@,\$[395.22826]@
\$[1.8143053]@,\$[2.2495834]@,\$[1.6825498]@,\$[2.4470769]@,\$[670.31912]@
\$[3.4705133]@,\$[1.5185441]@,\$[3.5296622]@,\$[2.9150719]@,\$[3075.1946]@

BE20B036
alpha = 0.17811188
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X2 X3 X1 X2 + beta_2 X2 X2 X4 X4 X1 + beta_3 X3 X2 X3 X4 X1
+ beta_4 X4 X2 X1 X3 X4
PARAMATER FOR POPULATION RANGE: beta_4
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@[1.9915578]@
\$[0.086808638]@,\$[0.14831955]@,\$[0.066371452]@,\$[0.1782601]@,\$[1.8389593]@
\$[0.39817398]@,\$[0.31483679]@,\$[0.25421423]@,\$[0.2905518]@,\$[0.75948883]@
\$[0.41617335]@,\$[0.31633543]@,\$[0.50481711]@,\$[0.22213639]@,\$[2.6462241]@
\$[0.27188778]@,\$[0.5368602]@,\$[0.60586418]@,\$[0.58555759]@,\$[3.3781413]@
\$[0.47906009]@,\$[0.62302302]@,\$[0.95053036]@,\$[0.67158084]@,\$[4.228334]@
\$[0.96965039]@,\$[0.49905213]@,\$[0.89461535]@,\$[0.89857644]@,\$[5.7590969]@
\$[1.0688392]@,\$[0.55231883]@,\$[0.61948009]@,\$[0.38374574]@,\$[2.6830446]@
\$[1.375667]@,\$[1.1553748]@,\$[0.54745687]@,\$[0.84805641]@,\$[10.856999]@
\$[0.78950683]@,\$[0.50422335]@,\$[1.1009293]@,\$[0.87831716]@,\$[5.0998386]@
\$[1.6781595]@,\$[1.0114624]@,\$[0.76530784]@,\$[1.7442252]@,\$[36.990028]@
\$[1.9114721]@,\$[1.0152983]@,\$[2.0300939]@,\$[1.5826596]@,\$[69.775824]@
\$[1.3126155]@,\$[0.90952669]@,\$[1.4755808]@,\$[1.7064689]@,\$[34.802765]@
\$[0.77094753]@,\$[2.288932]@,\$[1.4457831]@,\$[1.1776486]@,\$[41.755886]@
\$[2.2788746]@,\$[2.4839964]@,\$[0.94596353]@,\$[1.3939033]@,\$[201.50379]@
\$[2.0361927]@,\$[2.5571572]@,\$[1.881631]@,\$[1.9643604]@,\$[418.62894]@
\$[2.8524248]@,\$[2.8983636]@,\$[1.3408677]@,\$[2.997558]@,\$[1202.1784]@
\$[2.501587]@,\$[3.0616881]@,\$[2.0708824]@,\$[2.8368604]@,\$[1303.4741]@
\$[1.8121472]@,\$[3.0616518]@,\$[1.7660072]@,\$[1.1420235]@,\$[266.67371]@
\$[3.5866984]@,\$[0.97241141]@,\$[1.8056231]@,\$[2.8653593]@,\$[307.40561]@

BE20B037
alpha = 0.16237433
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X3 X3 X3 X3 + beta_2 X2 X3 X2 X2 X1 + beta_3 X3 X1 X4 X3 X3
+ beta_4 X4 X4 X2 X4 X4
PARAMATER FOR POPULATION RANGE: beta_4
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@[0.85930023]@
\$[0.19818566]@,\$[0.071191937]@,\$[0.095478904]@,\$[0.11128316]@,\$[1.4850877]@
\$[0.27567253]@,\$[0.14488665]@,\$[0.36763413]@,\$[0.37288745]@,\$[1.4590662]@
\$[0.50956079]@,\$[0.57210218]@,\$[0.56114686]@,\$[0.23904311]@,\$[2.5914051]@
\$[0.44277474]@,\$[0.73987587]@,\$[0.6679307]@,\$[0.65920136]@,\$[1.8205843]@
\$[0.98054244]@,\$[0.83232446]@,\$[0.36339941]@,\$[0.55326509]@,\$[1.4816593]@

BT2022_qiv_22_alldata

$\$[0.42349842]@, \$[0.81284163]@, \$[0.74880263]@, \$[0.93885059]@, \$[-0.3955554]@$
 $\$[1.2563069]@, \$[0.50424637]@, \$[0.3651346]@, \$[0.36057154]@, \$[1.2286046]@$
 $\$[0.42831273]@, \$[0.69676255]@, \$[1.068092]@, \$[0.55421229]@, \$[2.3801604]@$
 $\$[0.56351853]@, \$[0.83658491]@, \$[0.54088035]@, \$[0.46460528]@, \$[1.2427702]@$
 $\$[0.99464092]@, \$[0.5922188]@, \$[1.6923086]@, \$[1.1540957]@, \$[32.093001]@$
 $\$[1.4382693]@, \$[1.2554127]@, \$[1.5545906]@, \$[1.9732274]@, \$[17.551772]@$
 $\$[1.1795915]@, \$[1.8601444]@, \$[2.2665452]@, \$[1.6758836]@, \$[132.74831]@$
 $\$[2.1826411]@, \$[1.1660876]@, \$[1.2761341]@, \$[0.66986184]@, \$[31.243486]@$
 $\$[2.7299472]@, \$[1.6976298]@, \$[2.3343324]@, \$[1.6177905]@, \$[356.39075]@$
 $\$[1.1732446]@, \$[2.3354039]@, \$[1.5115905]@, \$[2.233024]@, \$[-32.845767]@$
 $\$[3.0042021]@, \$[1.3925946]@, \$[2.1431039]@, \$[2.7521694]@, \$[229.53745]@$
 $\$[2.7775385]@, \$[0.9694726]@, \$[1.0231527]@, \$[2.1011241]@, \$[-7.2725687]@$
 $\$[2.0409371]@, \$[2.3744328]@, \$[2.692591]@, \$[3.4383529]@, \$[66.997043]@$
 $\$[2.1551031]@, \$[2.2412272]@, \$[1.9823993]@, \$[0.96418245]@, \$[206.16302]@$

BE20B040

alpha = 0.077987879

MLR FIT FUNCTION

$Y = \beta_0 + \beta_1 X_1 X_4 X_2 X_1 X_1 + \beta_2 X_2 X_4 X_2 X_3 X_2 + \beta_3 X_3 X_1 X_4 X_1 X_1$
 $+ \beta_4 X_4 X_2 X_3 X_3 X_4$

PARAMATER FOR POPULATION RANGE: beta_3

DATA COLUMNS X1 X2 X3 X4 Y

$\$[0]@, \$[0]@, \$[0]@, \$[0]@, \$[2.2027956]@$
 $\$[0.18716562]@, \$[0.19134215]@, \$[0.11378109]@, \$[0.15277394]@, \$[-0.16226894]@$
 $\$[0.2557912]@, \$[0.27552283]@, \$[0.25248675]@, \$[0.35528597]@, \$[1.6283451]@$
 $\$[0.34190198]@, \$[0.54498649]@, \$[0.52620487]@, \$[0.30512804]@, \$[2.6662888]@$
 $\$[0.60914019]@, \$[0.32020356]@, \$[0.40176723]@, \$[0.23478911]@, \$[0.35048141]@$
 $\$[0.45767513]@, \$[0.88914858]@, \$[0.47419109]@, \$[0.7550235]@, \$[3.1214322]@$
 $\$[1.1542277]@, \$[0.8703881]@, \$[0.840199]@, \$[0.55830232]@, \$[4.4963343]@$
 $\$[0.83830643]@, \$[0.84349039]@, \$[0.48148288]@, \$[1.2910448]@, \$[5.5614756]@$
 $\$[1.5639029]@, \$[1.3632948]@, \$[0.72074765]@, \$[0.70979831]@, \$[12.044976]@$
 $\$[1.2735102]@, \$[0.75544204]@, \$[0.78185084]@, \$[1.2008337]@, \$[6.7910581]@$
 $\$[1.1588415]@, \$[0.89298476]@, \$[0.58321032]@, \$[1.9011937]@, \$[13.225518]@$
 $\$[1.1547507]@, \$[1.2502885]@, \$[1.1034567]@, \$[1.5787486]@, \$[37.310057]@$
 $\$[2.2110491]@, \$[2.1982677]@, \$[2.1981258]@, \$[0.80625947]@, \$[152.58902]@$
 $\$[1.8697576]@, \$[1.0742448]@, \$[1.2909318]@, \$[2.4709168]@, \$[69.378305]@$
 $\$[2.5564878]@, \$[2.777022]@, \$[0.80866224]@, \$[1.1803086]@, \$[149.55621]@$
 $\$[1.4962601]@, \$[2.2037137]@, \$[2.1300926]@, \$[2.1842811]@, \$[497.52875]@$
 $\$[2.011329]@, \$[1.3339418]@, \$[2.2578538]@, \$[2.9010968]@, \$[311.91224]@$
 $\$[1.0218055]@, \$[0.98029329]@, \$[1.9625814]@, \$[2.6985092]@, \$[132.9102]@$
 $\$[2.8301174]@, \$[3.0680069]@, \$[2.1538459]@, \$[1.9343438]@, \$[990.03634]@$
 $\$[3.015688]@, \$[2.6264318]@, \$[2.4888275]@, \$[1.4502435]@, \$[562.0582]@$

BS20B001

alpha = 0.19328348

MLR FIT FUNCTION

BT2022_qiv_22_alldata

Y = beta_0 + beta_1 X1 X4 X1 X3 X2 + beta_2 X2 X1 X1 X1 X3 + beta_3 X3 X3 X3 X1 X4
+ beta_4 X4 X3 X2 X4 X4

PARAMATER FOR POPULATION RANGE: beta_3

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[2.9719772]@
\$[0.19064435]@,\$[0.17068771]@,\$[0.14266746]@,\$[0.16348173]@,\$[3.9456078]@
\$[0.27264615]@,\$[0.31296688]@,\$[0.15831175]@,\$[0.34310373]@,\$[2.5308572]@
\$[0.44129548]@,\$[0.35064111]@,\$[0.23547027]@,\$[0.29296456]@,\$[2.6009696]@
\$[0.73253703]@,\$[0.5730767]@,\$[0.28827962]@,\$[0.4164592]@,\$[2.3039355]@
\$[0.96267365]@,\$[0.55345525]@,\$[0.38958134]@,\$[0.89379007]@,\$[3.0034129]@
\$[0.44172725]@,\$[0.84395565]@,\$[0.91341205]@,\$[0.5268844]@,\$[3.4758807]@
\$[1.1576479]@,\$[0.69843074]@,\$[0.80164878]@,\$[0.47198967]@,\$[6.7733344]@
\$[1.4071369]@,\$[0.48250507]@,\$[0.64380888]@,\$[1.3093632]@,\$[8.8211323]@
\$[0.63928429]@,\$[1.7994616]@,\$[0.58553266]@,\$[0.51350153]@,\$[4.5471952]@
\$[0.96869079]@,\$[1.9462007]@,\$[0.94562134]@,\$[0.65397387]@,\$[10.340075]@
\$[1.2579011]@,\$[0.59006844]@,\$[1.4872435]@,\$[1.5327418]@,\$[17.295682]@
\$[1.9780872]@,\$[0.7070341]@,\$[1.5228574]@,\$[0.91445881]@,\$[35.893203]@
\$[0.83094599]@,\$[2.289521]@,\$[2.4020861]@,\$[1.3753528]@,\$[39.23504]@
\$[2.1549303]@,\$[2.5018881]@,\$[2.0409383]@,\$[2.378539]@,\$[334.01361]@
\$[2.5485462]@,\$[2.8953506]@,\$[1.2413067]@,\$[2.8557852]@,\$[393.35093]@
\$[2.4037478]@,\$[2.1024161]@,\$[1.2321643]@,\$[2.4788072]@,\$[221.13938]@
\$[2.8163561]@,\$[1.4102473]@,\$[1.9255973]@,\$[3.1337144]@,\$[398.92284]@
\$[1.9431631]@,\$[1.5644201]@,\$[2.4403074]@,\$[3.2226118]@,\$[312.10494]@
\$[3.1768955]@,\$[1.0436459]@,\$[1.8750277]@,\$[3.6194655]@,\$[425.36388]@

BS20B002

alpha = 0.14616787

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X1 X1 X1 X3 + beta_2 X2 X4 X4 X2 X4 + beta_3 X3 X1 X3 X4 X4
+ beta_4 X4 X3 X2 X4 X3

PARAMATER FOR POPULATION RANGE: beta_4

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[2.3924325]@
\$[0.16653427]@,\$[0.12610708]@,\$[0.12960191]@,\$[0.1239442]@,\$[3.7468556]@
\$[0.33705415]@,\$[0.17374642]@,\$[0.13639864]@,\$[0.22568936]@,\$[5.1855569]@
\$[0.49644924]@,\$[0.40232116]@,\$[0.35996073]@,\$[0.54777733]@,\$[2.4882026]@
\$[0.37258317]@,\$[0.27813578]@,\$[0.69029375]@,\$[0.36941583]@,\$[4.3426599]@
\$[0.29373661]@,\$[0.55307743]@,\$[0.86102122]@,\$[0.76635605]@,\$[3.5111852]@
\$[0.32440415]@,\$[0.71414262]@,\$[0.81400994]@,\$[0.73489932]@,\$[2.8240014]@
\$[0.47582005]@,\$[1.1501018]@,\$[0.97548705]@,\$[1.3958637]@,\$[11.879096]@
\$[0.63290151]@,\$[0.67863415]@,\$[1.3067595]@,\$[0.55005619]@,\$[3.8085491]@
\$[0.94067194]@,\$[1.2864231]@,\$[0.61646454]@,\$[1.095523]@,\$[6.3680001]@
\$[1.4251435]@,\$[1.1810283]@,\$[0.69803049]@,\$[1.3267843]@,\$[7.3918096]@
\$[1.7146154]@,\$[1.6288553]@,\$[1.744144]@,\$[0.913211]@,\$[3.6162835]@
\$[2.1423347]@,\$[0.89680486]@,\$[2.3696959]@,\$[0.9986055]@,\$[-10.49984]@
\$[2.1156038]@,\$[1.925147]@,\$[2.5340055]@,\$[1.4811395]@,\$[35.229262]@
\$[0.7406824]@,\$[1.7362468]@,\$[1.152191]@,\$[1.1986866]@,\$[13.965262]@

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BT2022_qiv_22_alldata
$[1.670541]@,$[1.647058]@,$[2.3533763]@,$[1.4356392]@,$[32.436325]@
$[0.84620077]@,$[2.3133687]@,$[2.1262523]@,$[1.6015517]@,$[68.068831]@
$[1.5221602]@,$[1.0255824]@,$[2.6223234]@,$[3.3274518]@,$[160.79148]@
$[2.4017533]@,$[1.3947692]@,$[3.2949519]@,$[1.958939]@,$[58.430432]@
$[1.147376]@,$[1.5109407]@,$[3.7755439]@,$[3.1139584]@,$[375.03414]@

BS20B003
alpha = 0.15431322
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X4 X1 X3 X4 + beta_2 X2 X1 X2 X1 X3 + beta_3 X3 X3 X3 X2 X2
+ beta_4 X4 X4 X1 X1 X4
PARAMATER FOR POPULATION RANGE: beta_1
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@,$[-0.52671548]@
$[0.062163358]@,$[0.19511709]@,$[0.058773179]@,$[0.13203651]@,$[-0.54845417]@
$[0.23985042]@,$[0.38574695]@,$[0.36166778]@,$[0.37440233]@,$[-0.45182693]@
$[0.49858276]@,$[0.23072695]@,$[0.28634807]@,$[0.56617252]@,$[-1.0031525]@
$[0.76643604]@,$[0.55247001]@,$[0.46697593]@,$[0.68356728]@,$[0.21994938]@
$[0.80897554]@,$[0.37645141]@,$[0.31729682]@,$[0.77870008]@,$[-0.37701837]@
$[0.71742316]@,$[0.53166887]@,$[0.97206024]@,$[0.76598707]@,$[3.0118519]@
$[1.0680626]@,$[0.7996056]@,$[1.2592921]@,$[1.3461909]@,$[15.839454]@
$[1.4362851]@,$[1.0131789]@,$[0.507618]@,$[1.2365069]@,$[11.235107]@
$[0.54076726]@,$[0.57517058]@,$[1.3112271]@,$[0.94224344]@,$[1.9177341]@
$[0.71639135]@,$[1.8646847]@,$[1.2511554]@,$[1.8051253]@,$[21.979497]@
$[0.93511204]@,$[1.6570067]@,$[2.0703087]@,$[1.3464616]@,$[52.872041]@
$[2.1910363]@,$[1.8326347]@,$[1.3503788]@,$[2.3300776]@,$[224.55331]@
$[1.375055]@,$[2.0294389]@,$[2.0622175]@,$[2.0395053]@,$[151.81084]@
$[2.5919362]@,$[1.101544]@,$[1.7347417]@,$[1.8082358]@,$[235.09297]@
$[2.2980202]@,$[2.2780295]@,$[2.8216725]@,$[1.3008064]@,$[390.27551]@
$[1.7075271]@,$[2.4774539]@,$[1.4495813]@,$[2.4552193]@,$[191.24608]@
$[1.3961347]@,$[1.6330559]@,$[2.2006542]@,$[2.8621817]@,$[235.8292]@
$[3.0163342]@,$[3.3329597]@,$[3.270656]@,$[2.8305005]@,$[2242.0077]@
$[3.6502794]@,$[2.3289805]@,$[2.0438997]@,$[1.2580396]@,$[517.26304]@

BS20B004
alpha = 0.1289687
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X3 X3 X3 X3 + beta_2 X2 X1 X1 X2 X4 + beta_3 X3 X3 X4 X2 X2
+ beta_4 X4 X1 X1 X1 X2
PARAMATER FOR POPULATION RANGE: beta_0
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@,$[-0.97365079]@
$[0.16221902]@,$[0.19847731]@,$[0.19888893]@,$[0.096194313]@,$[-1.9379572]@
$[0.36575302]@,$[0.23213925]@,$[0.30241695]@,$[0.39627902]@,$[-1.8965151]@
$[0.15448455]@,$[0.3375883]@,$[0.53518212]@,$[0.49970022]@,$[0.46133752]@
$[0.54328135]@,$[0.26105193]@,$[0.21978093]@,$[0.28313679]@,$[0.068493001]@

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BT2022_qiv_22_alldata

$\$[0.94102822]@, \$[0.49936929]@, \$[0.66656112]@, \$[0.79493527]@, \$[2.7047522]@$
 $\$[0.45777245]@, \$[0.89317145]@, \$[0.72876027]@, \$[0.51062504]@, \$[-0.093016684]@$
 $\$[1.2545203]@, \$[0.63797112]@, \$[0.55480784]@, \$[0.9637962]@, \$[2.5538282]@$
 $\$[0.51494755]@, \$[0.40429383]@, \$[0.85274596]@, \$[1.1501887]@, \$[1.855452]@$
 $\$[1.2819355]@, \$[1.3342935]@, \$[0.8302007]@, \$[0.54845266]@, \$[7.2974823]@$
 $\$[1.3546115]@, \$[0.83739889]@, \$[0.89481557]@, \$[1.9167261]@, \$[12.458019]@$
 $\$[0.57435675]@, \$[1.2421629]@, \$[0.84099519]@, \$[1.4383082]@, \$[6.6838081]@$
 $\$[1.6757453]@, \$[0.80549137]@, \$[1.9164335]@, \$[1.3476425]@, \$[131.03768]@$
 $\$[2.4915949]@, \$[1.9981185]@, \$[0.963293]@, \$[1.4635428]@, \$[95.843246]@$
 $\$[1.9806867]@, \$[1.2062957]@, \$[1.0468763]@, \$[1.7180967]@, \$[41.580929]@$
 $\$[2.9353607]@, \$[2.3827031]@, \$[2.0301956]@, \$[2.8748575]@, \$[724.71451]@$
 $\$[1.2797214]@, \$[1.125505]@, \$[2.8750972]@, \$[1.5544532]@, \$[504.79181]@$
 $\$[2.8518874]@, \$[1.7218418]@, \$[3.296652]@, \$[0.92210649]@, \$[1872.8571]@$
 $\$[2.6512718]@, \$[1.6973039]@, \$[1.1206495]@, \$[1.5767765]@, \$[110.87543]@$
 $\$[3.7056352]@, \$[2.037898]@, \$[1.2849711]@, \$[3.5739512]@, \$[639.74168]@$

BS20B005

alpha = 0.12462603
 MLR FIT FUNCTION
 $Y = \beta_0 + \beta_1 X_1 X_2 X_1 X_2 X_3 + \beta_2 X_2 X_4 X_4 X_1 X_3 + \beta_3 X_3 X_2 X_1 X_2 X_2$
 $+ \beta_4 X_4 X_1 X_1 X_4 X_3$
 PARAMATER FOR POPULATION RANGE: beta_1
 DATA COLUMNS X1 X2 X3 X4 Y
 $\$[0]@, \$[0]@, \$[0]@, \$[0]@, \$[0.26590158]@$
 $\$[0.1831389]@, \$[0.12892293]@, \$[0.17399709]@, \$[0.18022602]@, \$[1.7284657]@$
 $\$[0.32365106]@, \$[0.35984359]@, \$[0.35571653]@, \$[0.16842197]@, \$[1.4064815]@$
 $\$[0.26074828]@, \$[0.28456663]@, \$[0.37552427]@, \$[0.45155931]@, \$[1.7858742]@$
 $\$[0.6901096]@, \$[0.26237928]@, \$[0.24160053]@, \$[0.2362794]@, \$[0.46570622]@$
 $\$[0.968133]@, \$[0.6348453]@, \$[0.61034997]@, \$[0.96922482]@, \$[0.83807383]@$
 $\$[0.75122285]@, \$[0.97250898]@, \$[0.72657148]@, \$[0.31921861]@, \$[2.4165351]@$
 $\$[1.2226547]@, \$[1.2001427]@, \$[1.2733763]@, \$[1.0437255]@, \$[1.963813]@$
 $\$[1.5543596]@, \$[0.96686402]@, \$[1.5947478]@, \$[0.98647516]@, \$[1.337475]@$
 $\$[0.45796974]@, \$[0.91569185]@, \$[1.7823622]@, \$[1.1503462]@, \$[-3.1600574]@$
 $\$[1.6667348]@, \$[1.8338026]@, \$[1.5464401]@, \$[1.1919686]@, \$[32.303716]@$
 $\$[2.0508599]@, \$[1.2249557]@, \$[1.9358698]@, \$[0.61447563]@, \$[27.411115]@$
 $\$[1.9402765]@, \$[2.2091613]@, \$[1.6983453]@, \$[1.1467442]@, \$[95.168874]@$
 $\$[1.8958966]@, \$[2.5699257]@, \$[2.5201862]@, \$[0.94290488]@, \$[256.86026]@$
 $\$[2.0629607]@, \$[1.6586444]@, \$[0.91548517]@, \$[1.0252143]@, \$[23.630218]@$
 $\$[1.681819]@, \$[2.4003941]@, \$[1.9303966]@, \$[1.5903977]@, \$[77.556566]@$
 $\$[1.1003391]@, \$[2.7016965]@, \$[2.7244867]@, \$[3.0324595]@, \$[-154.15624]@$
 $\$[1.5729711]@, \$[3.1605919]@, \$[1.6806398]@, \$[1.3532403]@, \$[222.96119]@$
 $\$[3.3180219]@, \$[3.0139316]@, \$[3.5453832]@, \$[3.4578997]@, \$[-503.90183]@$
 $\$[1.423742]@, \$[1.0953127]@, \$[1.0278743]@, \$[1.4940032]@, \$[-6.8529534]@$

BS20B006

alpha = 0.15586649

BT2022_qiv_22_alldata

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X1 X2 X4 X3 + beta_2 X2 X4 X3 X3 X3 + beta_3 X3 X2 X1 X2 X1
+ beta_4 X4 X3 X3 X4 X1

PARAMATER FOR POPULATION RANGE: beta_2

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[4.2623367]@
\$[0.096156796]@,\$[0.093442416]@,\$[0.15831429]@,\$[0.057396663]@,\$[3.7843959]@
\$[0.29225921]@,\$[0.11334323]@,\$[0.14701966]@,\$[0.27477464]@,\$[5.6886813]@
\$[0.23490035]@,\$[0.16881837]@,\$[0.34763962]@,\$[0.21619914]@,\$[5.4188534]@
\$[0.65104521]@,\$[0.78016224]@,\$[0.67127176]@,\$[0.76305364]@,\$[4.7906784]@
\$[0.92982257]@,\$[0.49584357]@,\$[0.80119154]@,\$[0.9079861]@,\$[7.3588937]@
\$[1.0191804]@,\$[0.55269766]@,\$[0.73877618]@,\$[0.65898905]@,\$[8.1293777]@
\$[0.96318313]@,\$[1.2714493]@,\$[0.77804726]@,\$[0.63162755]@,\$[11.424684]@
\$[0.61491552]@,\$[0.70537356]@,\$[1.0682953]@,\$[1.4453307]@,\$[13.842929]@
\$[0.80559684]@,\$[1.3582955]@,\$[1.5510457]@,\$[0.7490218]@,\$[26.975528]@
\$[1.6721255]@,\$[0.5453072]@,\$[1.6110546]@,\$[1.3745345]@,\$[43.396367]@
\$[1.3232738]@,\$[1.863864]@,\$[0.72702051]@,\$[1.6887449]@,\$[33.823386]@
\$[0.92299082]@,\$[1.3752299]@,\$[1.8682121]@,\$[1.9290871]@,\$[111.55394]@
\$[1.3517152]@,\$[0.92108462]@,\$[1.4136733]@,\$[1.2985325]@,\$[39.266485]@
\$[1.4270243]@,\$[2.1059103]@,\$[1.6336099]@,\$[1.1055072]@,\$[106.95229]@
\$[0.91119481]@,\$[2.3325992]@,\$[2.2901255]@,\$[1.690581]@,\$[260.40573]@
\$[3.0135062]@,\$[2.4791702]@,\$[1.7283947]@,\$[1.4703741]@,\$[487.70865]@
\$[1.1256055]@,\$[3.225189]@,\$[1.3307822]@,\$[2.4009998]@,\$[173.72385]@
\$[1.6022257]@,\$[2.0705973]@,\$[1.7589774]@,\$[1.1610477]@,\$[141.75575]@
\$[2.2201964]@,\$[2.6230154]@,\$[1.6752134]@,\$[1.6751583]@,\$[345.22833]@

BS20B007

alpha = 0.15548433

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X2 X1 X1 X4 + beta_2 X2 X1 X2 X2 X3 + beta_3 X3 X2 X2 X4 X4
+ beta_4 X4 X4 X3 X1 X1

PARAMATER FOR POPULATION RANGE: beta_3

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[-1.0652836]@
\$[0.058016897]@,\$[0.062773502]@,\$[0.086353014]@,\$[0.072962279]@,\$[1.2610298]@
\$[0.39010169]@,\$[0.3680634]@,\$[0.39238372]@,\$[0.36552617]@,\$[0.16858521]@
\$[0.26449418]@,\$[0.43275521]@,\$[0.26644137]@,\$[0.22653537]@,\$[0.40197796]@
\$[0.57206759]@,\$[0.75215061]@,\$[0.63072079]@,\$[0.53806773]@,\$[0.93658611]@
\$[0.2903018]@,\$[0.95772679]@,\$[0.77311912]@,\$[0.91620874]@,\$[-0.031432475]@
\$[0.70589183]@,\$[1.1712267]@,\$[0.87796917]@,\$[0.7503767]@,\$[1.5313565]@
\$[0.95252995]@,\$[0.87438009]@,\$[0.81226067]@,\$[0.61124276]@,\$[-1.0560025]@
\$[0.65482681]@,\$[0.69706717]@,\$[1.4450334]@,\$[1.0886017]@,\$[-0.63414944]@
\$[1.3806656]@,\$[0.65220218]@,\$[1.3260562]@,\$[1.0950785]@,\$[0.55971074]@
\$[0.97075863]@,\$[1.1690804]@,\$[1.8892639]@,\$[1.6335863]@,\$[9.2650282]@
\$[0.62266973]@,\$[0.7159734]@,\$[1.6927217]@,\$[0.7185583]@,\$[1.3292334]@
\$[0.61581652]@,\$[1.2902729]@,\$[1.9074587]@,\$[1.4363984]@,\$[8.326171]@
\$[2.2046893]@,\$[2.5891453]@,\$[2.4043171]@,\$[1.8149557]@,\$[17.56741]@

```

BT2022_qiv_22_alldata
$[1.1007546]@,$[2.0706747]@,$[0.85451485]@,$[1.6079053]@,$[3.3005842]@
$[0.87775947]@,$[1.3861477]@,$[0.84428425]@,$[0.76416761]@,$[3.3616676]@
$[2.1368606]@,$[1.3647957]@,$[1.6233983]@,$[2.3568794]@,$[-31.039289]@
$[2.7988527]@,$[2.6598625]@,$[2.9013121]@,$[3.1028282]@,$[-13.081511]@
$[2.4418631]@,$[1.5438319]@,$[1.5112617]@,$[1.6055348]@,$[-78.231676]@
$[1.9833321]@,$[2.0503329]@,$[3.0922045]@,$[3.2709669]@,$[175.23494]@

```

BS20B008

alpha = 0.16855037

MLR FIT FUNCTION

```

Y = beta_0 + beta_1 X1 X3 X3 X1 X4 + beta_2 X2 X2 X2 X1 X3 + beta_3 X3 X3 X3 X4 X3
+ beta_4 X4 X2 X4 X2 X4

```

PARAMATER FOR POPULATION RANGE: beta_4

DATA COLUMNS X1 X2 X3 X4 Y

```

$[0]@,$[0]@,$[0]@,$[0]@,$[1.7112156]@
$[0.083182346]@,$[0.083359942]@,$[0.067474661]@,$[0.10124789]@,$[1.442634]@
$[0.3418858]@,$[0.35516539]@,$[0.18601539]@,$[0.11436862]@,$[1.3646117]@
$[0.15017757]@,$[0.21827431]@,$[0.2386931]@,$[0.4626994]@,$[3.4208773]@
$[0.37281634]@,$[0.68697331]@,$[0.70190977]@,$[0.43679834]@,$[1.7861411]@
$[0.8535606]@,$[0.36060212]@,$[0.34738507]@,$[0.95705235]@,$[1.9907972]@
$[0.56972435]@,$[0.73986445]@,$[0.62988434]@,$[0.70431148]@,$[2.8144293]@
$[1.2673932]@,$[1.1559856]@,$[0.85115787]@,$[0.97528265]@,$[12.215638]@
$[1.0796861]@,$[0.81969397]@,$[1.1696077]@,$[0.42017671]@,$[12.735583]@
$[1.7140664]@,$[1.1882305]@,$[1.0213748]@,$[1.4589481]@,$[46.562948]@
$[1.456365]@,$[0.65736381]@,$[1.474887]@,$[1.6672204]@,$[94.618114]@
$[1.2486849]@,$[0.88107823]@,$[1.5393573]@,$[0.7253515]@,$[42.622465]@
$[1.4974031]@,$[0.68355191]@,$[1.8689336]@,$[1.440794]@,$[176.51599]@
$[1.8191109]@,$[1.2541678]@,$[1.5760561]@,$[1.1391689]@,$[99.986508]@
$[2.3989716]@,$[1.5935807]@,$[2.0408571]@,$[2.5191569]@,$[683.59442]@
$[1.7028076]@,$[0.82659395]@,$[0.79104171]@,$[2.5071137]@,$[59.592653]@
$[1.8990322]@,$[2.7622397]@,$[2.4229762]@,$[2.5829395]@,$[1236.1737]@
$[1.3137831]@,$[1.7854506]@,$[1.1615124]@,$[1.7938994]@,$[97.239001]@
$[2.1865011]@,$[3.2841847]@,$[3.0014639]@,$[0.97239124]@,$[818.91334]@
$[2.0129472]@,$[2.5326288]@,$[1.6468843]@,$[2.5756713]@,$[572.79888]@

```

BS20B011

alpha = 0.19534985

MLR FIT FUNCTION

```

Y = beta_0 + beta_1 X1 X4 X3 X1 X1 + beta_2 X2 X1 X3 X3 X3 + beta_3 X3 X2 X4 X1 X2
+ beta_4 X4 X2 X3 X1 X3

```

PARAMATER FOR POPULATION RANGE: beta_4

DATA COLUMNS X1 X2 X3 X4 Y

```

$[0]@,$[0]@,$[0]@,$[0]@,$[-1.0531948]@
$[0.092731803]@,$[0.10212014]@,$[0.19597626]@,$[0.080808457]@,$[0.18095749]@
$[0.285272]@,$[0.24534896]@,$[0.18163931]@,$[0.31879459]@,$[-0.67220519]@
$[0.19585733]@,$[0.45356271]@,$[0.37822178]@,$[0.31625932]@,$[-0.68013444]@

```

```

BT2022_qiv_22_alldata
$[0.64097932]@,$[0.54948098]@,$[0.65491332]@,$[0.47737359]@,$[1.230905]@
$[0.64849525]@,$[0.47045707]@,$[0.86337358]@,$[0.48604682]@,$[1.174676]@
$[1.0763481]@,$[0.83324869]@,$[1.0047796]@,$[0.8487713]@,$[7.1095175]@
$[0.4608748]@,$[1.3885705]@,$[1.2439787]@,$[0.45968616]@,$[5.7720964]@
$[1.0155731]@,$[1.1345908]@,$[0.87380775]@,$[0.55796699]@,$[4.8552923]@
$[1.6300276]@,$[0.85819695]@,$[1.058628]@,$[0.49766432]@,$[11.614032]@
$[1.9376023]@,$[1.8501768]@,$[1.5448151]@,$[0.56964056]@,$[67.356433]@
$[2.069808]@,$[1.1188119]@,$[0.94103065]@,$[1.5586226]@,$[47.422307]@
$[2.3890138]@,$[1.2265569]@,$[1.1624372]@,$[1.7440832]@,$[101.2531]@
$[1.7385659]@,$[0.88202685]@,$[0.7638754]@,$[1.3713531]@,$[18.438179]@
$[0.93328994]@,$[1.0723639]@,$[1.0989331]@,$[1.8296635]@,$[16.42513]@
$[1.3385974]@,$[1.258766]@,$[2.8631127]@,$[1.7512431]@,$[190.44452]@
$[1.6914892]@,$[1.0498971]@,$[2.5512163]@,$[3.0069428]@,$[252.86735]@
$[1.3674876]@,$[2.8756992]@,$[2.3971718]@,$[1.2717635]@,$[278.87173]@
$[3.3475344]@,$[2.4253404]@,$[1.7663452]@,$[0.96079803]@,$[361.71832]@
$[2.4332405]@,$[2.6447304]@,$[3.0752613]@,$[2.5870124]@,$[1317.1966]@

```

```

BS20B012
alpha = 0.070060902
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X4 X2 X3 X1 + beta_2 X2 X1 X1 X3 X2 + beta_3 X3 X4 X3 X3 X3
+ beta_4 X4 X1 X4 X3 X1
PARAMATER FOR POPULATION RANGE: beta_2
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@,$[-0.43049189]@
$[0.1053555]@,$[0.19822592]@,$[0.1897526]@,$[0.1745591]@,$[-0.52942005]@
$[0.18190669]@,$[0.1890477]@,$[0.20739994]@,$[0.36495922]@,$[1.2406659]@
$[0.46947515]@,$[0.54125913]@,$[0.59480632]@,$[0.44701287]@,$[-1.0197187]@
$[0.39640087]@,$[0.61343847]@,$[0.62795041]@,$[0.25991916]@,$[1.5154965]@
$[0.29105464]@,$[0.56563159]@,$[0.87301074]@,$[0.64449946]@,$[0.29854261]@
$[1.1374342]@,$[1.180419]@,$[1.1231646]@,$[0.7842262]@,$[7.9092236]@
$[1.2147967]@,$[0.60269482]@,$[1.2840655]@,$[1.3998021]@,$[15.436038]@
$[0.67442359]@,$[0.71970821]@,$[0.91443134]@,$[0.99646795]@,$[1.5630835]@
$[0.97674658]@,$[0.86371178]@,$[1.6991805]@,$[0.92173574]@,$[3.0904986]@
$[0.90226108]@,$[1.5737197]@,$[1.6635892]@,$[0.53423988]@,$[4.6874761]@
$[1.7844147]@,$[1.8018288]@,$[1.8612888]@,$[0.67650103]@,$[57.638281]@
$[0.97796057]@,$[1.0520521]@,$[1.1212179]@,$[2.1078672]@,$[22.511483]@
$[2.1266524]@,$[1.2047053]@,$[0.8236996]@,$[1.8122203]@,$[81.328895]@
$[1.681411]@,$[1.6942494]@,$[1.1245154]@,$[1.8973493]@,$[90.368453]@
$[1.6666798]@,$[0.87922126]@,$[2.9423907]@,$[2.6896556]@,$[55.228106]@
$[1.238043]@,$[2.3716744]@,$[1.6988053]@,$[2.5051234]@,$[117.24783]@
$[1.2259962]@,$[2.2045372]@,$[2.9812894]@,$[1.0624764]@,$[-4.0126084]@
$[2.4969614]@,$[2.1560588]@,$[1.7192629]@,$[2.2526356]@,$[451.21953]@
$[3.36167]@,$[2.3534303]@,$[1.5066445]@,$[1.8136388]@,$[620.74662]@

```

BS20B013

BT2022_qiv_22_alldata

```

alpha = 0.15557824
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X4 X4 X3 X2 + beta_2 X2 X3 X1 X4 X1 + beta_3 X3 X2 X1 X3 X4
+ beta_4 X4 X1 X3 X3 X2
PARAMATER FOR POPULATION RANGE: beta_1
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@[1.5879431]@
$[0.19834509]@,$[0.081977453]@,$[0.10187421]@,$[0.13444855]@,$[0.48819424]@
$[0.33626969]@,$[0.25982404]@,$[0.30778871]@,$[0.39038702]@,$[3.3721326]@
$[0.2598276]@,$[0.57268642]@,$[0.19685505]@,$[0.44781069]@,$[1.9913221]@
$[0.72719335]@,$[0.66069761]@,$[0.48858911]@,$[0.4967297]@,$[2.2332369]@
$[0.86012131]@,$[0.35333431]@,$[0.56508912]@,$[0.92741031]@,$[2.4599427]@
$[0.99451818]@,$[0.88593891]@,$[0.53696062]@,$[1.06404]@,$[1.6237187]@
$[1.0494772]@,$[0.54344428]@,$[1.0789617]@,$[1.3079728]@,$[3.8665669]@
$[1.2047696]@,$[0.58505675]@,$[1.212132]@,$[0.98529818]@,$[5.4601342]@
$[0.76746882]@,$[1.3871944]@,$[1.1169158]@,$[1.2722407]@,$[5.6757325]@
$[1.5047378]@,$[1.8385945]@,$[1.800599]@,$[0.90354465]@,$[32.222992]@
$[1.3972388]@,$[1.4151601]@,$[1.4349663]@,$[1.7478266]@,$[8.3926153]@
$[1.1161543]@,$[1.643207]@,$[1.1869395]@,$[1.9731753]@,$[-2.4954163]@
$[1.7797866]@,$[1.0455411]@,$[2.3700866]@,$[1.4098409]@,$[54.579989]@
$[0.75089432]@,$[2.5485913]@,$[1.1636536]@,$[2.2143259]@,$[-6.559241]@
$[2.8849074]@,$[1.0649451]@,$[1.7807278]@,$[2.4544501]@,$[-1.4362274]@
$[1.4572896]@,$[1.8840674]@,$[1.0681962]@,$[2.9061879]@,$[-48.102666]@
$[0.99871412]@,$[2.879621]@,$[2.5346005]@,$[2.0639749]@,$[112.64397]@
$[3.4120516]@,$[1.6617324]@,$[2.0022262]@,$[2.97895]@,$[-39.698032]@
$[1.8818787]@,$[1.1176178]@,$[3.2065259]@,$[2.4111501]@,$[161.40748]@

```

BS20B014

```

alpha = 0.19883318
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X4 X2 X3 X1 + beta_2 X2 X4 X4 X3 X3 + beta_3 X3 X3 X2 X1 X4
+ beta_4 X4 X4 X3 X3 X3
PARAMATER FOR POPULATION RANGE: beta_0
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@[1.6520814]@
$[0.11839974]@,$[0.10936443]@,$[0.099568255]@,$[0.17127505]@,$[1.8412467]@
$[0.31423275]@,$[0.22772593]@,$[0.16651508]@,$[0.20152187]@,$[1.7123456]@
$[0.3014606]@,$[0.2295809]@,$[0.23833069]@,$[0.15366649]@,$[0.5602304]@
$[0.66332582]@,$[0.66144952]@,$[0.20266145]@,$[0.44853486]@,$[3.3106305]@
$[0.64345821]@,$[0.92734672]@,$[0.41371997]@,$[0.79544138]@,$[3.9107249]@
$[0.96836707]@,$[0.3486199]@,$[0.55316699]@,$[1.11173]@,$[3.8146719]@
$[1.348833]@,$[0.73891881]@,$[1.1864058]@,$[0.89554012]@,$[12.923538]@
$[1.3200819]@,$[0.45512786]@,$[1.2177088]@,$[0.63551532]@,$[7.440678]@
$[1.1506506]@,$[0.55510255]@,$[0.45974999]@,$[0.46931107]@,$[1.9181927]@
$[0.80003418]@,$[1.5012521]@,$[0.96529064]@,$[1.5809635]@,$[11.754541]@
$[1.7532539]@,$[1.9219229]@,$[1.7897597]@,$[0.6276062]@,$[71.666883]@
$[1.3248762]@,$[1.8376747]@,$[0.86576918]@,$[1.3057158]@,$[33.072018]@

```

```

BT2022_qiv_22_alldata
$[2.3320246]@,$[1.6607657]@,$[1.3591388]@,$[1.2185321]@,$[138.86261]@
$[2.447204]@,$[1.0389321]@,$[2.4090667]@,$[2.235318]@,$[169.80338]@
$[2.7995345]@,$[0.91437522]@,$[0.87063926]@,$[2.2749158]@,$[115.46903]@
$[3.0322056]@,$[1.896261]@,$[2.3449447]@,$[2.0405696]@,$[724.3822]@
$[1.2982413]@,$[2.654282]@,$[0.89398138]@,$[2.4719447]@,$[83.405406]@
$[1.0952338]@,$[2.8312117]@,$[2.9159298]@,$[3.5074397]@,$[-461.08784]@
$[3.2149086]@,$[3.7299673]@,$[2.7211815]@,$[2.675458]@,$[2595.2928]@

```

BS20B015

```

alpha = 0.080023408
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X1 X1 X4 X3 + beta_2 X2 X2 X1 X2 X2 + beta_3 X3 X3 X1 X4 X1
+ beta_4 X4 X4 X3 X3 X1
PARAMATER FOR POPULATION RANGE: beta_2
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@,$[1.9815359]@
$[0.15054403]@,$[0.078926859]@,$[0.080773613]@,$[0.11284502]@,$[2.8964727]@
$[0.37549655]@,$[0.14815376]@,$[0.36125665]@,$[0.15106179]@,$[0.42138075]@
$[0.22678041]@,$[0.54750723]@,$[0.50340376]@,$[0.50921824]@,$[2.5577079]@
$[0.53866622]@,$[0.25700125]@,$[0.66678521]@,$[0.56189443]@,$[2.1173882]@
$[0.27478088]@,$[0.88862537]@,$[0.43226683]@,$[0.46714999]@,$[1.3272639]@
$[0.90111841]@,$[0.82314637]@,$[1.1093758]@,$[0.33378565]@,$[0.69915461]@
$[0.78415177]@,$[1.0182293]@,$[1.165889]@,$[0.72102086]@,$[4.6024249]@
$[0.73088274]@,$[1.3711925]@,$[1.3944874]@,$[1.1432015]@,$[7.1944832]@
$[0.97696775]@,$[1.7537865]@,$[1.4946634]@,$[0.66062075]@,$[20.391851]@
$[1.9778251]@,$[1.7179682]@,$[0.99153841]@,$[0.8458618]@,$[47.184716]@
$[0.90483895]@,$[1.1194331]@,$[1.064885]@,$[2.0097885]@,$[11.905299]@
$[0.73809737]@,$[2.1565021]@,$[1.2219069]@,$[0.63852738]@,$[24.027555]@
$[1.985261]@,$[1.089176]@,$[1.8623759]@,$[2.0038031]@,$[140.52693]@
$[1.7977327]@,$[1.5550269]@,$[1.4179926]@,$[1.1352143]@,$[53.04155]@
$[1.15667]@,$[2.8127354]@,$[1.2371321]@,$[0.9413855]@,$[104.22896]@
$[0.80407297]@,$[3.1947573]@,$[2.0529387]@,$[2.5673852]@,$[134.99808]@
$[2.1750212]@,$[1.5424117]@,$[3.0514491]@,$[1.3691283]@,$[261.25813]@
$[2.4544828]@,$[2.7960563]@,$[2.7073274]@,$[3.2932212]@,$[870.41729]@
$[2.5301328]@,$[3.2715457]@,$[3.2025148]@,$[1.2091344]@,$[715.63143]@

```

BS20B016

```

alpha = 0.12434687
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X1 X2 X2 X2 + beta_2 X2 X1 X3 X1 X2 + beta_3 X3 X3 X1 X1
+ beta_4 X4 X1 X2 X1 X3
PARAMATER FOR POPULATION RANGE: beta_2
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@,$[1.8438752]@
$[0.078889995]@,$[0.17112369]@,$[0.15384206]@,$[0.13578323]@,$[2.0300007]@
$[0.24022167]@,$[0.1083941]@,$[0.36465212]@,$[0.37488439]@,$[1.3177319]@

```

```

BT2022_qiv_22_alldata
$[0.17208728]@,$[0.22766704]@,$[0.42319828]@,$[0.48973849]@,$[2.4951082]@
$[0.4809055]@,$[0.79957089]@,$[0.61202229]@,$[0.78987199]@,$[0.78424513]@
$[0.86619937]@,$[0.69405467]@,$[0.25721588]@,$[0.41551343]@,$[2.6086782]@
$[0.72553238]@,$[0.3771167]@,$[0.51675999]@,$[0.70322925]@,$[2.1660933]@
$[1.3700486]@,$[0.7361499]@,$[1.251051]@,$[0.47452997]@,$[21.342569]@
$[0.46501309]@,$[0.80170049]@,$[1.3850401]@,$[0.43435694]@,$[5.8329688]@
$[1.0720143]@,$[1.4771431]@,$[1.4530055]@,$[0.46891307]@,$[25.682518]@
$[0.65845062]@,$[0.52152808]@,$[1.9308671]@,$[1.8820264]@,$[19.190978]@
$[0.86774338]@,$[0.63352139]@,$[0.60422599]@,$[1.3610327]@,$[4.6776172]@
$[1.7285553]@,$[1.4394662]@,$[1.6755419]@,$[1.5942682]@,$[97.903648]@
$[2.1980125]@,$[1.033628]@,$[2.223017]@,$[1.6995212]@,$[308.02797]@
$[2.7222438]@,$[2.4754915]@,$[2.5472711]@,$[1.2008138]@,$[844.40461]@
$[2.1900181]@,$[0.75864677]@,$[1.9416431]@,$[1.0177776]@,$[194.22942]@
$[2.148192]@,$[2.3646696]@,$[2.7547927]@,$[2.157233]@,$[658.18304]@
$[2.5221063]@,$[1.1891341]@,$[1.0358263]@,$[1.1786903]@,$[59.437921]@
$[1.6098747]@,$[2.2005868]@,$[3.0384823]@,$[1.6687737]@,$[452.44007]@
$[3.2880267]@,$[1.2683393]@,$[1.1208332]@,$[3.2713468]@,$[160.25822]@

```

BS20B017

```

alpha = 0.17726297
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X1 X2 X2 X3 + beta_2 X2 X3 X3 X2 X3 + beta_3 X3 X2 X1 X1 X3
+ beta_4 X4 X3 X2 X3 X2
PARAMATER FOR POPULATION RANGE: beta_4
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@,$[1.5791139]@
$[0.1822237]@,$[0.17658785]@,$[0.11100149]@,$[0.10619889]@,$[1.9580262]@
$[0.38921103]@,$[0.11637424]@,$[0.14473578]@,$[0.18354694]@,$[0.75698356]@
$[0.23815186]@,$[0.48399015]@,$[0.4116772]@,$[0.46129996]@,$[1.8872232]@
$[0.73063434]@,$[0.30109161]@,$[0.56108978]@,$[0.31709677]@,$[2.0163016]@
$[0.88224679]@,$[0.30566965]@,$[0.44170736]@,$[0.94514267]@,$[1.8137976]@
$[0.60078212]@,$[0.96092413]@,$[0.44033125]@,$[0.74439582]@,$[2.4256998]@
$[1.3477544]@,$[0.6897605]@,$[1.0772511]@,$[1.3840738]@,$[0.39388755]@
$[1.1444118]@,$[0.58428645]@,$[0.68811007]@,$[1.2998388]@,$[1.3036666]@
$[0.60745669]@,$[1.2426584]@,$[1.0146049]@,$[0.86591644]@,$[5.4410956]@
$[0.62449335]@,$[1.2594999]@,$[0.62736932]@,$[1.2750057]@,$[2.4759707]@
$[0.73613335]@,$[0.93313293]@,$[1.1142944]@,$[1.2306751]@,$[4.7907409]@
$[1.2010162]@,$[1.3683346]@,$[2.3153944]@,$[1.8196071]@,$[38.257738]@
$[1.0510486]@,$[2.1114688]@,$[0.65035926]@,$[1.661277]@,$[-1.1405336]@
$[0.94353424]@,$[1.0590483]@,$[1.0380855]@,$[2.6511664]@,$[0.57111036]@
$[2.8856485]@,$[1.758066]@,$[1.4683346]@,$[1.5163624]@,$[-23.232051]@
$[3.0106004]@,$[1.2923593]@,$[2.1728058]@,$[2.7565239]@,$[-49.61662]@
$[2.8551127]@,$[0.94548951]@,$[1.7241736]@,$[2.1306332]@,$[-24.247124]@
$[3.290366]@,$[0.98304532]@,$[3.2557628]@,$[2.0628526]@,$[-93.423561]@
$[3.0442767]@,$[3.7448336]@,$[2.209755]@,$[1.6478959]@,$[123.35533]@

```

BT2022_qiv_22_alldata

BS20B020
alpha = 0.077003186
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X3 X4 X2 X3 + beta_2 X2 X1 X2 X3 X3 + beta_3 X3 X4 X1 X2 X2
+ beta_4 X4 X4 X2 X1 X1
PARAMATER FOR POPULATION RANGE: beta_1
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@[3.4214845]@
\$[0.15702807]@,\$[0.16648745]@,\$[0.16041177]@,\$[0.058118503]@,\$[3.3513683]@
\$[0.20138251]@,\$[0.1525297]@,\$[0.29779247]@,\$[0.34556726]@,\$[4.0034537]@
\$[0.45870469]@,\$[0.28819321]@,\$[0.285945]@,\$[0.34668494]@,\$[4.9279111]@
\$[0.20208151]@,\$[0.75069909]@,\$[0.550847]@,\$[0.53266427]@,\$[6.4404701]@
\$[0.44733369]@,\$[0.2919337]@,\$[0.7978763]@,\$[0.58469035]@,\$[5.9626631]@
\$[1.0514319]@,\$[0.83612358]@,\$[0.65145394]@,\$[1.1367636]@,\$[6.3574862]@
\$[1.1026682]@,\$[0.6136547]@,\$[1.0226293]@,\$[1.2741719]@,\$[8.6986115]@
\$[1.2398084]@,\$[1.3733625]@,\$[0.55275951]@,\$[1.1758619]@,\$[10.435053]@
\$[0.93667229]@,\$[1.4305708]@,\$[0.82885108]@,\$[1.0013219]@,\$[11.888649]@
\$[1.824512]@,\$[1.1988565]@,\$[1.99176]@,\$[0.86195066]@,\$[22.56309]@
\$[0.85928769]@,\$[0.74874742]@,\$[1.2155078]@,\$[2.0200062]@,\$[10.354823]@
\$[1.0796235]@,\$[1.306915]@,\$[2.2858035]@,\$[0.77905751]@,\$[14.964861]@
\$[2.5176104]@,\$[1.4727246]@,\$[1.6551313]@,\$[2.2621091]@,\$[117.88345]@
\$[2.580385]@,\$[1.1041616]@,\$[0.78221732]@,\$[1.0253835]@,\$[17.940955]@
\$[2.2931947]@,\$[2.4383091]@,\$[1.996482]@,\$[1.4311389]@,\$[161.60692]@
\$[2.0755175]@,\$[2.3829771]@,\$[2.6484381]@,\$[1.765083]@,\$[226.02064]@
\$[1.8233131]@,\$[1.3195985]@,\$[0.88174775]@,\$[3.0454286]@,\$[64.337777]@
\$[2.7903706]@,\$[2.8150755]@,\$[1.5328846]@,\$[3.2812202]@,\$[579.17985]@
\$[1.1982045]@,\$[2.0301529]@,\$[1.3244209]@,\$[3.3628828]@,\$[110.52898]@

BS20B021
alpha = 0.086717273
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X2 X3 X3 X1 + beta_2 X2 X4 X4 X4 X1 + beta_3 X3 X4 X1 X1 X3
+ beta_4 X4 X4 X2 X1 X1
PARAMATER FOR POPULATION RANGE: beta_3
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@[1.5544463]@
\$[0.16661622]@,\$[0.10041808]@,\$[0.15232397]@,\$[0.093425603]@,\$[0.52910063]@
\$[0.28562492]@,\$[0.13723443]@,\$[0.33606642]@,\$[0.2229857]@,\$[-0.23703665]@
\$[0.45106973]@,\$[0.15166946]@,\$[0.20259265]@,\$[0.52771468]@,\$[1.410652]@
\$[0.23276936]@,\$[0.29550301]@,\$[0.56057886]@,\$[0.64891829]@,\$[1.8289995]@
\$[0.56422284]@,\$[0.87398394]@,\$[0.39657219]@,\$[0.25178025]@,\$[-0.62831702]@
\$[0.96642524]@,\$[0.42863421]@,\$[0.7382811]@,\$[0.85023869]@,\$[1.8722701]@
\$[1.2271344]@,\$[0.88378502]@,\$[0.58102645]@,\$[0.58569044]@,\$[1.3518915]@
\$[1.2657933]@,\$[0.70967681]@,\$[1.3296114]@,\$[0.54730796]@,\$[7.8464931]@
\$[0.50396504]@,\$[0.54680648]@,\$[1.4757189]@,\$[1.5653846]@,\$[2.6644468]@
\$[1.9666609]@,\$[0.66645352]@,\$[0.84817858]@,\$[1.7710768]@,\$[26.802642]@
\$[1.8295122]@,\$[2.0367771]@,\$[1.914129]@,\$[0.70177534]@,\$[55.127336]@

```

BT2022_qiv_22_alldata
$[0.70384533]@,$[0.61532242]@,$[1.6864194]@,$[1.1588698]@,$[3.5151392]@
$[1.7314271]@,$[2.4557125]@,$[2.4984833]@,$[2.2331352]@,$[201.20122]@
$[2.0030988]@,$[0.78944752]@,$[0.85306793]@,$[1.670433]@,$[29.074179]@
$[1.3148713]@,$[1.6923047]@,$[2.9270372]@,$[2.669525]@,$[129.57432]@
$[1.9295722]@,$[2.356404]@,$[1.8389757]@,$[2.4871403]@,$[204.67649]@
$[3.207212]@,$[1.3052449]@,$[1.4825241]@,$[2.3571896]@,$[275.71661]@
$[3.3924988]@,$[2.36087]@,$[2.4336487]@,$[2.5101778]@,$[832.01598]@
$[3.6342328]@,$[3.4638408]@,$[1.1593115]@,$[1.2865756]@,$[295.23745]@
```

BS20B022

alpha = 0.069640639

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X3 X3 X4 X1 + beta_2 X2 X3 X3 X1 X3 + beta_3 X3 X1 X1 X2 X2
+ beta_4 X4 X4 X2 X1 X1

PARAMATER FOR POPULATION RANGE: beta_2

DATA COLUMNS X1 X2 X3 X4 Y

```

$[0]@,$[0]@,$[0]@,$[0]@,$[2.51202]@
$[0.13270797]@,$[0.068160818]@,$[0.09486638]@,$[0.17622432]@,$[0.68136894]@
$[0.17594209]@,$[0.27205387]@,$[0.18795329]@,$[0.32313274]@,$[1.3229898]@
$[0.2337567]@,$[0.23755291]@,$[0.15305153]@,$[0.41593277]@,$[0.97710566]@
$[0.55630111]@,$[0.26286484]@,$[0.37846539]@,$[0.40564887]@,$[2.5726985]@
$[0.2884812]@,$[0.93565537]@,$[0.95688868]@,$[0.51170804]@,$[1.6074203]@
$[1.1071651]@,$[0.31356134]@,$[0.48785641]@,$[1.1451105]@,$[2.1928033]@
$[1.0136899]@,$[0.66997621]@,$[1.2773663]@,$[1.1361871]@,$[6.3690516]@
$[0.58448726]@,$[1.3804293]@,$[0.6299303]@,$[1.0055645]@,$[2.6294525]@
$[1.4622306]@,$[0.99795841]@,$[1.2501947]@,$[1.18388]@,$[16.342339]@
$[1.0113644]@,$[1.3493752]@,$[0.51442652]@,$[1.6326229]@,$[14.52961]@
$[1.0135848]@,$[1.263687]@,$[1.1319098]@,$[1.4539642]@,$[12.068708]@
$[0.81475904]@,$[1.3197149]@,$[1.1352412]@,$[1.6692015]@,$[9.6990593]@
$[1.4039757]@,$[2.1285578]@,$[1.5728756]@,$[1.5966118]@,$[32.060074]@
$[1.3320279]@,$[2.5181544]@,$[2.5518693]@,$[1.6023083]@,$[9.3699278]@
$[0.86969506]@,$[1.5516014]@,$[1.4932306]@,$[1.7068476]@,$[13.526863]@
$[3.0520895]@,$[1.2472107]@,$[1.6354515]@,$[2.2907577]@,$[307.75482]@
$[3.0303689]@,$[2.5904095]@,$[3.394458]@,$[1.7041168]@,$[132.89971]@
$[1.2067231]@,$[2.7387785]@,$[2.6878577]@,$[2.4336362]@,$[64.730137]@
$[2.0068438]@,$[3.6078728]@,$[1.5918078]@,$[2.3960236]@,$[255.50354]@
```

BS20B023

alpha = 0.14091626

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X4 X4 X3 X1 + beta_2 X2 X4 X4 X2 X4 + beta_3 X3 X3 X1 X3 X4
+ beta_4 X4 X4 X3 X1 X2

PARAMATER FOR POPULATION RANGE: beta_0

DATA COLUMNS X1 X2 X3 X4 Y

```

$[0]@,$[0]@,$[0]@,$[0]@,$[0.29556257]@
$[0.16969287]@,$[0.18312327]@,$[0.10563628]@,$[0.18360605]@,$[1.0240221]@
```

```

BT2022_qiv_22_alldata
$[0.15075982]@,$[0.24419224]@,$[0.12783369]@,$[0.22334841]@,$[-0.059218729]@
$[0.24663757]@,$[0.32157458]@,$[0.30983908]@,$[0.41204238]@,$[0.22673449]@
$[0.5517674]@,$[0.72049543]@,$[0.34398134]@,$[0.65213815]@,$[0.75636756]@
$[0.38768775]@,$[0.57337989]@,$[0.48151348]@,$[0.27573618]@,$[1.3290977]@
$[0.89756415]@,$[0.99539065]@,$[0.43493698]@,$[0.86513358]@,$[1.1910666]@
$[0.5089508]@,$[1.146344]@,$[1.2220733]@,$[1.3339396]@,$[11.975068]@
$[1.4649071]@,$[0.91052322]@,$[1.0907518]@,$[1.191803]@,$[13.826444]@
$[1.2449659]@,$[0.61829105]@,$[1.6168723]@,$[0.46029926]@,$[2.2580131]@
$[1.1060458]@,$[0.97614827]@,$[1.8893307]@,$[1.5974931]@,$[39.092158]@
$[1.0458224]@,$[1.1026758]@,$[1.7481508]@,$[0.75577547]@,$[10.996473]@
$[1.9512507]@,$[0.93111965]@,$[0.92669039]@,$[2.245715]@,$[52.651398]@
$[1.4858113]@,$[1.7014688]@,$[2.5482454]@,$[1.8396591]@,$[165.34882]@
$[0.87718934]@,$[1.4110367]@,$[1.1568746]@,$[2.1832026]@,$[67.906552]@
$[1.9519437]@,$[2.8047804]@,$[2.5232852]@,$[1.3456431]@,$[179.93996]@
$[1.5331936]@,$[3.169776]@,$[2.7458196]@,$[1.5992548]@,$[265.38969]@
$[1.1557532]@,$[1.3913127]@,$[1.7278033]@,$[1.0882872]@,$[25.214797]@
$[2.649025]@,$[1.5292718]@,$[2.4650361]@,$[3.5298407]@,$[799.12264]@
$[2.1815943]@,$[2.8210111]@,$[1.5210398]@,$[1.8761395]@,$[243.04499]@

```

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BS20B024
alpha = 0.069825756
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X2 X2 X2 X3 + beta_2 X2 X1 X4 X1 X2 + beta_3 X3 X2 X2 X1 X3
+ beta_4 X4 X2 X4 X1 X3
PARAMATER FOR POPULATION RANGE: beta_1
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@,$[6.3283374]@
$[0.14093826]@,$[0.10117246]@,$[0.051811079]@,$[0.13350946]@,$[5.2073898]@
$[0.36073589]@,$[0.10954903]@,$[0.11610177]@,$[0.17924797]@,$[5.0368027]@
$[0.16275302]@,$[0.42238562]@,$[0.22121717]@,$[0.34949103]@,$[5.3728539]@
$[0.33915708]@,$[0.77684885]@,$[0.23658372]@,$[0.50580325]@,$[6.6192727]@
$[0.45153455]@,$[0.41964596]@,$[0.6748413]@,$[0.47899245]@,$[5.2583509]@
$[0.78638224]@,$[0.79781191]@,$[0.65253969]@,$[0.72113178]@,$[5.6222225]@
$[1.1197354]@,$[1.3833715]@,$[0.62338836]@,$[0.83882203]@,$[10.933978]@
$[0.93696342]@,$[0.66266688]@,$[1.0355294]@,$[0.69932951]@,$[3.8783404]@
$[1.388226]@,$[0.64796836]@,$[1.1117431]@,$[1.4094499]@,$[7.137062]@
$[0.54732828]@,$[1.9858657]@,$[0.94263152]@,$[0.64824165]@,$[22.945492]@
$[1.9174462]@,$[1.4990093]@,$[1.4674137]@,$[1.8894521]@,$[37.141939]@
$[1.6021156]@,$[0.81184817]@,$[2.3139054]@,$[2.0679248]@,$[33.881689]@
$[2.0042285]@,$[1.0325571]@,$[2.4084648]@,$[1.6272725]@,$[29.234053]@
$[2.5364955]@,$[2.4064508]@,$[1.1735526]@,$[1.823159]@,$[59.535939]@
$[2.6428115]@,$[2.6530705]@,$[1.1765616]@,$[2.9417684]@,$[37.520586]@
$[2.0256108]@,$[2.9271606]@,$[3.007938]@,$[1.2518883]@,$[533.27929]@
$[2.0079311]@,$[3.1365292]@,$[1.3276177]@,$[3.0154015]@,$[249.46448]@
$[1.6128859]@,$[1.5435037]@,$[3.3187235]@,$[1.7605325]@,$[84.651247]@
$[1.6242145]@,$[1.7158943]@,$[3.5711902]@,$[0.9761729]@,$[70.9776]@

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BT2022_qiv_22_alldata

BS20B025
alpha = 0.17564643
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X1 X1 X1 X2 X1 + beta_2 X2 X2 X1 X2 X2 + beta_3 X3 X1 X4 X1 X1
+ beta_4 X4 X2 X2 X4 X1
PARAMATER FOR POPULATION RANGE: beta_1
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[0.51307048]@
\$[0.15076956]@,\$[0.063932983]@,\$[0.057447309]@,\$[0.11750303]@,\$[2.6224127]@
\$[0.33987344]@,\$[0.35035843]@,\$[0.39080534]@,\$[0.11722806]@,\$[2.6420706]@
\$[0.38300681]@,\$[0.58221626]@,\$[0.41151648]@,\$[0.45586329]@,\$[2.695522]@
\$[0.55040947]@,\$[0.2642804]@,\$[0.57116057]@,\$[0.30067793]@,\$[3.0876208]@
\$[0.81779904]@,\$[0.72078952]@,\$[0.90590958]@,\$[0.82664454]@,\$[1.8762974]@
\$[0.39492301]@,\$[1.1635411]@,\$[1.0848413]@,\$[0.94299562]@,\$[4.218895]@
\$[0.63157704]@,\$[0.42494092]@,\$[0.86257441]@,\$[1.2303793]@,\$[1.1495163]@
\$[1.3387962]@,\$[0.86681881]@,\$[1.320414]@,\$[1.1423852]@,\$[2.7504898]@
\$[0.83134683]@,\$[1.5537192]@,\$[1.2787157]@,\$[1.575276]@,\$[9.2024271]@
\$[1.0436908]@,\$[0.6455847]@,\$[1.730832]@,\$[1.0746743]@,\$[2.0843004]@
\$[1.0052713]@,\$[2.1570688]@,\$[1.6552344]@,\$[1.6146514]@,\$[44.654753]@
\$[0.84655506]@,\$[1.2016425]@,\$[1.4960596]@,\$[1.4906447]@,\$[3.9839677]@
\$[0.73245179]@,\$[0.88124512]@,\$[1.0588246]@,\$[1.9972906]@,\$[0.76833653]@
\$[2.0237455]@,\$[1.3082836]@,\$[1.5770132]@,\$[0.83496679]@,\$[9.6460636]@
\$[2.600034]@,\$[2.1748043]@,\$[1.9930457]@,\$[1.282691]@,\$[106.47522]@
\$[2.2098833]@,\$[2.2165976]@,\$[2.2126279]@,\$[2.8898513]@,\$[80.661986]@
\$[2.6559221]@,\$[2.2834271]@,\$[2.9324029]@,\$[1.3825422]@,\$[140.20458]@
\$[1.9082897]@,\$[1.6747189]@,\$[1.599914]@,\$[2.0958377]@,\$[23.880159]@
\$[2.9435684]@,\$[3.1360533]@,\$[1.5853796]@,\$[2.8832587]@,\$[485.90914]@

BS20B026
alpha = 0.09311948
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X4 X3 X3 X1 + beta_2 X2 X2 X4 X1 X2 + beta_3 X3 X3 X2 X2 X2
+ beta_4 X4 X3 X4 X3 X1
PARAMATER FOR POPULATION RANGE: beta_1
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[5.7054892]@
\$[0.10259648]@,\$[0.12602053]@,\$[0.11516061]@,\$[0.13382726]@,\$[4.2772608]@
\$[0.27943777]@,\$[0.20752985]@,\$[0.38858554]@,\$[0.22396333]@,\$[4.8295879]@
\$[0.46033545]@,\$[0.56055859]@,\$[0.27566183]@,\$[0.23164402]@,\$[2.5422996]@
\$[0.37905393]@,\$[0.33534947]@,\$[0.42504958]@,\$[0.2522489]@,\$[2.8165488]@
\$[0.48478081]@,\$[0.70544617]@,\$[0.46603329]@,\$[0.65860061]@,\$[5.6424456]@
\$[1.096513]@,\$[0.79303615]@,\$[0.4271097]@,\$[1.1782152]@,\$[6.628063]@
\$[0.83178066]@,\$[1.2478061]@,\$[1.3763087]@,\$[0.5096235]@,\$[3.1944428]@
\$[0.98971252]@,\$[1.492727]@,\$[1.3763044]@,\$[0.87203867]@,\$[11.371526]@
\$[0.78226429]@,\$[1.0848659]@,\$[1.1436044]@,\$[0.46828179]@,\$[3.4704804]@
\$[1.4764475]@,\$[0.58332826]@,\$[1.0547377]@,\$[1.9289425]@,\$[16.540913]@

BT2022_qiv_22_alldata

\$[1.2068847]@,\$[2.0568179]@,\$[1.3178687]@,\$[1.4153248]@,\$[54.770383]@
 \$[1.7556446]@,\$[1.5921611]@,\$[2.3330328]@,\$[1.9254059]@,\$[94.897346]@
 \$[2.0785383]@,\$[1.1227773]@,\$[1.0966013]@,\$[2.0940964]@,\$[41.353741]@
 \$[2.5520299]@,\$[2.3094896]@,\$[2.4831749]@,\$[0.81468602]@,\$[19.54882]@
 \$[2.5975779]@,\$[0.87201378]@,\$[2.1764935]@,\$[1.161619]@,\$[2.6249788]@
 \$[2.0998367]@,\$[2.12211]@,\$[2.7274307]@,\$[3.0225747]@,\$[445.72906]@
 \$[0.97943527]@,\$[1.3386116]@,\$[2.5509479]@,\$[1.8172382]@,\$[52.124265]@
 \$[3.427527]@,\$[2.4029178]@,\$[1.128811]@,\$[2.8305817]@,\$[528.11757]@
 \$[2.8999329]@,\$[2.2282631]@,\$[3.7280364]@,\$[2.356539]@,\$[408.24836]@

BS20B027
 alpha = 0.10720156
 MLR FIT FUNCTION
 $Y = \beta_0 + \beta_1 X_1 X_4 X_4 X_3 X_4 + \beta_2 X_2 X_3 X_3 X_2 X_2 + \beta_3 X_3 X_3 X_4 X_2 X_3 + \beta_4 X_4 X_4 X_4 X_3$
 PARAMATER FOR POPULATION RANGE: beta_3
 DATA COLUMNS X1 X2 X3 X4 Y
 \$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[-0.31224254]@
 \$[0.13808432]@,\$[0.076587834]@,\$[0.074273082]@,\$[0.16256803]@,\$[-0.031316257]@
 \$[0.33877474]@,\$[0.23544381]@,\$[0.17234466]@,\$[0.30028422]@,\$[1.0163302]@
 \$[0.51985837]@,\$[0.20495819]@,\$[0.18016588]@,\$[0.58734536]@,\$[0.31600329]@
 \$[0.59018527]@,\$[0.57756034]@,\$[0.32989704]@,\$[0.31833417]@,\$[1.2976356]@
 \$[0.43569031]@,\$[0.57769957]@,\$[0.79703741]@,\$[0.79740978]@,\$[2.6071251]@
 \$[0.70471252]@,\$[0.47716356]@,\$[0.51406552]@,\$[1.1914174]@,\$[2.0367167]@
 \$[0.91002154]@,\$[0.38910826]@,\$[0.58554811]@,\$[1.1822575]@,\$[3.7801775]@
 \$[1.351689]@,\$[1.1998043]@,\$[0.66366642]@,\$[1.4274018]@,\$[8.285489]@
 \$[1.1237252]@,\$[0.67680419]@,\$[1.523386]@,\$[1.3364145]@,\$[14.566765]@
 \$[1.2829409]@,\$[0.8815399]@,\$[0.67034458]@,\$[1.8788239]@,\$[9.6797766]@
 \$[1.3058933]@,\$[1.5683047]@,\$[0.9447118]@,\$[1.3071463]@,\$[23.226143]@
 \$[1.3847134]@,\$[2.062404]@,\$[2.0738205]@,\$[1.0759957]@,\$[193.46854]@
 \$[1.5754854]@,\$[1.1892724]@,\$[1.8320328]@,\$[2.1882296]@,\$[90.013674]@
 \$[2.0716446]@,\$[1.0558044]@,\$[0.99264906]@,\$[1.3841362]@,\$[18.803007]@
 \$[2.9561635]@,\$[1.8364779]@,\$[2.0681297]@,\$[2.4758324]@,\$[347.01863]@
 \$[1.3848037]@,\$[1.8694444]@,\$[1.3459025]@,\$[1.4585362]@,\$[68.40549]@
 \$[2.9896565]@,\$[2.3448769]@,\$[3.218676]@,\$[3.0781557]@,\$[1411.9964]@
 \$[2.1550957]@,\$[1.2860271]@,\$[1.4828692]@,\$[2.0585118]@,\$[80.814742]@
 \$[2.2425375]@,\$[3.5755047]@,\$[3.1765797]@,\$[1.8359771]@,\$[2302.4401]@

BS20B028
 alpha = 0.18783084
 MLR FIT FUNCTION
 $Y = \beta_0 + \beta_1 X_1 X_3 X_4 X_4 X_1 + \beta_2 X_2 X_2 X_1 X_4 X_3 + \beta_3 X_3 X_3 X_4 X_1 X_1 X_2 + \beta_4 X_4 X_4 X_4 X_1 X_1$
 PARAMATER FOR POPULATION RANGE: beta_3
 DATA COLUMNS X1 X2 X3 X4 Y
 \$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[7.0446241]@

BT2022_qiv_22_alldata

$\$[0.11687612]@, \$[0.11361834]@, \$[0.063619817]@, \$[0.13175606]@, \$[6.3130356]@$
 $\$[0.36670941]@, \$[0.27475236]@, \$[0.29428255]@, \$[0.22658923]@, \$[7.1089342]@$
 $\$[0.27335927]@, \$[0.19974112]@, \$[0.26494475]@, \$[0.40340297]@, \$[7.5206788]@$
 $\$[0.69037133]@, \$[0.51886341]@, \$[0.59009815]@, \$[0.70693119]@, \$[7.7304155]@$
 $\$[0.57009756]@, \$[0.41072333]@, \$[0.34351356]@, \$[0.75163379]@, \$[7.4479505]@$
 $\$[0.60776882]@, \$[0.39117624]@, \$[1.1448421]@, \$[1.1735508]@, \$[6.8876152]@$
 $\$[1.0212491]@, \$[0.48196309]@, \$[1.1178419]@, \$[1.2489252]@, \$[8.5814889]@$
 $\$[1.1077645]@, \$[1.3163971]@, \$[1.0176595]@, \$[0.63575805]@, \$[13.371183]@$
 $\$[1.4245145]@, \$[0.84649371]@, \$[0.88862267]@, \$[1.2870738]@, \$[10.570424]@$
 $\$[1.8050579]@, \$[1.6084984]@, \$[0.71684915]@, \$[1.8016078]@, \$[5.3365875]@$
 $\$[0.80370162]@, \$[0.55990199]@, \$[1.9546445]@, \$[1.0878954]@, \$[10.143181]@$
 $\$[1.9408648]@, \$[2.1955026]@, \$[1.7060285]@, \$[1.5150928]@, \$[111.19181]@$
 $\$[1.9350206]@, \$[2.0544697]@, \$[1.1187623]@, \$[0.93598116]@, \$[44.788847]@$
 $\$[1.9707595]@, \$[2.6219965]@, \$[0.87685839]@, \$[1.6592159]@, \$[59.342857]@$
 $\$[1.9449096]@, \$[2.6275277]@, \$[2.187205]@, \$[2.7290595]@, \$[263.47841]@$
 $\$[1.1354397]@, \$[3.1200236]@, \$[0.88287801]@, \$[2.2560542]@, \$[43.942466]@$
 $\$[2.5778358]@, \$[1.6926225]@, \$[2.119664]@, \$[2.3146102]@, \$[184.87468]@$
 $\$[2.899183]@, \$[1.8024339]@, \$[2.345603]@, \$[2.2993825]@, \$[302.12644]@$
 $\$[2.7075953]@, \$[3.7388344]@, \$[3.7021367]@, \$[2.6032161]@, \$[1511.0593]@$

BS20B029

alpha = 0.12222399

MLR FIT FUNCTION

$Y = \beta_0 + \beta_1 X_1 X_2 X_1 X_4 X_2 + \beta_2 X_2 X_1 X_2 X_4 X_2 + \beta_3 X_3 X_2 X_4 X_3 X_2$
 $+ \beta_4 X_4 X_4 X_4 X_3$

PARAMATER FOR POPULATION RANGE: beta_4

DATA COLUMNS X1 X2 X3 X4 Y

$\$[0]@, \$[0]@, \$[0]@, \$[0]@, \$[2.8459179]@$
 $\$[0.09788716]@, \$[0.10010749]@, \$[0.12469083]@, \$[0.14238631]@, \$[2.1961774]@$
 $\$[0.12519881]@, \$[0.18432892]@, \$[0.3649287]@, \$[0.22783136]@, \$[1.6464489]@$
 $\$[0.49364851]@, \$[0.21508167]@, \$[0.20328936]@, \$[0.48965997]@, \$[2.3243102]@$
 $\$[0.59980509]@, \$[0.4418169]@, \$[0.5287614]@, \$[0.53398396]@, \$[2.9097835]@$
 $\$[0.26892282]@, \$[0.75621289]@, \$[0.81241297]@, \$[0.56892909]@, \$[1.2852347]@$
 $\$[0.50657003]@, \$[0.34055023]@, \$[0.42388523]@, \$[0.5857748]@, \$[0.44662625]@$
 $\$[0.35445875]@, \$[1.1857695]@, \$[0.69972535]@, \$[1.151699]@, \$[0.58294815]@$
 $\$[1.1608326]@, \$[1.2117138]@, \$[0.95734747]@, \$[0.41588716]@, \$[7.1822229]@$
 $\$[1.0051933]@, \$[1.7170208]@, \$[0.66861613]@, \$[1.2446886]@, \$[26.74895]@$
 $\$[1.0529907]@, \$[1.2060509]@, \$[0.57536508]@, \$[0.57045781]@, \$[9.5192823]@$
 $\$[0.76353688]@, \$[1.7886954]@, \$[1.2402915]@, \$[1.8765117]@, \$[-4.7556501]@$
 $\$[1.4914131]@, \$[0.7452804]@, \$[1.8953176]@, \$[2.0939432]@, \$[-94.793038]@$
 $\$[1.8988869]@, \$[1.572293]@, \$[1.5252691]@, \$[2.3690544]@, \$[8.2691096]@$
 $\$[2.0873659]@, \$[1.3146738]@, \$[1.7265311]@, \$[1.6131196]@, \$[59.715113]@$
 $\$[1.9112471]@, \$[1.6704706]@, \$[1.0401399]@, \$[1.4766722]@, \$[94.243794]@$
 $\$[2.2516002]@, \$[0.9433247]@, \$[2.284638]@, \$[1.9493718]@, \$[-32.822414]@$
 $\$[2.5147626]@, \$[1.8791607]@, \$[2.6856304]@, \$[0.9004927]@, \$[173.51575]@$
 $\$[2.3944982]@, \$[1.8881529]@, \$[1.9511083]@, \$[1.8164101]@, \$[221.98892]@$
 $\$[1.6928002]@, \$[3.2724211]@, \$[3.4996672]@, \$[2.0911023]@, \$[804.42079]@$

BT2022_qiv_22_alldata

BS20B030
alpha = 0.17944666
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X3 X4 X3 X4 + beta_2 X2 X4 X3 X1 X1 + beta_3 X3 X2 X2 X3 X4
+ beta_4 X4 X1 X1 X3 X2
PARAMATER FOR POPULATION RANGE: beta_1
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[-1.8638264]@
\$[0.19605834]@,\$[0.1880515]@,\$[0.12970084]@,\$[0.16797125]@,\$[-0.77378281]@
\$[0.38576476]@,\$[0.22478565]@,\$[0.37928987]@,\$[0.37629142]@,\$[1.4970831]@
\$[0.36993744]@,\$[0.39959032]@,\$[0.17667694]@,\$[0.32188002]@,\$[-1.1902338]@
\$[0.70034191]@,\$[0.71566958]@,\$[0.46831052]@,\$[0.20236347]@,\$[-0.25733783]@
\$[0.63337747]@,\$[0.59350727]@,\$[0.64527988]@,\$[0.26672399]@,\$[0.75015764]@
\$[0.69823211]@,\$[0.63922482]@,\$[0.87669329]@,\$[0.40622097]@,\$[2.415255]@
\$[0.83842266]@,\$[0.67917199]@,\$[1.3701158]@,\$[0.47388588]@,\$[4.180144]@
\$[1.3826511]@,\$[0.43727795]@,\$[0.67750704]@,\$[1.1864188]@,\$[5.2986536]@
\$[0.69512671]@,\$[0.93640729]@,\$[0.58340118]@,\$[0.45091761]@,\$[0.29984705]@
\$[1.084271]@,\$[0.93026486]@,\$[1.1792299]@,\$[0.69784002]@,\$[8.9557125]@
\$[1.8211029]@,\$[1.0149858]@,\$[0.90852086]@,\$[1.2714973]@,\$[31.535462]@
\$[1.6227939]@,\$[1.1480612]@,\$[1.1676546]@,\$[1.2705933]@,\$[42.181902]@
\$[1.8257039]@,\$[2.4854518]@,\$[1.3070059]@,\$[0.66972856]@,\$[66.603106]@
\$[1.0112373]@,\$[1.1444417]@,\$[1.0110334]@,\$[2.0386368]@,\$[32.215228]@
\$[0.89216081]@,\$[2.8247213]@,\$[2.6618903]@,\$[1.3913662]@,\$[309.92874]@
\$[0.91966845]@,\$[2.0959782]@,\$[1.3408899]@,\$[2.8515994]@,\$[138.87659]@
\$[2.5848152]@,\$[3.0724667]@,\$[1.6122423]@,\$[3.3169356]@,\$[1063.4129]@
\$[3.3684859]@,\$[1.1364178]@,\$[2.2775093]@,\$[0.93036982]@,\$[216.09448]@
\$[3.4142777]@,\$[2.5651334]@,\$[1.2680154]@,\$[1.6718777]@,\$[462.36427]@

BS20B032
alpha = 0.079761099
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X1 X4 X4 X1 + beta_2 X2 X2 X2 X2 X1 + beta_3 X3 X3 X1 X1 X2
+ beta_4 X4 X1 X1 X2 X2
PARAMATER FOR POPULATION RANGE: beta_0
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[3.663781]@
\$[0.085418023]@,\$[0.16664817]@,\$[0.15465808]@,\$[0.14551464]@,\$[2.9551683]@
\$[0.37538009]@,\$[0.2632759]@,\$[0.11882769]@,\$[0.31448648]@,\$[3.0431313]@
\$[0.4407501]@,\$[0.5218385]@,\$[0.21125455]@,\$[0.24149229]@,\$[1.9099611]@
\$[0.57344708]@,\$[0.32716308]@,\$[0.33501763]@,\$[0.71128708]@,\$[1.8761673]@
\$[0.6911217]@,\$[0.95478312]@,\$[0.45431629]@,\$[0.34070027]@,\$[5.6161757]@
\$[0.65413952]@,\$[0.58989108]@,\$[0.55788279]@,\$[1.1066471]@,\$[3.1284766]@
\$[1.2673682]@,\$[1.2112159]@,\$[0.54236366]@,\$[1.1449972]@,\$[25.700486]@
\$[1.4682546]@,\$[1.226233]@,\$[0.89225635]@,\$[1.010775]@,\$[36.261947]@
\$[1.4833585]@,\$[1.7942568]@,\$[1.3288888]@,\$[0.55206728]@,\$[70.307093]@

```

BT2022_qiv_22_alldata
$[1.2534104]@,$[1.7331926]@,$[1.415134]@,$[1.8465802]@,$[91.645206]@
$[0.81669646]@,$[1.9765791]@,$[2.1021277]@,$[1.9184287]@,$[70.08683]@
$[0.67569844]@,$[1.9841577]@,$[1.3856116]@,$[1.329668]@,$[36.411734]@
$[1.5378845]@,$[1.2701987]@,$[2.2313555]@,$[1.2180302]@,$[95.303976]@
$[1.0123736]@,$[2.7025003]@,$[1.3057163]@,$[1.0939838]@,$[140.50997]@
$[0.81041639]@,$[1.8298614]@,$[2.1040878]@,$[2.016741]@,$[61.351856]@
$[3.1084564]@,$[2.8291635]@,$[1.565818]@,$[2.325191]@,$[1618.3856]@
$[3.1508884]@,$[1.5237969]@,$[2.2731202]@,$[2.8377279]@,$[957.11828]@
$[2.8831009]@,$[1.7556858]@,$[3.2097295]@,$[3.3584499]@,$[1371.7012]@
$[2.4735165]@,$[1.568945]@,$[1.9500671]@,$[3.7256862]@,$[696.63007]@

```

BS20B033

alpha = 0.19412571

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X4 X4 X3 X3 + beta_2 X2 X3 X1 X4 X2 + beta_3 X3 X1 X4 X1 X4
+ beta_4 X4 X2 X3 X1 X4

PARAMATER FOR POPULATION RANGE: beta_2

DATA COLUMNS X1 X2 X3 X4 Y

```

$[0]@,$[0]@,$[0]@,$[0]@,$[1.7719518]@
$[0.15999679]@,$[0.050313733]@,$[0.18028802]@,$[0.16284797]@,$[4.0630877]@
$[0.17536881]@,$[0.18721623]@,$[0.23689324]@,$[0.10210391]@,$[3.2192216]@
$[0.57413501]@,$[0.22766704]@,$[0.48257968]@,$[0.41509134]@,$[2.9701389]@
$[0.42817885]@,$[0.34843367]@,$[0.70289777]@,$[0.72388823]@,$[2.8257639]@
$[0.99049115]@,$[0.69990285]@,$[0.62043587]@,$[0.88686337]@,$[5.5078744]@
$[0.7172536]@,$[0.4346731]@,$[0.73741534]@,$[0.58899625]@,$[6.3474888]@
$[0.64221261]@,$[1.3622041]@,$[0.83301807]@,$[1.1031162]@,$[8.0803951]@
$[0.77060461]@,$[0.97073677]@,$[0.50951084]@,$[0.75033428]@,$[4.5673372]@
$[1.0746894]@,$[1.6387161]@,$[1.0776929]@,$[0.5439637]@,$[10.411479]@
$[1.9335451]@,$[1.6632083]@,$[1.6132922]@,$[1.9931053]@,$[154.0229]@
$[1.5183477]@,$[1.0297542]@,$[1.975841]@,$[1.3948164]@,$[73.17332]@
$[1.7166439]@,$[1.8877093]@,$[1.5744416]@,$[0.91191065]@,$[46.29771]@
$[1.9050017]@,$[1.8016422]@,$[2.2111593]@,$[2.058402]@,$[262.01703]@
$[1.2876605]@,$[2.6729451]@,$[0.89581792]@,$[1.5385023]@,$[42.586325]@
$[2.5409413]@,$[1.3719464]@,$[1.2522009]@,$[1.6771559]@,$[119.9051]@
$[1.0556182]@,$[2.3037678]@,$[1.0440818]@,$[2.6455259]@,$[60.280845]@
$[3.21338]@,$[1.9132308]@,$[2.9833937]@,$[1.2764298]@,$[397.22536]@
$[2.6055249]@,$[2.9956215]@,$[1.2286835]@,$[1.8470783]@,$[220.8225]@
$[2.3152249]@,$[2.4892685]@,$[1.5547488]@,$[3.3496778]@,$[509.37401]@

```

BS20B034

alpha = 0.11307423

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X1 X2 X1 X4 + beta_2 X2 X2 X2 X4 X1 + beta_3 X3 X1 X4 X2 X1
+ beta_4 X4 X4 X4 X2 X3

PARAMATER FOR POPULATION RANGE: beta_4

DATA COLUMNS X1 X2 X3 X4 Y

```

BT2022_qiv_22_alldata
$[0]@,$[0]@,$[0]@,$[0]@,$[-0.041421565]@
$[0.10337212]@,$[0.056985079]@,$[0.093255503]@,$[0.1855495]@,$[-1.3404092]@
$[0.33540816]@,$[0.26306585]@,$[0.2330542]@,$[0.32768815]@,$[0.9074909]@
$[0.3889565]@,$[0.4876455]@,$[0.17799031]@,$[0.28094224]@,$[1.9472106]@
$[0.57811282]@,$[0.67181262]@,$[0.34547975]@,$[0.5306184]@,$[-0.77387162]@
$[0.91325897]@,$[0.7828083]@,$[0.53908634]@,$[0.55906626]@,$[1.5024126]@
$[0.84114021]@,$[1.1869567]@,$[1.1441834]@,$[1.1511292]@,$[7.7518246]@
$[0.84496392]@,$[1.0844437]@,$[1.0625676]@,$[1.3328472]@,$[8.3805891]@
$[0.63910784]@,$[0.62901061]@,$[1.1128611]@,$[0.99625169]@,$[2.6584659]@
$[1.3952033]@,$[0.85303859]@,$[1.4305312]@,$[0.87662622]@,$[7.0834332]@
$[1.8997395]@,$[1.5423576]@,$[1.0679922]@,$[0.51570049]@,$[11.788214]@
$[0.5623287]@,$[1.1760886]@,$[1.0392349]@,$[1.1010436]@,$[4.2328683]@
$[1.9499449]@,$[0.79663391]@,$[1.5425173]@,$[1.1698732]@,$[16.998636]@
$[1.9811998]@,$[1.3357621]@,$[0.86326318]@,$[2.0981113]@,$[48.34291]@
$[1.2269913]@,$[1.7856416]@,$[2.7815026]@,$[1.465598]@,$[54.978876]@
$[2.1331177]@,$[2.0993787]@,$[2.9664867]@,$[2.6780516]@,$[377.9842]@
$[2.8295462]@,$[1.0915643]@,$[1.6593372]@,$[2.0150805]@,$[102.11635]@
$[2.9868315]@,$[2.042586]@,$[3.0351867]@,$[1.84275]@,$[340.45155]@
$[0.92684976]@,$[2.018171]@,$[1.2613539]@,$[2.6816931]@,$[92.973433]@
$[3.5111405]@,$[1.1319956]@,$[1.4897484]@,$[2.5534265]@,$[189.92205]@

```

BS20B036

```

alpha = 0.14053466
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X4 X2 X2 X2 + beta_2 X2 X2 X1 X1 X2 + beta_3 X3 X3 X4 X1 X1
+ beta_4 X4 X1 X1 X1
PARAMATER FOR POPULATION RANGE: beta_1
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@,$[4.3619407]@
$[0.076187958]@,$[0.061871736]@,$[0.11996757]@,$[0.15748078]@,$[2.2396041]@
$[0.15327704]@,$[0.11289793]@,$[0.27834276]@,$[0.13154411]@,$[0.27572187]@
$[0.22785492]@,$[0.38902403]@,$[0.17658249]@,$[0.50544729]@,$[2.6415027]@
$[0.39685863]@,$[0.49761673]@,$[0.73461832]@,$[0.27989218]@,$[2.0369027]@
$[0.43717357]@,$[0.55380913]@,$[0.7302591]@,$[0.65278824]@,$[3.049442]@
$[0.75579115]@,$[1.1083948]@,$[0.82903893]@,$[0.46457271]@,$[5.4829683]@
$[0.41760485]@,$[0.7315267]@,$[0.95770482]@,$[0.67689342]@,$[5.1960009]@
$[0.43697095]@,$[1.4990307]@,$[0.54480039]@,$[1.1200904]@,$[6.6090458]@
$[0.53492977]@,$[1.0778947]@,$[1.3137208]@,$[1.1653799]@,$[6.6189101]@
$[1.3973804]@,$[0.53880434]@,$[0.84455509]@,$[0.9052066]@,$[16.48526]@
$[0.95341425]@,$[1.7048849]@,$[0.8777191]@,$[1.4331919]@,$[20.844197]@
$[0.97443139]@,$[0.89750991]@,$[1.5282399]@,$[1.4422639]@,$[14.772168]@
$[1.9703609]@,$[0.74559614]@,$[0.84419028]@,$[1.447921]@,$[76.237026]@
$[2.4157063]@,$[1.0695162]@,$[2.3683706]@,$[1.4287854]@,$[191.45782]@
$[1.1662144]@,$[1.6869895]@,$[2.592157]@,$[1.2100503]@,$[57.623608]@
$[1.1279286]@,$[2.5571769]@,$[1.2286002]@,$[2.0210778]@,$[87.738876]@
$[1.8461914]@,$[1.7607249]@,$[1.2675392]@,$[1.2388024]@,$[74.296662]@
$[2.5678353]@,$[2.2281259]@,$[3.3280196]@,$[2.432612]@,$[795.2899]@

```

BT2022_qiv_22_alldata
\$[1.9284546]@,\$[1.7721971]@,\$[2.6108576]@,\$[3.7572079]@,\$[457.94398]@

BS20B037
alpha = 0.15060484
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X4 X4 X3 X4 + beta_2 X2 X2 X3 X2 X1 + beta_3 X3 X1 X4 X3 X3
+ beta_4 X4 X2 X3 X1 X1
PARAMATER FOR POPULATION RANGE: beta_0
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[1.0083226]@
\$[0.11894593]@,\$[0.14740332]@,\$[0.18298963]@,\$[0.17655435]@,\$[3.0425505]@
\$[0.32447554]@,\$[0.2978086]@,\$[0.39344469]@,\$[0.11823474]@,\$[2.0324964]@
\$[0.38671387]@,\$[0.46437238]@,\$[0.45149011]@,\$[0.41994323]@,\$[2.293187]@
\$[0.58551476]@,\$[0.2066684]@,\$[0.23511181]@,\$[0.3743213]@,\$[2.7501527]@
\$[0.90236872]@,\$[0.66223132]@,\$[0.7326786]@,\$[0.30763704]@,\$[4.5675207]@
\$[0.72706061]@,\$[0.4520168]@,\$[0.93246401]@,\$[0.99228442]@,\$[6.0718714]@
\$[0.89052926]@,\$[0.76506273]@,\$[0.91779059]@,\$[1.374326]@,\$[12.04427]@
\$[0.84206076]@,\$[1.5967776]@,\$[1.4373907]@,\$[0.47729758]@,\$[11.486684]@
\$[0.52729554]@,\$[0.67081295]@,\$[1.0641013]@,\$[1.3365335]@,\$[9.5299871]@
\$[1.4781437]@,\$[1.1423033]@,\$[1.2651475]@,\$[1.2602564]@,\$[28.910112]@
\$[0.71568331]@,\$[1.3869931]@,\$[0.87811926]@,\$[1.7211012]@,\$[15.611213]@
\$[1.3410851]@,\$[1.3609104]@,\$[0.7258451]@,\$[2.1718939]@,\$[36.519424]@
\$[0.96715243]@,\$[1.3858319]@,\$[1.5113648]@,\$[1.3375099]@,\$[30.485378]@
\$[2.7309397]@,\$[2.593641]@,\$[1.508219]@,\$[1.2802407]@,\$[146.31741]@
\$[1.8712616]@,\$[1.0637304]@,\$[2.6544493]@,\$[0.85654628]@,\$[116.26338]@
\$[1.9750789]@,\$[1.6930755]@,\$[1.0529038]@,\$[2.6901996]@,\$[149.5788]@
\$[2.9295889]@,\$[3.2873157]@,\$[3.2693227]@,\$[1.3015554]@,\$[842.05961]@
\$[1.0570549]@,\$[1.706512]@,\$[1.6760086]@,\$[2.4958721]@,\$[128.00629]@
\$[2.7897409]@,\$[3.7981427]@,\$[1.2826158]@,\$[1.3832904]@,\$[250.80974]@

BS20B038
alpha = 0.18761328
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X4 X1 X3 X2 + beta_2 X2 X3 X3 X3 X2 + beta_3 X3 X4 X4 X1 X3
+ beta_4 X4 X4 X4 X2 X4
PARAMATER FOR POPULATION RANGE: beta_0
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[3.5801707]@
\$[0.16968073]@,\$[0.16254203]@,\$[0.14373577]@,\$[0.058052074]@,\$[2.6240862]@
\$[0.12956623]@,\$[0.33747167]@,\$[0.36228207]@,\$[0.22252884]@,\$[0.52718793]@
\$[0.19567198]@,\$[0.30834062]@,\$[0.48378287]@,\$[0.20277065]@,\$[4.7750779]@
\$[0.48432198]@,\$[0.2872526]@,\$[0.59434839]@,\$[0.5570125]@,\$[3.3426592]@
\$[0.58433353]@,\$[0.64802761]@,\$[0.47204944]@,\$[0.33365766]@,\$[4.0978144]@
\$[0.52516048]@,\$[1.1947744]@,\$[1.0483783]@,\$[0.91209456]@,\$[4.6484423]@
\$[0.70533165]@,\$[0.48438169]@,\$[1.097898]@,\$[0.93302499]@,\$[4.3598696]@
\$[0.90106793]@,\$[0.48926886]@,\$[1.0747621]@,\$[1.5001691]@,\$[7.1464215]@

BT2022_qiv_22_alldata

$\$[1.324328]@, \$[1.6066611]@, \$[1.105727]@, \$[1.7298919]@, \$[21.306373]@$
 $\$[0.94525802]@, \$[1.6500932]@, \$[1.525434]@, \$[1.5360407]@, \$[13.823162]@$
 $\$[1.2035158]@, \$[1.5999198]@, \$[2.0026558]@, \$[1.482844]@, \$[-3.1359968]@$
 $\$[1.5021499]@, \$[0.78781717]@, \$[0.75317344]@, \$[1.3034331]@, \$[2.8293273]@$
 $\$[2.556179]@, \$[1.7245684]@, \$[1.0617912]@, \$[0.82550314]@, \$[-27.617952]@$
 $\$[0.73995744]@, \$[2.309989]@, \$[2.115459]@, \$[2.1243958]@, \$[108.28767]@$
 $\$[2.0413908]@, \$[2.0307256]@, \$[1.4768548]@, \$[2.7653941]@, \$[184.22131]@$
 $\$[2.4583781]@, \$[1.779349]@, \$[3.1678481]@, \$[1.4662538]@, \$[-155.26451]@$
 $\$[0.95330209]@, \$[1.054473]@, \$[2.8570586]@, \$[1.0237613]@, \$[-3.4777745]@$
 $\$[1.5718779]@, \$[1.435645]@, \$[2.9245767]@, \$[1.1139481]@, \$[-29.412121]@$
 $\$[2.5102805]@, \$[1.5131819]@, \$[2.6771683]@, \$[1.2352247]@, \$[-101.30328]@$

BS20B039

alpha = 0.10241949

MLR FIT FUNCTION

$Y = \beta_0 + \beta_1 X_1 X_4 X_2 X_4 X_4 + \beta_2 X_2 X_2 X_4 X_1 X_1 + \beta_3 X_3 X_3 X_2 X_1 X_2 X_4$
 $+ \beta_4 X_4 X_1 X_1 X_3 X_4$

PARAMATER FOR POPULATION RANGE: beta_3

DATA COLUMNS X1 X2 X3 X4 Y

$\$[0]@, \$[0]@, \$[0]@, \$[0]@, \$[5.5877321]@$
 $\$[0.15352443]@, \$[0.14337135]@, \$[0.19588514]@, \$[0.13904604]@, \$[4.8781379]@$
 $\$[0.36716648]@, \$[0.26026288]@, \$[0.36928352]@, \$[0.14353582]@, \$[5.0712663]@$
 $\$[0.29105554]@, \$[0.37575632]@, \$[0.39818133]@, \$[0.28123933]@, \$[4.9157287]@$
 $\$[0.31735533]@, \$[0.26898302]@, \$[0.27041228]@, \$[0.39098286]@, \$[4.5133398]@$
 $\$[0.62762425]@, \$[0.89506206]@, \$[0.31941442]@, \$[0.33911647]@, \$[4.6300875]@$
 $\$[0.58558194]@, \$[1.1519118]@, \$[1.1636464]@, \$[0.42703705]@, \$[6.0637817]@$
 $\$[0.41772776]@, \$[0.84450583]@, \$[0.85629961]@, \$[0.91710978]@, \$[4.7909593]@$
 $\$[1.3125021]@, \$[0.98531871]@, \$[1.4477312]@, \$[0.68529259]@, \$[6.5491122]@$
 $\$[1.2777813]@, \$[0.5571058]@, \$[1.657065]@, \$[0.90838516]@, \$[4.8285742]@$
 $\$[0.72000925]@, \$[1.389177]@, \$[0.7077216]@, \$[1.4213274]@, \$[11.493364]@$
 $\$[1.1815446]@, \$[1.3468417]@, \$[2.1147037]@, \$[0.56550702]@, \$[9.3936861]@$
 $\$[1.6330952]@, \$[1.1378714]@, \$[1.6962598]@, \$[0.95584599]@, \$[13.573123]@$
 $\$[1.1132306]@, \$[1.4054053]@, \$[1.7698371]@, \$[1.2091359]@, \$[13.253467]@$
 $\$[1.9477716]@, \$[0.83392872]@, \$[2.4354388]@, \$[1.5920783]@, \$[13.91022]@$
 $\$[1.1408499]@, \$[1.522452]@, \$[2.7295118]@, \$[1.3381638]@, \$[17.435395]@$
 $\$[2.826197]@, \$[1.0923986]@, \$[2.7515679]@, \$[1.0558578]@, \$[21.881992]@$
 $\$[2.2589228]@, \$[3.3442118]@, \$[2.7693377]@, \$[2.0362464]@, \$[302.20529]@$
 $\$[1.8525321]@, \$[3.0710448]@, \$[1.023858]@, \$[3.1944639]@, \$[358.82858]@$
 $\$[3.5703425]@, \$[2.6881461]@, \$[1.3422545]@, \$[1.4626823]@, \$[283.69481]@$

CE17B111

alpha = 0.17953592

MLR FIT FUNCTION

$Y = \beta_0 + \beta_1 X_1 X_1 X_3 X_2 X_3 + \beta_2 X_2 X_3 X_3 X_2 X_2 + \beta_3 X_3 X_2 X_4 X_2 X_2$
 $+ \beta_4 X_4 X_2 X_3 X_1 X_4$

PARAMATER FOR POPULATION RANGE: beta_0

BT2022_qiv_22_alldata

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[-1.6739059]@
\$[0.13984665]@,\$[0.17922747]@,\$[0.17998336]@,\$[0.15978107]@,\$[-1.3602968]@
\$[0.22118989]@,\$[0.36459459]@,\$[0.10042877]@,\$[0.23239578]@,\$[-0.046540744]@
\$[0.2776652]@,\$[0.53306305]@,\$[0.25429652]@,\$[0.15412014]@,\$[-1.7263496]@
\$[0.22533643]@,\$[0.38350096]@,\$[0.34171886]@,\$[0.33098203]@,\$[0.40522758]@
\$[0.42953772]@,\$[0.80212246]@,\$[0.73428356]@,\$[0.83998608]@,\$[-1.7763429]@
\$[0.82946145]@,\$[1.0259944]@,\$[0.3515643]@,\$[1.134023]@,\$[0.26069093]@
\$[0.85289142]@,\$[1.322054]@,\$[0.90218782]@,\$[1.2320522]@,\$[7.3826628]@
\$[1.1218207]@,\$[1.0676226]@,\$[1.1119085]@,\$[0.4471433]@,\$[2.2164332]@
\$[0.86828214]@,\$[0.79584453]@,\$[1.5881036]@,\$[0.91828423]@,\$[2.8970062]@
\$[1.2989399]@,\$[1.7599372]@,\$[1.0083344]@,\$[1.3742759]@,\$[21.786255]@
\$[1.1355329]@,\$[0.63449928]@,\$[1.7540767]@,\$[1.4075207]@,\$[9.7249434]@
\$[0.68215063]@,\$[0.80357247]@,\$[1.3466461]@,\$[1.4578263]@,\$[6.3919164]@
\$[1.4668764]@,\$[1.7920707]@,\$[1.2479732]@,\$[1.7878155]@,\$[48.755689]@
\$[2.029917]@,\$[1.9956795]@,\$[0.74914693]@,\$[2.1196777]@,\$[58.600333]@
\$[0.75295573]@,\$[0.98845891]@,\$[1.9240354]@,\$[1.3814687]@,\$[11.082052]@
\$[1.3909392]@,\$[1.5584811]@,\$[2.9728236]@,\$[1.4642324]@,\$[85.860971]@
\$[1.0348294]@,\$[1.5391434]@,\$[1.9313261]@,\$[2.8402051]@,\$[102.77022]@
\$[2.8875804]@,\$[2.8470631]@,\$[1.9359808]@,\$[0.98603738]@,\$[167.46992]@
\$[1.2719139]@,\$[1.9314501]@,\$[1.9501318]@,\$[2.9127078]@,\$[175.73596]@

CE18B001
alpha = 0.088396164
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X1 X1 X1 + beta_2 X2 X4 X3 X1 X4 + beta_3 X3 X3 X1 X1 X4
+ beta_4 X4 X2 X1 X4 X4
PARAMATER FOR POPULATION RANGE: beta_3
DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[2.8303679]@
\$[0.053075648]@,\$[0.1305596]@,\$[0.060427642]@,\$[0.1737423]@,\$[3.316738]@
\$[0.11755525]@,\$[0.33290815]@,\$[0.22189783]@,\$[0.27702166]@,\$[5.0367204]@
\$[0.50533321]@,\$[0.55221074]@,\$[0.34864886]@,\$[0.18431509]@,\$[3.3280772]@
\$[0.57334709]@,\$[0.20578868]@,\$[0.32390558]@,\$[0.37084782]@,\$[3.7633647]@
\$[0.59169771]@,\$[0.25850984]@,\$[0.90273329]@,\$[0.38820236]@,\$[4.953875]@
\$[1.1702553]@,\$[1.0706909]@,\$[0.84880736]@,\$[0.32887366]@,\$[9.6958911]@
\$[1.2019872]@,\$[0.74536958]@,\$[0.82366808]@,\$[0.76247639]@,\$[10.41273]@
\$[1.3571704]@,\$[0.43083522]@,\$[1.2719343]@,\$[1.0425882]@,\$[13.234915]@
\$[0.46744223]@,\$[0.87312399]@,\$[0.4731393]@,\$[1.2805824]@,\$[6.9024429]@
\$[1.3362818]@,\$[1.5928688]@,\$[0.60904096]@,\$[1.9786876]@,\$[69.966023]@
\$[1.5361911]@,\$[1.45085]@,\$[0.75563583]@,\$[0.86752912]@,\$[28.6611]@
\$[0.81922403]@,\$[1.0028942]@,\$[0.71639988]@,\$[0.65999968]@,\$[5.5682093]@
\$[1.9558535]@,\$[1.0701697]@,\$[2.2322104]@,\$[0.85483118]@,\$[63.371389]@
\$[1.9940593]@,\$[2.5168085]@,\$[1.9728596]@,\$[1.0911436]@,\$[100.60867]@
\$[1.5616082]@,\$[1.551716]@,\$[1.2754254]@,\$[2.7654099]@,\$[204.58518]@
\$[1.8553066]@,\$[1.7590848]@,\$[2.4218111]@,\$[2.2287861]@,\$[177.55079]@
\$[0.99173458]@,\$[2.2999989]@,\$[2.1845366]@,\$[2.2463955]@,\$[112.3848]@

BT2022_qiv_22_alldata
\$[1.68853]@[3.1922835]@[1.5234722]@[0.98071388]@[55.5942]@
\$[1.8253033]@[3.7460425]@[1.2920989]@[3.1744615]@[826.12189]@

CE18B005

alpha = 0.054749288

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X3 X3 X3 X1 + beta_2 X2 X4 X3 X1 X1 + beta_3 X3 X3 X3 X1 X1
+ beta_4 X4 X3 X2 X4 X4

PARAMATER FOR POPULATION RANGE: beta_3

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@[0]@[0]@[0]@[0.66450403]@
\$[0.19942433]@[0.10778676]@[0.12356874]@[0.14513832]@[0.36037524]@
\$[0.1505886]@[0.14042179]@[0.14421685]@[0.35331749]@[0.59772916]@
\$[0.54115533]@[0.27095949]@[0.47648551]@[0.34462339]@[0.03755802]@
\$[0.58642268]@[0.52605432]@[0.51078302]@[0.33764693]@[0.5158856]@
\$[0.85069403]@[0.47421689]@[0.81799598]@[0.4497483]@[1.4133832]@
\$[1.0007656]@[0.47438612]@[0.3518409]@[0.41016775]@[0.67625726]@
\$[0.55462133]@[1.3152558]@[0.70348798]@[1.1075755]@[4.5158856]@
\$[0.95626291]@[1.4157781]@[1.216977]@[1.3795523]@[27.432321]@
\$[0.6968303]@[1.2903903]@[1.6601293]@[1.2844806]@[24.972405]@
\$[1.8916698]@[1.4914283]@[1.8541507]@[1.193338]@[120.73818]@
\$[2.1789558]@[0.62699483]@[2.1182763]@[1.9943727]@[233.82996]@
\$[2.1769883]@[0.954723]@[1.1948029]@[1.0112117]@[42.202269]@
\$[1.4287756]@[1.0448228]@[1.2170937]@[1.214297]@[23.838311]@
\$[2.1803856]@[1.9482099]@[2.2348147]@[1.6507699]@[317.31827]@
\$[1.4980765]@[1.6175987]@[1.4651976]@[2.1247666]@[119.16812]@
\$[1.2581723]@[1.2373307]@[2.9325679]@[1.4352921]@[208.11508]@
\$[1.3950519]@[1.7550033]@[2.0352828]@[2.6864]@[323.04666]@
\$[2.7689876]@[1.3626409]@[1.6235602]@[1.6161937]@[192.44814]@
\$[1.2896079]@[1.7452887]@[1.1979862]@[3.0706292]@[230.73846]@

CE18B007

alpha = 0.065369018

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X4 X1 X3 X2 + beta_2 X2 X1 X3 X3 X1 + beta_3 X3 X3 X4 X2 X4
+ beta_4 X4 X1 X2 X4 X4

PARAMATER FOR POPULATION RANGE: beta_3

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@[0]@[0]@[0]@[2.113593]@
\$[0.15369855]@[0.17761961]@[0.1104152]@[0.10689746]@[2.7526833]@
\$[0.29770566]@[0.13143015]@[0.26580376]@[0.3090508]@[4.3456469]@
\$[0.50619739]@[0.53708495]@[0.51107164]@[0.55120011]@[2.5629705]@
\$[0.21156003]@[0.57308439]@[0.58418322]@[0.38859453]@[2.2600061]@
\$[0.54309084]@[0.57329527]@[0.8262949]@[0.76690207]@[5.4399284]@
\$[0.61727253]@[0.54952157]@[1.0736267]@[0.84317831]@[6.0363118]@
\$[0.98772246]@[1.3796592]@[1.1651145]@[1.1557929]@[22.408856]@

```

BT2022_qiv_22_alldata
$[0.42878004]@,$[0.75971126]@,$[1.2341111]@,$[1.2831867]@,$[10.467728]@
$[1.3781496]@,$[1.1746447]@,$[0.60592473]@,$[1.0655081]@,$[9.159355]@
$[1.8090856]@,$[1.3843903]@,$[1.3892857]@,$[0.98904587]@,$[66.656304]@
$[0.73184821]@,$[2.151701]@,$[1.9546642]@,$[2.0523136]@,$[159.51759]@
$[1.9333328]@,$[2.2961305]@,$[2.2701377]@,$[2.3714528]@,$[533.34875]@
$[2.5575625]@,$[1.8457434]@,$[1.4791039]@,$[1.9854413]@,$[247.09384]@
$[1.1993901]@,$[1.2431025]@,$[1.3763015]@,$[1.0537925]@,$[33.395831]@
$[1.196284]@,$[1.0469983]@,$[2.4045879]@,$[2.3610152]@,$[182.42984]@
$[1.7625946]@,$[2.7096635]@,$[2.3888131]@,$[3.1680034]@,$[859.98915]@
$[2.3814786]@,$[2.7613623]@,$[3.1724275]@,$[1.500351]@,$[1123.7496]@
$[2.6759257]@,$[3.3766966]@,$[3.1447909]@,$[1.9725899]@,$[1918.2316]@
$[2.7208206]@,$[2.5071067]@,$[1.2914132]@,$[2.5980266]@,$[315.66947]@

```

CE18B008

alpha = 0.13516273

MLR FIT FUNCTION

$$Y = \beta_0 + \beta_1 X_1 X_1 X_1 X_1 X_2 + \beta_2 X_2 X_4 X_1 X_2 X_1 + \beta_3 X_3 X_3 X_4 X_4 X_2 + \beta_4 X_4 X_3 X_4 X_2 X_2$$

PARAMATER FOR POPULATION RANGE: beta_2

DATA COLUMNS X1 X2 X3 X4 Y

```

$[0]@,$[0]@,$[0]@,$[0]@,$[3.2165122]@
$[0.14094877]@,$[0.15469628]@,$[0.13454145]@,$[0.12860482]@,$[1.333946]@
$[0.38841087]@,$[0.25533183]@,$[0.31366987]@,$[0.28804722]@,$[2.9250991]@
$[0.35001875]@,$[0.50117647]@,$[0.1525679]@,$[0.33839912]@,$[3.7775542]@
$[0.448048]@,$[0.40893582]@,$[0.65753598]@,$[0.31647675]@,$[1.8826153]@
$[0.44531109]@,$[0.54536368]@,$[0.91756816]@,$[0.6873916]@,$[3.4621961]@
$[1.1906888]@,$[0.95409691]@,$[0.92023908]@,$[0.809381]@,$[12.641232]@
$[1.0364586]@,$[0.5381813]@,$[0.69728955]@,$[1.1071605]@,$[4.277606]@
$[0.54089699]@,$[1.0066035]@,$[0.71731398]@,$[1.5157084]@,$[8.7601327]@
$[0.7165518]@,$[0.97779473]@,$[1.3638844]@,$[1.3492993]@,$[13.498341]@
$[1.683427]@,$[0.74311907]@,$[1.5384012]@,$[1.1547773]@,$[32.697407]@
$[0.90658024]@,$[1.4598861]@,$[1.6562927]@,$[2.0994616]@,$[64.232405]@
$[2.1341601]@,$[2.361601]@,$[1.2854721]@,$[1.3370823]@,$[298.17706]@
$[1.309996]@,$[1.1912977]@,$[1.9311681]@,$[2.4160915]@,$[100.40067]@
$[0.81397181]@,$[1.4578314]@,$[1.8572356]@,$[1.3578093]@,$[36.287174]@
$[0.99854623]@,$[0.76802895]@,$[2.0074222]@,$[2.2944655]@,$[48.618602]@
$[2.1291041]@,$[2.6092491]@,$[0.97190032]@,$[2.6980304]@,$[557.11252]@
$[2.0921288]@,$[2.5903589]@,$[2.2087788]@,$[1.6955484]@,$[444.94007]@
$[1.3964912]@,$[2.4035345]@,$[3.0080093]@,$[2.1600801]@,$[381.79915]@
$[2.6623196]@,$[1.3168689]@,$[1.4125311]@,$[1.8869949]@,$[304.98317]@

```

CE18B009

alpha = 0.11261188

MLR FIT FUNCTION

$$Y = \beta_0 + \beta_1 X_1 X_2 X_2 X_1 X_1 + \beta_2 X_2 X_4 X_3 X_3 X_4 + \beta_3 X_3 X_4 X_4 X_3 X_2 + \beta_4 X_4 X_4 X_3 X_3 X_4$$

BT2022_qiv_22_alldata

PARAMATER FOR POPULATION RANGE: beta_4

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[0.044560343]@
\$[0.13533675]@,\$[0.069364714]@,\$[0.050618431]@,\$[0.13956089]@,\$[-0.19727799]@
\$[0.25990206]@,\$[0.31122769]@,\$[0.38368557]@,\$[0.33208608]@,\$[0.75347804]@
\$[0.4427268]@,\$[0.16439854]@,\$[0.50086768]@,\$[0.47024207]@,\$[-0.87395914]@
\$[0.52428252]@,\$[0.47790013]@,\$[0.56914436]@,\$[0.28087067]@,\$[0.35884274]@
\$[0.95511996]@,\$[0.88311373]@,\$[0.71544864]@,\$[0.62659727]@,\$[5.2686801]@
\$[0.88076946]@,\$[1.035651]@,\$[0.48651255]@,\$[1.1215001]@,\$[7.5581458]@
\$[1.3775666]@,\$[0.91473355]@,\$[0.35341519]@,\$[0.3942213]@,\$[14.827465]@
\$[1.3480579]@,\$[1.2291612]@,\$[1.3598391]@,\$[0.50111233]@,\$[25.403566]@
\$[1.1449395]@,\$[0.94538021]@,\$[0.61874024]@,\$[1.1238197]@,\$[9.5669757]@
\$[1.9471015]@,\$[1.8943827]@,\$[1.042077]@,\$[1.488632]@,\$[181.07082]@
\$[0.63596117]@,\$[1.1177427]@,\$[0.86731775]@,\$[1.2816449]@,\$[9.6358271]@
\$[1.847112]@,\$[1.1747587]@,\$[2.1810187]@,\$[1.0067567]@,\$[86.28948]@
\$[1.7428187]@,\$[1.4424575]@,\$[1.7571426]@,\$[2.244749]@,\$[201.87596]@
\$[2.6945131]@,\$[1.4636304]@,\$[1.9879616]@,\$[0.74443528]@,\$[261.21241]@
\$[0.75359883]@,\$[2.6084373]@,\$[1.7082253]@,\$[1.5652156]@,\$[139.35071]@
\$[2.7116021]@,\$[2.0054638]@,\$[2.2621701]@,\$[2.5844666]@,\$[892.59182]@
\$[2.2594243]@,\$[2.7099121]@,\$[3.1549563]@,\$[3.0737937]@,\$[2105.2324]@
\$[3.4517373]@,\$[2.2362515]@,\$[1.4609055]@,\$[2.960921]@,\$[1443.2455]@
\$[1.8824455]@,\$[2.4973878]@,\$[1.9870125]@,\$[2.7005996]@,\$[698.60142]@

CE18B010

alpha = 0.06656869

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X4 X1 X4 X1 + beta_2 X2 X3 X4 X3 X2 + beta_3 X3 X1 X4 X4 X4
+ beta_4 X4 X1 X3 X2 X4

PARAMATER FOR POPULATION RANGE: beta_4

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[3.1197311]@
\$[0.079368696]@,\$[0.15322395]@,\$[0.19149365]@,\$[0.10472813]@,\$[2.0755015]@
\$[0.31167097]@,\$[0.19681589]@,\$[0.2232811]@,\$[0.3486253]@,\$[2.2830684]@
\$[0.15349023]@,\$[0.5390719]@,\$[0.3617295]@,\$[0.44622124]@,\$[1.9917131]@
\$[0.77416433]@,\$[0.64066526]@,\$[0.6416717]@,\$[0.70330549]@,\$[4.3858999]@
\$[0.66129236]@,\$[0.60690359]@,\$[0.85411527]@,\$[0.28291905]@,\$[2.7145091]@
\$[0.82680062]@,\$[0.58688948]@,\$[0.46362463]@,\$[0.41224136]@,\$[3.4834617]@
\$[0.96688397]@,\$[1.3026688]@,\$[0.61646116]@,\$[1.383628]@,\$[15.541017]@
\$[1.1477366]@,\$[0.96445495]@,\$[0.63404305]@,\$[0.67717271]@,\$[6.0622715]@
\$[1.3903059]@,\$[1.4240142]@,\$[1.1614341]@,\$[0.72212837]@,\$[17.080059]@
\$[0.73763221]@,\$[1.7201025]@,\$[1.5667071]@,\$[1.9866773]@,\$[71.226665]@
\$[0.96915234]@,\$[1.1452976]@,\$[1.6919622]@,\$[1.9794007]@,\$[49.390126]@
\$[0.67152202]@,\$[2.0188598]@,\$[1.1102544]@,\$[2.0106595]@,\$[55.281227]@
\$[1.1846319]@,\$[2.48903]@,\$[2.0266447]@,\$[0.85627474]@,\$[87.53198]@
\$[2.5695018]@,\$[1.7381687]@,\$[2.2566151]@,\$[1.9007387]@,\$[369.29131]@
\$[1.896078]@,\$[2.7266805]@,\$[1.1411654]@,\$[0.81511207]@,\$[54.976904]@
\$[1.6367843]@,\$[1.9504388]@,\$[1.1169597]@,\$[2.4688659]@,\$[172.02491]@

BT2022_qiv_22_alldata
\$[1.606066]@[2.0103122]@[0.97809893]@[2.8625789]@[198.83667]@
\$[2.2666327]@[2.720298]@[3.1206557]@[3.2201573]@[1600.7363]@
\$[1.9921108]@[2.4594851]@[1.9532661]@[2.8532469]@[607.27089]@

CE18B012

alpha = 0.13906533

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X4 X2 X3 X4 + beta_2 X2 X1 X3 X2 X3 + beta_3 X3 X4 X1 X3 X3
+ beta_4 X4 X3 X4 X3 X1
PARAMATER FOR POPULATION RANGE: beta_3
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@[0]@[0]@[0]@[2.0949285]@
\$[0.14676572]@[0.15801882]@[0.19857097]@[0.14942412]@[4.7034912]@
\$[0.3397924]@[0.23213403]@[0.20606408]@[0.28680192]@[4.5246088]@
\$[0.45296634]@[0.56719383]@[0.39077073]@[0.28167494]@[5.2149932]@
\$[0.6043252]@[0.47654378]@[0.42429268]@[0.28295665]@[4.7995784]@
\$[0.3412577]@[0.5071865]@[0.92536532]@[0.88057994]@[4.0727744]@
\$[0.89481627]@[0.68414135]@[0.99579379]@[0.50805823]@[5.4810184]@
\$[0.93333686]@[0.97228349]@[1.1453033]@[0.854277]@[10.140443]@
\$[1.396047]@[1.0154578]@[0.72974473]@[1.3581578]@[5.0921104]@
\$[1.5983847]@[0.59375706]@[1.6311396]@[1.6257627]@[22.146578]@
\$[1.15869]@[0.56500745]@[1.7297718]@[1.0976775]@[16.210463]@
\$[1.2767584]@[1.2486065]@[2.0601072]@[1.6553818]@[51.043318]@
\$[2.1637553]@[1.6079251]@[2.0077898]@[2.0915843]@[98.037065]@
\$[1.9141327]@[1.1228302]@[1.6810397]@[2.0830292]@[31.560629]@
\$[1.9790783]@[1.3966933]@[1.9961116]@[1.7208983]@[80.025783]@
\$[2.3654467]@[2.6759616]@[2.6695197]@[0.93069166]@[582.33634]@
\$[1.2612093]@[2.4900364]@[2.0945526]@[2.4426126]@[114.55154]@
\$[3.3930696]@[2.88525]@[2.5286417]@[2.4547269]@[696.18944]@
\$[1.2877624]@[2.1078736]@[2.7045704]@[3.485078]@[145.72677]@
\$[3.7612982]@[2.9105562]@[2.7743414]@[1.7605859]@[1118.4503]@

CE18B014

alpha = 0.086724062

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X3 X1 X2 X4 + beta_2 X2 X2 X3 X2 X1 + beta_3 X3 X2 X1 X4 X2
+ beta_4 X4 X1 X4 X3 X1
PARAMATER FOR POPULATION RANGE: beta_1
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@[0]@[0]@[0]@[0.048519976]@
\$[0.19140954]@[0.19654248]@[0.16917537]@[0.15815591]@[0.59318055]@
\$[0.22405903]@[0.3531647]@[0.15718597]@[0.13924762]@[1.0549118]@
\$[0.21578367]@[0.18076426]@[0.24935227]@[0.21049754]@[0.80322243]@
\$[0.65319907]@[0.68532941]@[0.42040254]@[0.66329162]@[0.37747538]@
\$[0.56455939]@[0.88685377]@[0.49806504]@[0.99913775]@[2.5612285]@
\$[1.1092872]@[0.91911993]@[0.86245372]@[0.88682221]@[11.527352]@

```

BT2022_qiv_22_alldata
$[0.47798023]@,$[0.4595171]@,$[0.66964477]@,$[1.2614513]@,$[1.5422141]@
$[0.92712585]@,$[0.89164164]@,$[0.87678155]@,$[1.4765261]@,$[13.806694]@
$[0.5088655]@,$[0.74001708]@,$[1.259214]@,$[1.0967203]@,$[5.2282104]@
$[1.6760827]@,$[1.0415449]@,$[1.742409]@,$[1.2734138]@,$[71.088961]@
$[1.2439736]@,$[0.95592168]@,$[1.3939975]@,$[2.1747177]@,$[64.84069]@
$[2.244253]@,$[2.2316292]@,$[1.8944305]@,$[1.1709207]@,$[490.45287]@
$[0.78852204]@,$[2.0299269]@,$[0.89008529]@,$[2.3195194]@,$[78.261222]@
$[0.93043126]@,$[1.7285401]@,$[2.50111]@,$[1.6230175]@,$[153.41188]@
$[1.893635]@,$[1.8475839]@,$[0.99404455]@,$[1.0970469]@,$[129.28381]@
$[3.0509011]@,$[1.6576941]@,$[2.494772]@,$[1.4745029]@,$[574.44569]@
$[0.97369749]@,$[1.0166476]@,$[1.9295618]@,$[1.3074231]@,$[38.400642]@
$[3.0266162]@,$[1.7763428]@,$[3.2828566]@,$[3.4200413]@,$[2184.3696]@
$[1.245579]@,$[2.7129363]@,$[1.8536787]@,$[2.2208251]@,$[532.0008]@

```

```

CE18B015
alpha = 0.1446475
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X1 X3 X1 X4 + beta_2 X2 X1 X3 X1 X2 + beta_3 X3 X2 X4 X4 X2
+ beta_4 X4 X3 X4 X3 X1
PARAMATER FOR POPULATION RANGE: beta_0
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@,$[3.4519377]@
$[0.19810761]@,$[0.19433358]@,$[0.12942738]@,$[0.08448479]@,$[4.8232241]@
$[0.1022663]@,$[0.35919617]@,$[0.2100737]@,$[0.22547075]@,$[3.3281408]@
$[0.32877776]@,$[0.55907774]@,$[0.51705689]@,$[0.18725567]@,$[5.2065278]@
$[0.65962176]@,$[0.63788573]@,$[0.78381111]@,$[0.75372795]@,$[7.6830505]@
$[0.57765372]@,$[0.84217732]@,$[0.50032809]@,$[0.6721007]@,$[8.1192666]@
$[0.5654697]@,$[0.62220458]@,$[0.95414971]@,$[0.53886475]@,$[7.299417]@
$[0.48824751]@,$[1.2239645]@,$[1.2780441]@,$[0.96514408]@,$[12.822319]@
$[1.4525979]@,$[1.0071486]@,$[1.0022321]@,$[1.0415069]@,$[11.043893]@
$[0.85175838]@,$[1.2539067]@,$[0.84431577]@,$[0.63018987]@,$[7.3552515]@
$[1.5797792]@,$[1.2299374]@,$[0.57822935]@,$[1.001632]@,$[13.292927]@
$[1.826454]@,$[1.6356722]@,$[1.5697511]@,$[1.2917789]@,$[40.794335]@
$[1.234436]@,$[1.0865692]@,$[0.70792863]@,$[1.6520433]@,$[17.443468]@
$[1.4487181]@,$[1.2348902]@,$[2.142667]@,$[2.59098]@,$[48.022835]@
$[1.2386441]@,$[2.5486426]@,$[1.9503499]@,$[2.5323629]@,$[439.71703]@
$[2.1543572]@,$[1.1736013]@,$[2.5076935]@,$[0.91820677]@,$[17.843302]@
$[1.4425968]@,$[1.1398683]@,$[1.976977]@,$[1.8073355]@,$[23.771917]@
$[2.729559]@,$[2.4258615]@,$[3.0046472]@,$[0.89776469]@,$[86.317425]@
$[0.96971821]@,$[2.1140388]@,$[1.4969537]@,$[2.723662]@,$[274.76931]@
$[3.5542832]@,$[1.6287029]@,$[3.6781204]@,$[2.5919094]@,$[93.426295]@

```

```

CE18B021
alpha = 0.053996032
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X2 X3 X1 X1 + beta_2 X2 X1 X2 X2 X2 + beta_3 X3 X4 X3 X2 X4

```

```

BT2022_qiv_22_alldata
+ beta_4 X4 X3 X1 X3 X4
PARAMATER FOR POPULATION RANGE: beta_1
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@,$[-2.398152]@
$[0.15234173]@,$[0.16151391]@,$[0.058666185]@,$[0.15204186]@,$[-1.5862512]@
$[0.178842]@,$[0.13470662]@,$[0.170652]@,$[0.2570824]@,$[-3.344586]@
$[0.46530831]@,$[0.27143208]@,$[0.4536535]@,$[0.32062176]@,$[-1.5099511]@
$[0.40762773]@,$[0.26530731]@,$[0.67988016]@,$[0.50207395]@,$[-2.9153912]@
$[0.77298008]@,$[0.49149078]@,$[0.54825094]@,$[0.28186816]@,$[-2.0292294]@
$[1.1322205]@,$[0.39232647]@,$[1.1067353]@,$[0.89710014]@,$[0.33327349]@
$[0.92692084]@,$[1.3081866]@,$[0.55309631]@,$[0.88411343]@,$[-5.8307426]@
$[0.74706396]@,$[1.5577033]@,$[1.0352077]@,$[0.62631782]@,$[-3.169186]@
$[0.93131463]@,$[0.56192064]@,$[1.7737166]@,$[1.7287898]@,$[8.912843]@
$[1.4196309]@,$[1.1205765]@,$[1.0054754]@,$[1.7283076]@,$[7.6773369]@
$[2.1757541]@,$[1.9487927]@,$[0.59380773]@,$[1.7243598]@,$[-11.920977]@
$[1.376938]@,$[2.3250156]@,$[1.0051697]@,$[1.9296455]@,$[-0.70677757]@
$[2.5119309]@,$[1.8260964]@,$[2.2897088]@,$[2.3723798]@,$[167.29205]@
$[0.7481202]@,$[2.7865838]@,$[2.027672]@,$[2.6584047]@,$[284.69314]@
$[2.856567]@,$[2.9616607]@,$[1.2174589]@,$[1.1997544]@,$[-75.718233]@
$[1.1608791]@,$[2.3152535]@,$[1.0719323]@,$[1.3223078]@,$[-9.7732717]@
$[2.4742745]@,$[3.1910864]@,$[2.8738059]@,$[2.8992037]@,$[631.47317]@
$[2.7616265]@,$[2.6123376]@,$[2.5998127]@,$[1.3349369]@,$[147.9361]@
$[1.4004962]@,$[1.4820875]@,$[2.7121719]@,$[1.7678127]@,$[102.16815]@

```

```

CE18B022
alpha = 0.16214079
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X1 X2 X2 X3 + beta_2 X2 X3 X1 X2 X3 + beta_3 X3 X2 X1 X1 X1
+ beta_4 X4 X2 X1 X3 X2
PARAMATER FOR POPULATION RANGE: beta_3
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@,$[-2.0602288]@
$[0.1793889]@,$[0.10077175]@,$[0.14090702]@,$[0.16826645]@,$[0.44629415]@
$[0.14487816]@,$[0.26754815]@,$[0.21389811]@,$[0.37485428]@,$[0.99130098]@
$[0.53794166]@,$[0.4361792]@,$[0.2202507]@,$[0.26339405]@,$[-1.6587715]@
$[0.39711207]@,$[0.67214203]@,$[0.70052579]@,$[0.29189214]@,$[-0.10932774]@
$[0.95104574]@,$[0.73326473]@,$[0.74494243]@,$[0.26890094]@,$[2.2970088]@
$[0.64019219]@,$[0.49111042]@,$[0.36661423]@,$[1.008242]@,$[0.76946191]@
$[0.48650251]@,$[0.79843821]@,$[1.1104324]@,$[1.110033]@,$[2.9948628]@
$[0.99810367]@,$[0.86308241]@,$[1.4888273]@,$[1.4225841]@,$[20.611947]@
$[1.3733155]@,$[1.5554536]@,$[1.131416]@,$[0.63343114]@,$[48.237712]@
$[1.9008217]@,$[0.51383179]@,$[0.51251431]@,$[0.53621819]@,$[5.0851739]@
$[2.096484]@,$[1.1670295]@,$[2.08208]@,$[0.88504354]@,$[139.03583]@
$[2.2123805]@,$[2.1558927]@,$[0.69113109]@,$[1.1173232]@,$[117.88183]@
$[1.9596354]@,$[2.5394236]@,$[1.952578]@,$[0.7029641]@,$[460.53906]@
$[1.9815728]@,$[1.1270333]@,$[1.8201899]@,$[1.895852]@,$[121.84582]@
$[1.9336141]@,$[0.91257998]@,$[1.6308938]@,$[1.1963397]@,$[59.500405]@

```

BT2022_qiv_22_alldata
\$[1.6530333]@,\$[2.1130541]@,\$[2.1789228]@,\$[2.8104562]@,\$[465.35852]@
\$[2.1884852]@,\$[2.5049555]@,\$[1.6139187]@,\$[1.0018414]@,\$[437.48843]@
\$[3.2786708]@,\$[2.9636463]@,\$[2.6694078]@,\$[2.6060195]@,\$[2861.3018]@
\$[2.5959678]@,\$[2.7059279]@,\$[1.4210625]@,\$[1.7014709]@,\$[649.66159]@

CE18B025
alpha = 0.12415794
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X4 X3 X3 X2 + beta_2 X2 X3 X2 X3 X4 + beta_3 X3 X4 X1 X4 X2
+ beta_4 X4 X1 X2 X3 X2
PARAMATER FOR POPULATION RANGE: beta_3
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[-0.16964351]@
\$[0.12190192]@,\$[0.1051538]@,\$[0.086940808]@,\$[0.19921631]@,\$[2.018823]@
\$[0.38065479]@,\$[0.18833414]@,\$[0.16077062]@,\$[0.20985171]@,\$[2.1406834]@
\$[0.1541677]@,\$[0.55331917]@,\$[0.17940033]@,\$[0.58308775]@,\$[0.80662609]@
\$[0.51599173]@,\$[0.64523972]@,\$[0.52049379]@,\$[0.62383455]@,\$[0.36516624]@
\$[0.61776929]@,\$[0.764448433]@,\$[0.73200659]@,\$[0.54715269]@,\$[1.4239386]@
\$[1.0601845]@,\$[0.51902629]@,\$[0.82206204]@,\$[0.88248136]@,\$[2.6919779]@
\$[1.3928987]@,\$[1.0036952]@,\$[0.79461844]@,\$[0.67744149]@,\$[5.2821208]@
\$[0.71309707]@,\$[1.0977284]@,\$[1.3513125]@,\$[0.94538627]@,\$[6.5171185]@
\$[0.55645038]@,\$[0.83065567]@,\$[1.352643]@,\$[1.5722375]@,\$[4.2155148]@
\$[1.1973424]@,\$[0.59087052]@,\$[1.2589146]@,\$[0.61101149]@,\$[1.2439593]@
\$[0.74408785]@,\$[0.69754146]@,\$[1.8632569]@,\$[0.67611825]@,\$[3.7723543]@
\$[1.7632762]@,\$[1.371373]@,\$[1.9416532]@,\$[0.82701992]@,\$[23.349818]@
\$[1.8464231]@,\$[1.6310912]@,\$[1.3721577]@,\$[1.5497746]@,\$[30.762073]@
\$[1.823961]@,\$[2.1188431]@,\$[1.7472129]@,\$[1.921871]@,\$[78.604595]@
\$[1.8989091]@,\$[1.6989487]@,\$[1.3508215]@,\$[0.99356898]@,\$[23.737898]@
\$[2.1640072]@,\$[2.2880804]@,\$[1.329145]@,\$[2.4335488]@,\$[80.025715]@
\$[1.8335297]@,\$[1.7864752]@,\$[1.9000262]@,\$[2.3851399]@,\$[70.76671]@
\$[1.6677999]@,\$[1.6051653]@,\$[1.3469643]@,\$[1.8910077]@,\$[26.584117]@
\$[3.0974991]@,\$[1.7007753]@,\$[2.2460423]@,\$[2.3426901]@,\$[137.56862]@

CE18B027
alpha = 0.050537884
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X1 X1 X4 X4 + beta_2 X2 X4 X4 X2 X1 + beta_3 X3 X3 X1 X2 X2
+ beta_4 X4 X3 X3 X3 X3
PARAMATER FOR POPULATION RANGE: beta_4
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[1.2850444]@
\$[0.16999601]@,\$[0.16807729]@,\$[0.064598833]@,\$[0.17029781]@,\$[0.45479227]@
\$[0.16258902]@,\$[0.10899351]@,\$[0.22399567]@,\$[0.39033782]@,\$[-0.68130038]@
\$[0.33645482]@,\$[0.36741712]@,\$[0.57784422]@,\$[0.46716308]@,\$[0.47097125]@
\$[0.58363341]@,\$[0.56180058]@,\$[0.49485112]@,\$[0.29356511]@,\$[2.9778394]@
\$[0.64307589]@,\$[0.92242688]@,\$[0.62479036]@,\$[0.39967177]@,\$[1.4688123]@

BT2022_qiv_22_alldata

$\$[0.39674707]@, \$[0.72622636]@, \$[0.83425514]@, \$[1.0350022]@, \$[3.8766005]@$
 $\$[0.88490363]@, \$[0.87954446]@, \$[0.60397997]@, \$[0.73110265]@, \$[2.2385646]@$
 $\$[1.1863913]@, \$[0.99560836]@, \$[0.42168389]@, \$[0.49051794]@, \$[2.275788]@$
 $\$[1.315729]@, \$[1.6403973]@, \$[1.6408217]@, \$[0.78031839]@, \$[31.723184]@$
 $\$[0.92499951]@, \$[1.9975525]@, \$[0.98304124]@, \$[1.7343428]@, \$[23.791471]@$
 $\$[1.264813]@, \$[0.90936615]@, \$[1.438084]@, \$[0.62592384]@, \$[15.334028]@$
 $\$[0.62378078]@, \$[2.0826605]@, \$[2.3576627]@, \$[0.61977919]@, \$[86.671057]@$
 $\$[2.4258561]@, \$[0.6714719]@, \$[2.1801553]@, \$[1.5124501]@, \$[212.37858]@$
 $\$[1.7028186]@, \$[2.3218246]@, \$[1.3085103]@, \$[2.4757068]@, \$[150.81331]@$
 $\$[1.0836338]@, \$[0.97873275]@, \$[1.3462668]@, \$[1.8596912]@, \$[38.622688]@$
 $\$[1.8464849]@, \$[2.5648498]@, \$[0.85689414]@, \$[2.2093182]@, \$[129.13737]@$
 $\$[2.4332847]@, \$[2.9812863]@, \$[2.0207727]@, \$[2.7888095]@, \$[604.27234]@$
 $\$[2.6045653]@, \$[3.2058112]@, \$[3.0286186]@, \$[2.8875238]@, \$[1593.4592]@$
 $\$[1.3692167]@, \$[2.6359735]@, \$[3.4143481]@, \$[3.7427247]@, \$[2421.4037]@$

CE18B028

alpha = 0.12427181

MLR FIT FUNCTION

$Y = \beta_0 + \beta_1 X_1 X_4 X_4 X_4 X_1 + \beta_2 X_2 X_3 X_2 X_2 X_2 + \beta_3 X_3 X_4 X_4 X_1 X_4$
 $+ \beta_4 X_4 X_1 X_1 X_3 X_4$
 PARAMATER FOR POPULATION RANGE: beta_2
 DATA COLUMNS X1 X2 X3 X4 Y
 $\$[0]@, \$[0]@, \$[0]@, \$[0]@, \$[-1.2026783]@$
 $\$[0.13378099]@, \$[0.077166323]@, \$[0.10355278]@, \$[0.16927269]@, \$[-2.7359708]@$
 $\$[0.28258459]@, \$[0.26869983]@, \$[0.25272104]@, \$[0.39045917]@, \$[-1.7540244]@$
 $\$[0.35035059]@, \$[0.2744943]@, \$[0.58904319]@, \$[0.38740693]@, \$[-3.3111733]@$
 $\$[0.66824337]@, \$[0.54105]@, \$[0.55733707]@, \$[0.33698021]@, \$[-1.2453432]@$
 $\$[0.3096979]@, \$[0.72090075]@, \$[0.93607882]@, \$[0.77077731]@, \$[-1.7297998]@$
 $\$[1.0404976]@, \$[0.84182682]@, \$[0.68120012]@, \$[0.41795075]@, \$[-1.7186024]@$
 $\$[0.37667558]@, \$[0.80919873]@, \$[1.196882]@, \$[1.0455522]@, \$[0.97307491]@$
 $\$[0.45003337]@, \$[1.1540707]@, \$[0.54832803]@, \$[0.89713317]@, \$[0.95199682]@$
 $\$[0.79057269]@, \$[1.2045076]@, \$[0.50322426]@, \$[1.1320248]@, \$[2.6619733]@$
 $\$[1.321125]@, \$[0.76402923]@, \$[0.5154999]@, \$[1.0572077]@, \$[-2.6250419]@$
 $\$[0.92715898]@, \$[1.8882097]@, \$[2.0014198]@, \$[1.4542701]@, \$[80.213086]@$
 $\$[2.0263596]@, \$[1.187863]@, \$[1.2416618]@, \$[1.9353184]@, \$[56.825752]@$
 $\$[1.8921443]@, \$[2.5876064]@, \$[2.5188264]@, \$[1.6526593]@, \$[353.24233]@$
 $\$[2.1117106]@, \$[2.4090463]@, \$[0.88633399]@, \$[1.052607]@, \$[75.547986]@$
 $\$[1.8850552]@, \$[2.9521133]@, \$[2.695824]@, \$[2.991563]@, \$[949.43532]@$
 $\$[0.87686846]@, \$[1.5118199]@, \$[0.91289299]@, \$[1.5910539]@, \$[19.459329]@$
 $\$[1.3442066]@, \$[0.90218434]@, \$[2.5986177]@, \$[1.5083729]@, \$[54.436304]@$
 $\$[3.4230001]@, \$[2.7385888]@, \$[3.2035407]@, \$[1.9054818]@, \$[819.37881]@$
 $\$[2.5023497]@, \$[2.0544817]@, \$[2.1323644]@, \$[3.1237478]@, \$[598.36004]@$

CE18B030

alpha = 0.18681992

MLR FIT FUNCTION

```

BT2022_qiv_22_alldata
Y = beta_0 + beta_1 X1 X4 X4 X3 X3 + beta_2 X2 X1 X3 X2 X4 + beta_3 X3 X2 X3 X1 X2
+ beta_4 X4 X3 X1 X2 X2
PARAMATER FOR POPULATION RANGE: beta_1
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@,$[5.3730067]@
$[0.16539232]@,$[0.082772299]@,$[0.1919554]@,$[0.062367124]@,$[4.0132057]@
$[0.39446524]@,$[0.39847565]@,$[0.29662923]@,$[0.2796878]@,$[6.1426329]@
$[0.17539744]@,$[0.37200215]@,$[0.3700389]@,$[0.26839977]@,$[5.4276166]@
$[0.21397545]@,$[0.45184525]@,$[0.38482662]@,$[0.27768816]@,$[6.1884298]@
$[0.97170235]@,$[0.42597092]@,$[0.52147953]@,$[0.55029812]@,$[7.1014567]@
$[0.89203932]@,$[0.83463133]@,$[1.1831412]@,$[1.1590671]@,$[15.434825]@
$[0.8999763]@,$[1.3749261]@,$[0.43819689]@,$[1.1093977]@,$[7.7913211]@
$[1.2674277]@,$[1.5755368]@,$[0.79642286]@,$[0.85658326]@,$[15.330148]@
$[1.2617988]@,$[1.070524]@,$[0.5415075]@,$[0.67213436]@,$[6.5003818]@
$[0.82814216]@,$[1.4602199]@,$[1.1327296]@,$[0.84989227]@,$[14.553962]@
$[1.789738]@,$[1.3007744]@,$[0.72362094]@,$[0.93213607]@,$[15.707363]@
$[0.89312369]@,$[0.93316141]@,$[0.70284275]@,$[1.7475219]@,$[12.86399]@
$[1.9682602]@,$[2.4888989]@,$[1.45643]@,$[1.5779362]@,$[148.8593]@
$[1.6077844]@,$[0.78979648]@,$[2.7750755]@,$[2.6356665]@,$[394.21534]@
$[1.8713564]@,$[2.2455039]@,$[0.86979928]@,$[2.1672296]@,$[72.874378]@
$[1.2404718]@,$[2.5603959]@,$[2.6011066]@,$[1.9116794]@,$[321.82283]@
$[3.3470545]@,$[0.87083704]@,$[1.1577634]@,$[2.4636133]@,$[138.08628]@
$[3.4533833]@,$[1.6844275]@,$[3.5973629]@,$[2.1423157]@,$[1276.268]@
$[1.6970879]@,$[2.6545915]@,$[3.6877684]@,$[2.5473953]@,$[1181.4772]@

```

CE18B032

```

alpha = 0.098619295
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X1 X4 X3 X2 + beta_2 X2 X4 X3 X4 X3 + beta_3 X3 X2 X3 X3 X3
+ beta_4 X4 X2 X1 X1 X3
PARAMATER FOR POPULATION RANGE: beta_1
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@,$[1.7974229]@
$[0.15105377]@,$[0.090432]@,$[0.12324581]@,$[0.19959423]@,$[1.1564879]@
$[0.14308483]@,$[0.30729323]@,$[0.26143308]@,$[0.35502335]@,$[0.79816118]@
$[0.47754881]@,$[0.35925832]@,$[0.49459124]@,$[0.39451025]@,$[1.6081224]@
$[0.20164832]@,$[0.32297955]@,$[0.6352241]@,$[0.3801781]@,$[2.2389292]@
$[0.75815518]@,$[0.64974185]@,$[0.87582415]@,$[0.45482199]@,$[-0.39135902]@
$[0.6574971]@,$[1.0206136]@,$[0.51098769]@,$[0.79148004]@,$[-0.95333956]@
$[0.79946082]@,$[0.60984616]@,$[0.944493]@,$[1.1899901]@,$[4.4950396]@
$[0.9791275]@,$[1.5641687]@,$[1.0309224]@,$[1.0866166]@,$[7.3537063]@
$[1.5479155]@,$[1.2107891]@,$[1.7475456]@,$[0.9302629]@,$[13.179335]@
$[1.8857057]@,$[0.79314335]@,$[1.3948996]@,$[0.5606843]@,$[3.4495879]@
$[0.78184582]@,$[2.1170959]@,$[0.77847854]@,$[1.010175]@,$[7.3982419]@
$[0.63536744]@,$[0.68917905]@,$[1.841382]@,$[2.3408081]@,$[46.64906]@
$[1.0998686]@,$[0.97468461]@,$[1.3159307]@,$[1.2933986]@,$[12.580817]@
$[2.0124834]@,$[0.73939984]@,$[2.1277158]@,$[1.257345]@,$[23.952001]@

```

```

BT2022_qiv_22_alldata
$[1.1780942]@,$[1.8466801]@,$[2.1894251]@,$[1.9843001]@,$[130.32622]@
$[1.0098006]@,$[2.2684067]@,$[1.3244902]@,$[0.86943026]@,$[15.084941]@
$[1.1059185]@,$[3.3116339]@,$[2.96206]@,$[2.4528206]@,$[648.96337]@
$[3.3283484]@,$[2.0983264]@,$[1.4616446]@,$[1.0345145]@,$[27.011962]@
$[1.8807837]@,$[1.4580165]@,$[3.307418]@,$[2.6226616]@,$[415.47709]@

```

CE18B034

```

alpha = 0.081814351
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X3 X4 X2 X3 + beta_2 X2 X1 X1 X4 X4 + beta_3 X3 X1 X2 X2 X1
+ beta_4 X4 X3 X1 X2 X1
PARAMATER FOR POPULATION RANGE: beta_2
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@,$[2.8700835]@
$[0.055312024]@,$[0.10985168]@,$[0.076144353]@,$[0.15291704]@,$[2.7123686]@
$[0.24058691]@,$[0.29774422]@,$[0.33400946]@,$[0.36954974]@,$[2.959211]@
$[0.58902551]@,$[0.16690253]@,$[0.53475422]@,$[0.29979649]@,$[2.8197695]@
$[0.56026641]@,$[0.79408764]@,$[0.20467089]@,$[0.30539141]@,$[0.88648039]@
$[0.43932321]@,$[0.29036445]@,$[0.71470911]@,$[0.81497286]@,$[3.9523106]@
$[1.133248]@,$[0.59987294]@,$[0.31021281]@,$[0.86944685]@,$[5.9114683]@
$[0.39657624]@,$[1.152822]@,$[0.68684939]@,$[0.97311637]@,$[7.6224498]@
$[1.246628]@,$[0.64226728]@,$[0.4441386]@,$[1.1615781]@,$[7.4993763]@
$[0.70945099]@,$[1.0328841]@,$[1.0182029]@,$[0.7361206]@,$[12.270115]@
$[1.7306034]@,$[0.70426632]@,$[1.2840465]@,$[1.1551994]@,$[46.629423]@
$[2.0971985]@,$[1.8501037]@,$[1.7040088]@,$[0.78594573]@,$[213.76434]@
$[1.6785631]@,$[2.2175212]@,$[0.87607318]@,$[0.65582498]@,$[76.090194]@
$[1.6320206]@,$[2.346319]@,$[2.5123754]@,$[2.4903496]@,$[822.83199]@
$[2.4047471]@,$[1.4000973]@,$[2.11688]@,$[1.1912651]@,$[333.32357]@
$[1.9141684]@,$[2.9867567]@,$[1.4825096]@,$[1.6781926]@,$[498.97928]@
$[2.1364081]@,$[2.4143996]@,$[3.0139468]@,$[1.2742351]@,$[939.09608]@
$[1.8661108]@,$[1.5754493]@,$[0.90455986]@,$[2.0316086]@,$[151.2392]@
$[1.745116]@,$[3.1457594]@,$[1.1865607]@,$[3.179536]@,$[636.31149]@
$[1.138313]@,$[2.4091331]@,$[1.8556163]@,$[1.525386]@,$[211.76693]@

```

CE18B037

```

alpha = 0.11648056
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X2 X2 X2 X2 + beta_2 X2 X1 X1 X3 X4 + beta_3 X3 X4 X1 X2 X1
+ beta_4 X4 X3 X3 X3 X2
PARAMATER FOR POPULATION RANGE: beta_1
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@,$[2.9177938]@
$[0.072616899]@,$[0.15982682]@,$[0.10051412]@,$[0.1917831]@,$[1.8762889]@
$[0.17249389]@,$[0.35248626]@,$[0.13564006]@,$[0.20137748]@,$[2.8864965]@
$[0.39009591]@,$[0.28606086]@,$[0.37947669]@,$[0.50380617]@,$[0.33197729]@
$[0.5382835]@,$[0.60260579]@,$[0.74696784]@,$[0.32698275]@,$[2.232445]@

```

BT2022_qiv_22_alldata

$\$[0.48270092]@, \$[0.4006882]@, \$[0.96784462]@, \$[0.52548453]@, \$[2.1140073]@$
 $\$[0.89100622]@, \$[1.0839765]@, \$[0.32708368]@, \$[0.48062938]@, \$[8.3836682]@$
 $\$[0.93514928]@, \$[1.2435985]@, \$[1.0735174]@, \$[1.3272802]@, \$[28.525901]@$
 $\$[0.41304128]@, \$[0.58298067]@, \$[0.9590897]@, \$[1.4238208]@, \$[4.3290367]@$
 $\$[1.6204951]@, \$[1.374489]@, \$[0.45398917]@, \$[1.5710076]@, \$[47.269075]@$
 $\$[1.3955805]@, \$[0.60119544]@, \$[1.5450403]@, \$[1.1900101]@, \$[21.873597]@$
 $\$[2.06112]@, \$[1.9067237]@, \$[0.86085382]@, \$[1.5623107]@, \$[211.18172]@$
 $\$[1.7786417]@, \$[1.4939642]@, \$[1.3612738]@, \$[2.3135087]@, \$[157.95664]@$
 $\$[1.8018014]@, \$[1.1561283]@, \$[1.993258]@, \$[0.99115401]@, \$[86.346611]@$
 $\$[1.5132467]@, \$[1.969821]@, \$[1.0307714]@, \$[1.9234968]@, \$[184.44542]@$
 $\$[2.0300097]@, \$[2.2927779]@, \$[2.4589193]@, \$[0.98644569]@, \$[518.99885]@$
 $\$[2.2475481]@, \$[1.855741]@, \$[1.4311521]@, \$[2.2140148]@, \$[343.81918]@$
 $\$[2.5193693]@, \$[2.1321898]@, \$[1.1886736]@, \$[1.3590714]@, \$[411.78805]@$
 $\$[2.1170494]@, \$[1.0769642]@, \$[1.3385302]@, \$[2.0742552]@, \$[108.44072]@$
 $\$[1.3067725]@, \$[2.4730205]@, \$[1.4294995]@, \$[1.1165078]@, \$[316.27783]@$

CE18B038

alpha = 0.18823975
 MLR FIT FUNCTION
 $Y = \beta_0 + \beta_1 X_1 X_4 X_3 X_1 + \beta_2 X_2 X_4 X_4 X_2 X_3 + \beta_3 X_3 X_3 X_2 X_2 X_4$
 $+ \beta_4 X_4 X_2 X_3 X_2 X_4$
 PARAMATER FOR POPULATION RANGE: beta_2
 DATA COLUMNS X1 X2 X3 X4 Y
 $\$[0]@, \$[0]@, \$[0]@, \$[0]@, \$[-3.1893804]@$
 $\$[0.089600381]@, \$[0.19948021]@, \$[0.10695344]@, \$[0.14079869]@, \$[-2.0554611]@$
 $\$[0.19876563]@, \$[0.301545]@, \$[0.37928696]@, \$[0.24163799]@, \$[-3.1858772]@$
 $\$[0.20038058]@, \$[0.5337462]@, \$[0.49815215]@, \$[0.26936827]@, \$[-0.97402225]@$
 $\$[0.29167461]@, \$[0.22676224]@, \$[0.38403301]@, \$[0.45209382]@, \$[-0.97086515]@$
 $\$[0.92591511]@, \$[0.33810413]@, \$[0.97670188]@, \$[0.28885508]@, \$[-2.7255764]@$
 $\$[0.40634021]@, \$[0.55823307]@, \$[0.85774768]@, \$[0.36091481]@, \$[-2.1525312]@$
 $\$[0.88989412]@, \$[0.77874192]@, \$[1.1004588]@, \$[0.76426601]@, \$[4.0206613]@$
 $\$[0.9460214]@, \$[0.52773386]@, \$[1.1999447]@, \$[0.77944063]@, \$[4.0065408]@$
 $\$[0.93401322]@, \$[1.7919226]@, \$[1.7278851]@, \$[0.58355953]@, \$[16.763276]@$
 $\$[1.2166945]@, \$[0.81472705]@, \$[1.0119235]@, \$[1.1114006]@, \$[12.79149]@$
 $\$[0.73188981]@, \$[0.63503894]@, \$[1.9543286]@, \$[0.95987477]@, \$[4.818159]@$
 $\$[1.337231]@, \$[1.7143566]@, \$[2.3301218]@, \$[0.97754196]@, \$[70.348281]@$
 $\$[2.0388003]@, \$[1.4007178]@, \$[1.2798585]@, \$[2.2474012]@, \$[178.76171]@$
 $\$[2.3668888]@, \$[2.2042774]@, \$[1.3523881]@, \$[1.8488701]@, \$[270.31888]@$
 $\$[0.95263928]@, \$[1.7945804]@, \$[2.4545334]@, \$[0.82530171]@, \$[49.549521]@$
 $\$[1.6749672]@, \$[2.5185168]@, \$[3.143731]@, \$[3.058236]@, \$[1071.1993]@$
 $\$[1.9201092]@, \$[2.9900289]@, \$[1.6313847]@, \$[1.7768405]@, \$[305.05237]@$
 $\$[3.2708114]@, \$[1.3583458]@, \$[1.6335627]@, \$[1.7287287]@, \$[584.25276]@$
 $\$[3.1067131]@, \$[1.3156097]@, \$[2.516294]@, \$[1.6209358]@, \$[737.39128]@$

CE18B039

alpha = 0.14536578

BT2022_qiv_22_alldata

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X3 X2 X2 X1 + beta_2 X2 X4 X1 X3 X2 + beta_3 X3 X3 X1 X2 X4
+ beta_4 X4 X2 X4 X1 X1

PARAMATER FOR POPULATION RANGE: beta_3

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[1.1972545]@
\$[0.078520212]@,\$[0.068494823]@,\$[0.05804418]@,\$[0.055147341]@,\$[0.41184964]@
\$[0.25069748]@,\$[0.24258426]@,\$[0.33687696]@,\$[0.22701035]@,\$[0.09104531]@
\$[0.58313649]@,\$[0.22472195]@,\$[0.31097855]@,\$[0.33900991]@,\$[-0.67716507]@
\$[0.49244531]@,\$[0.74791068]@,\$[0.25281064]@,\$[0.67238758]@,\$[-1.9274527]@
\$[0.61914172]@,\$[0.55836547]@,\$[0.56829476]@,\$[0.96575902]@,\$[1.4113669]@
\$[0.44903756]@,\$[0.65068048]@,\$[0.95387577]@,\$[1.122212]@,\$[1.7751457]@
\$[1.1629951]@,\$[0.55981057]@,\$[0.57310093]@,\$[1.066836]@,\$[3.4291955]@
\$[0.77398911]@,\$[1.4876997]@,\$[0.6816799]@,\$[0.49570001]@,\$[1.6843989]@
\$[0.93635482]@,\$[1.5677979]@,\$[0.58022097]@,\$[1.0227556]@,\$[9.521722]@
\$[1.7462188]@,\$[0.82701531]@,\$[0.72194839]@,\$[1.5280204]@,\$[36.741554]@
\$[1.5495832]@,\$[2.1666943]@,\$[0.8128254]@,\$[0.61549495]@,\$[10.753933]@
\$[2.1354966]@,\$[2.3441341]@,\$[1.409087]@,\$[1.1225115]@,\$[104.26224]@
\$[2.3273096]@,\$[1.8901648]@,\$[1.9836478]@,\$[1.083482]@,\$[116.48813]@
\$[2.4008355]@,\$[0.80483093]@,\$[1.7651818]@,\$[0.73992229]@,\$[27.109567]@
\$[2.4686541]@,\$[2.7863193]@,\$[1.9792808]@,\$[2.0053616]@,\$[567.25821]@
\$[1.2085947]@,\$[2.3243461]@,\$[1.7469021]@,\$[0.87372437]@,\$[38.039358]@
\$[1.3813648]@,\$[3.0498778]@,\$[2.4544667]@,\$[2.7596811]@,\$[523.76686]@
\$[1.7383291]@,\$[2.3723726]@,\$[1.7237267]@,\$[3.5324551]@,\$[684.80165]@
\$[1.9807675]@,\$[3.0143235]@,\$[3.095576]@,\$[1.1928859]@,\$[291.41575]@

CE18B041

alpha = 0.12701825

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X1 X1 X3 X2 + beta_2 X2 X2 X3 X1 X1 + beta_3 X3 X3 X2 X1 X4
+ beta_4 X4 X2 X1 X4 X4

PARAMATER FOR POPULATION RANGE: beta_0

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[2.0359334]@
\$[0.11237327]@,\$[0.081342071]@,\$[0.078850023]@,\$[0.11772351]@,\$[1.0972249]@
\$[0.10752008]@,\$[0.23457567]@,\$[0.27253185]@,\$[0.10820954]@,\$[1.5430436]@
\$[0.31696162]@,\$[0.38240813]@,\$[0.56717844]@,\$[0.4040365]@,\$[0.658277]@
\$[0.45544413]@,\$[0.75821083]@,\$[0.20546839]@,\$[0.65594336]@,\$[1.1044608]@
\$[0.57195811]@,\$[0.73443167]@,\$[0.55483997]@,\$[0.89980788]@,\$[2.7662767]@
\$[0.41453868]@,\$[0.3873524]@,\$[0.63497428]@,\$[0.82319541]@,\$[0.0018397624]@
\$[1.1237999]@,\$[0.46916586]@,\$[1.3704295]@,\$[1.214086]@,\$[2.8301288]@
\$[0.62761344]@,\$[1.3590263]@,\$[1.5330045]@,\$[0.42434169]@,\$[1.1651543]@
\$[0.8489576]@,\$[1.2732854]@,\$[0.77155778]@,\$[0.7363388]@,\$[3.4778286]@
\$[1.0203308]@,\$[1.5486957]@,\$[0.63736442]@,\$[0.51153227]@,\$[6.2370771]@
\$[0.75541577]@,\$[1.0007478]@,\$[1.8431711]@,\$[0.63249556]@,\$[0.86951254]@
\$[1.3557303]@,\$[2.1164053]@,\$[1.9760802]@,\$[1.5784372]@,\$[44.968677]@
\$[1.9054572]@,\$[1.7080848]@,\$[1.6160357]@,\$[1.6403479]@,\$[61.016271]@

BT2022_qiv_22_alldata
\$[1.9830514]@,\$[2.735438]@,\$[1.0704697]@,\$[2.6256899]@,\$[419.26608]@
\$[2.2163921]@,\$[1.8849235]@,\$[1.124621]@,\$[1.0751556]@,\$[48.735707]@
\$[2.9819817]@,\$[1.851643]@,\$[1.5996858]@,\$[2.2656107]@,\$[267.20753]@
\$[1.2710384]@,\$[2.5170874]@,\$[2.4157354]@,\$[1.0690877]@,\$[31.425635]@
\$[3.3411829]@,\$[3.558571]@,\$[2.4717551]@,\$[2.6157111]@,\$[1183.4539]@
\$[2.1161554]@,\$[2.9539468]@,\$[0.99204088]@,\$[3.7879572]@,\$[1356.2375]@

CE18B043

alpha = 0.055896131

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X3 X3 X2 X1 + beta_2 X2 X4 X1 X2 X1 + beta_3 X3 X4 X4 X3 X2
+ beta_4 X4 X4 X4 X2 X2

PARAMATER FOR POPULATION RANGE: beta_3

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[1.4803427]@
\$[0.17623836]@,\$[0.12765289]@,\$[0.1523569]@,\$[0.16052704]@,\$[1.1801589]@
\$[0.15219457]@,\$[0.16022086]@,\$[0.15482255]@,\$[0.21721333]@,\$[1.5177604]@
\$[0.55846472]@,\$[0.16553143]@,\$[0.17546904]@,\$[0.24263103]@,\$[0.76149918]@
\$[0.78898109]@,\$[0.35543707]@,\$[0.53599449]@,\$[0.62301789]@,\$[1.1700136]@
\$[0.75021102]@,\$[0.94868886]@,\$[0.79731131]@,\$[0.59627985]@,\$[3.7557301]@
\$[1.1796376]@,\$[0.7872594]@,\$[0.79732946]@,\$[0.6475412]@,\$[5.8874988]@
\$[0.95192496]@,\$[0.46108266]@,\$[1.0231987]@,\$[0.47507795]@,\$[2.6010844]@
\$[0.62408046]@,\$[0.5122095]@,\$[0.42776644]@,\$[1.5221803]@,\$[0.52987937]@
\$[0.55924914]@,\$[0.97049574]@,\$[0.69798404]@,\$[0.8127046]@,\$[1.2001996]@
\$[1.9720689]@,\$[0.74326328]@,\$[1.5694004]@,\$[0.73459837]@,\$[19.567127]@
\$[1.7338118]@,\$[0.8949145]@,\$[1.8217321]@,\$[1.5254162]@,\$[27.902191]@
\$[0.82519909]@,\$[2.068398]@,\$[2.1122503]@,\$[2.3868885]@,\$[-99.905851]@
\$[2.4680029]@,\$[1.6956143]@,\$[1.2439988]@,\$[1.4852366]@,\$[122.43574]@
\$[1.0775965]@,\$[0.90938443]@,\$[1.2582086]@,\$[2.2832983]@,\$[-11.966991]@
\$[0.76911636]@,\$[2.0189324]@,\$[0.89170144]@,\$[2.5864731]@,\$[-187.9888]@
\$[3.1698882]@,\$[1.7706917]@,\$[1.451645]@,\$[1.0943202]@,\$[207.42863]@
\$[1.3683425]@,\$[2.3516809]@,\$[3.0574401]@,\$[1.9411717]@,\$[99.858481]@
\$[1.7053076]@,\$[3.4879279]@,\$[2.0076758]@,\$[1.3301451]@,\$[210.20661]@
\$[2.1959786]@,\$[3.0548139]@,\$[1.9544129]@,\$[3.6698417]@,\$[-514.8758]@

CE18B044

alpha = 0.050498491

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X1 X4 X4 X2 + beta_2 X2 X3 X2 X2 X4 + beta_3 X3 X3 X2 X2 X3
+ beta_4 X4 X4 X4 X3 X2

PARAMATER FOR POPULATION RANGE: beta_3

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[1.9612269]@
\$[0.19281962]@,\$[0.14378853]@,\$[0.057686341]@,\$[0.18482451]@,\$[1.1871775]@
\$[0.16132927]@,\$[0.28805789]@,\$[0.23003115]@,\$[0.15851473]@,\$[-0.9102629]@
\$[0.29582804]@,\$[0.45834107]@,\$[0.18550024]@,\$[0.52170033]@,\$[1.4166645]@

BT2022_qiv_22_alldata

\$[0.68423816]@,\$[0.77164739]@,\$[0.62760723]@,\$[0.79669345]@,\$[1.2119716]@
 \$[0.53052464]@,\$[0.64381744]@,\$[0.50862982]@,\$[0.84724605]@,\$[1.6828631]@
 \$[1.010129]@,\$[1.1983718]@,\$[0.49658064]@,\$[0.52175082]@,\$[-2.5760691]@
 \$[0.80546089]@,\$[0.38251818]@,\$[1.3435627]@,\$[0.57765186]@,\$[1.6347697]@
 \$[1.4690501]@,\$[0.64121187]@,\$[0.8190822]@,\$[0.70898576]@,\$[-1.1053455]@
 \$[0.71990132]@,\$[0.9495927]@,\$[0.97730551]@,\$[1.1297425]@,\$[0.27145981]@
 \$[1.2511584]@,\$[0.91661528]@,\$[0.7815466]@,\$[1.1712422]@,\$[-3.3421876]@
 \$[2.0483686]@,\$[1.7146428]@,\$[0.86434064]@,\$[0.88816487]@,\$[-19.429749]@
 \$[0.69965689]@,\$[1.3154334]@,\$[0.84298627]@,\$[1.8623228]@,\$[5.3453622]@
 \$[1.6593052]@,\$[1.9701096]@,\$[2.513745]@,\$[1.7721371]@,\$[-177.93509]@
 \$[2.0469789]@,\$[1.6853012]@,\$[2.7935849]@,\$[2.6936742]@,\$[-61.436433]@
 \$[1.2905939]@,\$[2.2291415]@,\$[1.103334]@,\$[0.90537379]@,\$[-41.786292]@
 \$[1.6206969]@,\$[2.8139075]@,\$[0.93754893]@,\$[2.2583431]@,\$[-106.75037]@
 \$[2.8843378]@,\$[1.6530493]@,\$[2.9654753]@,\$[3.2765537]@,\$[-39.99687]@
 \$[1.018776]@,\$[2.6729593]@,\$[2.5001404]@,\$[3.1228315]@,\$[-99.772731]@
 \$[3.5360911]@,\$[1.4669674]@,\$[3.6820931]@,\$[2.1074156]@,\$[-310.17403]@

CE18B046

```

alpha = 0.12371294
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X1 X1 X2 X1 + beta_2 X2 X1 X3 X3 X1 + beta_3 X3 X2 X2 X4 X1
+ beta_4 X4 X4 X1 X4 X4
PARAMATER FOR POPULATION RANGE: beta_1
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@,$[-3.1406938]@
$[0.17992964]@,$[0.070416753]@,$[0.13699505]@,$[0.054900039]@,$[-0.93548376]@
$[0.23059144]@,$[0.2021945]@,$[0.31819688]@,$[0.31655692]@,$[-1.2700549]@
$[0.30234108]@,$[0.37055847]@,$[0.42133081]@,$[0.56525443]@,$[-4.2167898]@
$[0.38034095]@,$[0.30834353]@,$[0.64107123]@,$[0.20980856]@,$[-2.8748308]@
$[0.57076293]@,$[0.65992513]@,$[0.64064405]@,$[0.26245189]@,$[-2.4000844]@
$[1.0253167]@,$[1.0719864]@,$[0.89964837]@,$[0.61824384]@,$[10.452432]@
$[0.37157628]@,$[1.3769522]@,$[0.47210916]@,$[1.1766123]@,$[-2.3364182]@
$[1.4788722]@,$[1.0051695]@,$[0.71216147]@,$[0.72075398]@,$[22.547536]@
$[0.59496666]@,$[1.0196172]@,$[1.266945]@,$[1.7755272]@,$[-5.4001084]@
$[1.4802469]@,$[1.2765606]@,$[1.1171663]@,$[0.72110779]@,$[49.753809]@
$[1.8402215]@,$[2.1264084]@,$[1.700746]@,$[1.3257416]@,$[289.7649]@
$[1.0393011]@,$[1.67851]@,$[1.2260726]@,$[1.9550394]@,$[19.041315]@
$[2.1283677]@,$[2.1921189]@,$[1.0535451]@,$[0.91421362]@,$[263.72959]@
$[0.8977281]@,$[1.108514]@,$[1.7882805]@,$[2.3718108]@,$[-30.717824]@
$[2.440291]@,$[1.3081487]@,$[0.93165655]@,$[2.2456074]@,$[79.824539]@
$[0.9560593]@,$[2.3360295]@,$[1.7244812]@,$[2.6751979]@,$[47.52417]@
$[2.2984469]@,$[2.1208749]@,$[2.5989973]@,$[1.6266259]@,$[836.62057]@
$[2.3682542]@,$[3.1088184]@,$[3.0389722]@,$[1.2231515]@,$[1718.1995]@
$[2.4592103]@,$[3.7274421]@,$[3.0446037]@,$[3.5618505]@,$[2685.8586]@

```

CE18B047

BT2022_qiv_22_alldata

```

alpha = 0.13792092
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X4 X2 X1 X3 + beta_2 X2 X2 X1 X2 X1 + beta_3 X3 X3 X3 X3 X1
+ beta_4 X4 X4 X3 X4 X2
PARAMATER FOR POPULATION RANGE: beta_3
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@,$[-1.1082717]@
$[0.14700756]@,$[0.19273382]@,$[0.075325168]@,$[0.061146497]@,$[1.1640628]@
$[0.161756]@,$[0.11939356]@,$[0.13187885]@,$[0.24856466]@,$[0.67185446]@
$[0.18873863]@,$[0.36509336]@,$[0.47654875]@,$[0.34261399]@,$[0.43321378]@
$[0.42656821]@,$[0.33558804]@,$[0.65829888]@,$[0.58938548]@,$[0.4453018]@
$[0.68076917]@,$[0.84645522]@,$[0.84334509]@,$[0.47203528]@,$[2.0605289]@
$[0.73307501]@,$[1.0205483]@,$[0.45703821]@,$[0.37642853]@,$[4.783249]@
$[0.38190392]@,$[1.3064742]@,$[1.0757619]@,$[0.55503763]@,$[1.8414067]@
$[0.67709202]@,$[1.0879341]@,$[1.3452692]@,$[0.84590139]@,$[6.69081]@
$[0.73220971]@,$[1.7044626]@,$[1.6365205]@,$[0.71315167]@,$[20.113157]@
$[1.1940989]@,$[1.8202827]@,$[0.50153188]@,$[0.75596308]@,$[55.22634]@
$[1.885798]@,$[1.2469513]@,$[1.9673922]@,$[1.0984365]@,$[71.209402]@
$[1.6825613]@,$[0.84758552]@,$[0.74540908]@,$[1.0892594]@,$[12.8781]@
$[0.86424452]@,$[0.70034358]@,$[0.83053314]@,$[0.8883106]@,$[2.8208209]@
$[1.2783593]@,$[2.4924639]@,$[2.6672357]@,$[1.6396006]@,$[236.18565]@
$[0.8674692]@,$[1.3552424]@,$[1.6177338]@,$[1.8917293]@,$[35.590632]@
$[0.98632486]@,$[1.7564234]@,$[1.7504101]@,$[0.87015123]@,$[42.372354]@
$[1.8828394]@,$[1.6958368]@,$[2.9105038]@,$[0.88557666]@,$[167.57633]@
$[2.0058239]@,$[1.1940583]@,$[2.0104916]@,$[1.3894491]@,$[81.015421]@
$[3.4462573]@,$[3.6889653]@,$[2.0846742]@,$[2.9412077]@,$[4377.4074]@

```

CE18B053

```

alpha = 0.068119148
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X3 X4 X2 X3 + beta_2 X2 X4 X2 X1 X4 + beta_3 X3 X1 X1 X4 X3
+ beta_4 X4 X2 X4 X2 X1
PARAMATER FOR POPULATION RANGE: beta_1
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@,$[5.2190992]@
$[0.14954717]@,$[0.092913405]@,$[0.16603504]@,$[0.13192744]@,$[5.0005915]@
$[0.31401974]@,$[0.27050927]@,$[0.24611732]@,$[0.20434958]@,$[5.6236809]@
$[0.20575424]@,$[0.45311994]@,$[0.41638142]@,$[0.17645054]@,$[6.3061977]@
$[0.36215272]@,$[0.27500706]@,$[0.23231533]@,$[0.66020908]@,$[5.97441]@
$[0.99640137]@,$[0.96031139]@,$[0.70569926]@,$[0.3056226]@,$[7.3020682]@
$[1.1807058]@,$[0.97555292]@,$[0.38038974]@,$[1.0318426]@,$[11.520132]@
$[0.47076717]@,$[0.8351187]@,$[0.68247681]@,$[1.0716774]@,$[8.8479126]@
$[0.93933292]@,$[1.1566086]@,$[1.3464924]@,$[0.65883905]@,$[14.427809]@
$[1.4273269]@,$[1.619702]@,$[0.74769203]@,$[1.2333828]@,$[47.393688]@
$[1.4902994]@,$[1.1526414]@,$[1.572303]@,$[0.60968069]@,$[20.516928]@
$[1.3316779]@,$[1.5033268]@,$[0.85889424]@,$[2.0827391]@,$[100.48854]@
$[1.6974429]@,$[2.083121]@,$[0.9448713]@,$[1.2811438]@,$[100.28403]@

```

```

BT2022_qiv_22_alldata
$[0.80580493]@,$[0.97443074]@,$[2.2162221]@,$[1.7972339]@,$[51.242089]@
$[1.4920488]@,$[1.5735719]@,$[1.0699817]@,$[1.3126582]@,$[60.932687]@
$[2.5482451]@,$[2.5232174]@,$[2.9725151]@,$[2.4775568]@,$[1230.3952]@
$[1.8855031]@,$[0.96750412]@,$[1.2048469]@,$[2.5679424]@,$[103.57025]@
$[0.91149626]@,$[1.077316]@,$[3.0762085]@,$[2.3834829]@,$[139.0576]@
$[1.9558946]@,$[3.5564273]@,$[1.8778634]@,$[2.3319948]@,$[1122.2764]@
$[3.2439558]@,$[3.4760472]@,$[2.0272976]@,$[1.8892557]@,$[1269.7952]@

```

CE18B057

```

alpha = 0.092983362
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X2 X3 X2 X1 + beta_2 X2 X1 X1 X2 X2 + beta_3 X3 X2 X3 X1 X1
+ beta_4 X4 X2 X2 X1 X4
PARAMATER FOR POPULATION RANGE: beta_1
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@,$[0.80445046]@
$[0.054501589]@,$[0.17475251]@,$[0.09263465]@,$[0.1002354]@,$[2.5070267]@
$[0.30624779]@,$[0.17544315]@,$[0.23862372]@,$[0.10574304]@,$[1.2610695]@
$[0.21893506]@,$[0.58208643]@,$[0.55426652]@,$[0.31067969]@,$[4.3901279]@
$[0.32058052]@,$[0.66315932]@,$[0.41921449]@,$[0.59805744]@,$[2.3517051]@
$[0.9790054]@,$[0.61734524]@,$[0.72970219]@,$[0.9689862]@,$[3.6751243]@
$[0.42697805]@,$[0.53314871]@,$[0.32500124]@,$[0.45995992]@,$[1.7028426]@
$[1.1287138]@,$[1.3482737]@,$[1.3734983]@,$[0.45379509]@,$[26.448792]@
$[1.2371786]@,$[0.83680768]@,$[1.0487854]@,$[0.91505617]@,$[7.1695357]@
$[0.81643855]@,$[1.128205]@,$[1.4944352]@,$[0.7588068]@,$[8.5270389]@
$[1.5895826]@,$[1.9970454]@,$[1.57514]@,$[1.4020957]@,$[101.99474]@
$[0.84492742]@,$[1.9534369]@,$[1.071042]@,$[0.7047826]@,$[28.432877]@
$[1.9872057]@,$[1.7595744]@,$[2.1071097]@,$[0.91317032]@,$[182.00626]@
$[1.9325711]@,$[1.4731368]@,$[0.76596963]@,$[1.9524063]@,$[17.375598]@
$[1.2789937]@,$[0.71907937]@,$[1.0388813]@,$[1.6525607]@,$[2.2314824]@
$[2.7645757]@,$[2.6331933]@,$[2.3041132]@,$[2.3528938]@,$[671.39625]@
$[1.3326127]@,$[2.6084596]@,$[1.6830582]@,$[1.5810699]@,$[127.68378]@
$[3.3929542]@,$[1.3661658]@,$[1.5204187]@,$[1.8069941]@,$[182.32813]@
$[1.9502009]@,$[2.1522638]@,$[2.0770849]@,$[1.369519]@,$[244.64917]@
$[1.424935]@,$[1.7337055]@,$[2.9449022]@,$[1.6229795]@,$[95.491403]@

```

CE18B058

```

alpha = 0.067154144
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X2 X4 X1 X1 + beta_2 X2 X4 X2 X4 X1 + beta_3 X3 X3 X2 X3 X2
+ beta_4 X4 X1 X3 X1 X1
PARAMATER FOR POPULATION RANGE: beta_2
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@,$[-1.3888148]@
$[0.19764084]@,$[0.055204958]@,$[0.091870414]@,$[0.15803449]@,$[0.43318558]@
$[0.26862966]@,$[0.27379609]@,$[0.22766329]@,$[0.12972616]@,$[2.2023807]@

```

BT2022_qiv_22_alldata

$\$[0.3973399]@, \$[0.21014259]@, \$[0.32092833]@, \$[0.244575]@, \$[1.08195]@$
 $\$[0.40914866]@, \$[0.36872007]@, \$[0.72991115]@, \$[0.20304804]@, \$[0.22038049]@$
 $\$[0.93295943]@, \$[0.35488213]@, \$[0.69095591]@, \$[0.89623485]@, \$[3.6318817]@$
 $\$[0.65167243]@, \$[0.6764073]@, \$[0.81137134]@, \$[0.75065663]@, \$[1.4686838]@$
 $\$[0.64422296]@, \$[1.3961055]@, \$[0.74222571]@, \$[1.0996132]@, \$[3.5762297]@$
 $\$[0.43022765]@, \$[1.4482857]@, \$[1.4452702]@, \$[0.67162604]@, \$[-2.0757774]@$
 $\$[0.87046313]@, \$[1.7774506]@, \$[0.50583463]@, \$[1.3143144]@, \$[12.897523]@$
 $\$[1.8428891]@, \$[1.1107557]@, \$[1.6128521]@, \$[1.7333858]@, \$[97.53162]@$
 $\$[1.2736327]@, \$[1.4414341]@, \$[0.83335175]@, \$[2.1823087]@, \$[41.431357]@$
 $\$[1.5342473]@, \$[1.8669124]@, \$[1.5142342]@, \$[1.8970819]@, \$[78.979795]@$
 $\$[0.78966798]@, \$[1.4069864]@, \$[1.3941829]@, \$[1.7007951]@, \$[11.743214]@$
 $\$[1.7761203]@, \$[1.6247801]@, \$[1.340815]@, \$[0.95301141]@, \$[38.872619]@$
 $\$[2.0661199]@, \$[2.6219391]@, \$[1.883918]@, \$[2.3236532]@, \$[298.4162]@$
 $\$[3.0176073]@, \$[0.96739453]@, \$[1.2307446]@, \$[1.1052706]@, \$[190.18749]@$
 $\$[2.7904157]@, \$[3.3910447]@, \$[2.1505525]@, \$[1.7805671]@, \$[492.29786]@$
 $\$[1.6874379]@, \$[3.0861267]@, \$[1.5880075]@, \$[3.2101836]@, \$[412.05573]@$
 $\$[2.4337297]@, \$[2.2144985]@, \$[3.0349353]@, \$[3.0686675]@, \$[769.79521]@$

CE18B059

alpha = 0.15425716
 MLR FIT FUNCTION
 $Y = \beta_0 + \beta_1 X_1 X_2 X_2 X_2 X_3 + \beta_2 X_2 X_1 X_4 X_3 X_4 + \beta_3 X_3 X_4 X_2 X_1 X_2 + \beta_4 X_4 X_4 X_3 X_1 X_4$
 PARAMATER FOR POPULATION RANGE: beta_4
 DATA COLUMNS X1 X2 X3 X4 Y
 $\$[0]@, \$[0]@, \$[0]@, \$[0]@, \$[3.8208257]@$
 $\$[0.16572411]@, \$[0.076458306]@, \$[0.12758525]@, \$[0.16070378]@, \$[2.4320801]@$
 $\$[0.36757083]@, \$[0.15739198]@, \$[0.1339477]@, \$[0.24364334]@, \$[3.7767604]@$
 $\$[0.38999069]@, \$[0.23771384]@, \$[0.4259562]@, \$[0.28893992]@, \$[5.1200156]@$
 $\$[0.62051426]@, \$[0.58170219]@, \$[0.66375831]@, \$[0.45296608]@, \$[3.2216764]@$
 $\$[0.81702742]@, \$[0.56582947]@, \$[0.69926458]@, \$[0.83742623]@, \$[5.8479012]@$
 $\$[0.33225041]@, \$[0.37300953]@, \$[1.0676449]@, \$[1.1377231]@, \$[8.0688151]@$
 $\$[0.65817919]@, \$[0.36515101]@, \$[0.58480864]@, \$[0.64366261]@, \$[3.9107594]@$
 $\$[1.1131883]@, \$[0.60813199]@, \$[1.4382128]@, \$[1.2412813]@, \$[21.29763]@$
 $\$[0.47385896]@, \$[1.759819]@, \$[0.90499416]@, \$[0.51961772]@, \$[14.131036]@$
 $\$[1.4374314]@, \$[1.0549882]@, \$[1.3410917]@, \$[1.0704726]@, \$[27.125272]@$
 $\$[1.9125513]@, \$[1.0040632]@, \$[1.3313366]@, \$[1.0448751]@, \$[33.906802]@$
 $\$[1.9082888]@, \$[1.4402823]@, \$[1.7699852]@, \$[0.93098574]@, \$[72.383372]@$
 $\$[1.6297262]@, \$[2.5248]@, \$[1.4584167]@, \$[1.0847965]@, \$[215.61754]@$
 $\$[0.77351434]@, \$[1.9518339]@, \$[2.7286064]@, \$[1.7011113]@, \$[148.69789]@$
 $\$[0.99058371]@, \$[1.9856595]@, \$[1.4888033]@, \$[1.5598089]@, \$[99.695857]@$
 $\$[2.7393403]@, \$[1.884685]@, \$[2.7475813]@, \$[1.375035]@, \$[392.19951]@$
 $\$[2.8078423]@, \$[3.2217518]@, \$[2.1752078]@, \$[2.5954579]@, \$[1740.489]@$
 $\$[3.1881707]@, \$[3.041403]@, \$[2.1549792]@, \$[3.3516237]@, \$[2526.2679]@$
 $\$[1.2063695]@, \$[2.6982893]@, \$[3.6223734]@, \$[2.1353928]@, \$[718.31751]@$

BT2022_qiv_22_alldata

CE18B060
alpha = 0.1886546
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X2 X4 X2 X4 + beta_2 X2 X1 X1 X4 X1 + beta_3 X3 X1 X1 X4 X4
+ beta_4 X4 X2 X4 X3 X4
PARAMATER FOR POPULATION RANGE: beta_0
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@[0.60136506]@
\$[0.14366245]@,\$[0.15383142]@,\$[0.14322778]@,\$[0.14041674]@,\$[-0.28086738]@
\$[0.30657066]@,\$[0.29734831]@,\$[0.15648328]@,\$[0.21142459]@,\$[2.1056732]@
\$[0.17715994]@,\$[0.16790483]@,\$[0.46128148]@,\$[0.27114632]@,\$[0.30881859]@
\$[0.23059896]@,\$[0.48549469]@,\$[0.78749187]@,\$[0.57282763]@,\$[1.7813357]@
\$[0.88098449]@,\$[0.78955073]@,\$[0.74090872]@,\$[0.54672267]@,\$[1.7239754]@
\$[0.95012993]@,\$[1.0203343]@,\$[0.46769234]@,\$[0.31568185]@,\$[1.2889197]@
\$[1.057365]@,\$[0.36362696]@,\$[0.77073151]@,\$[1.2053303]@,\$[-3.655033]@
\$[0.7127866]@,\$[0.84007256]@,\$[0.55540288]@,\$[0.69824953]@,\$[-1.1312832]@
\$[0.73340331]@,\$[0.8943408]@,\$[1.5069031]@,\$[0.89168516]@,\$[-3.9840317]@
\$[1.0412861]@,\$[1.4012565]@,\$[1.3898243]@,\$[0.59627793]@,\$[-0.072130999]@
\$[0.98898105]@,\$[1.9771139]@,\$[0.88693186]@,\$[1.4003538]@,\$[8.1684823]@
\$[1.6405921]@,\$[0.92177261]@,\$[0.67904361]@,\$[1.4675603]@,\$[-8.2632175]@
\$[0.92514426]@,\$[1.0584378]@,\$[0.80001635]@,\$[2.1791686]@,\$[-12.532799]@
\$[2.463971]@,\$[1.0084953]@,\$[0.9318793]@,\$[2.4591635]@,\$[-116.77156]@
\$[1.4072389]@,\$[1.6054622]@,\$[1.4454065]@,\$[1.0561515]@,\$[-4.6059985]@
\$[3.0950315]@,\$[2.5538126]@,\$[0.81967692]@,\$[2.326956]@,\$[182.64749]@
\$[0.85218795]@,\$[2.3834792]@,\$[2.8289377]@,\$[1.5552103]@,\$[-19.280516]@
\$[1.6169162]@,\$[2.6146645]@,\$[2.9497179]@,\$[1.3817824]@,\$[-28.644641]@
\$[3.6853351]@,\$[1.7882504]@,\$[2.4297656]@,\$[2.7323582]@,\$[-898.18599]@

CE18B063
alpha = 0.18913922
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X1 X1 X1 X3 + beta_2 X2 X4 X2 X1 X3 + beta_3 X3 X4 X4 X1 X2
+ beta_4 X4 X4 X4 X2 X1
PARAMATER FOR POPULATION RANGE: beta_1
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@[3.9622451]@
\$[0.052054586]@,\$[0.071255727]@,\$[0.17153794]@,\$[0.19713218]@,\$[3.0224687]@
\$[0.31897262]@,\$[0.26350049]@,\$[0.35126158]@,\$[0.32569376]@,\$[4.04772]@
\$[0.55643506]@,\$[0.22861255]@,\$[0.47219348]@,\$[0.43424728]@,\$[4.2832087]@
\$[0.52295308]@,\$[0.62765098]@,\$[0.32253467]@,\$[0.27352815]@,\$[2.9336424]@
\$[0.75855231]@,\$[0.26570656]@,\$[0.93055552]@,\$[0.40064317]@,\$[5.9197839]@
\$[0.72985212]@,\$[0.52369866]@,\$[0.85031601]@,\$[0.71705932]@,\$[6.6919478]@
\$[0.63018439]@,\$[0.80695327]@,\$[1.2013626]@,\$[0.97304217]@,\$[8.2273312]@
\$[0.71438276]@,\$[1.0349204]@,\$[1.0559746]@,\$[0.58264066]@,\$[4.5056883]@
\$[0.88584699]@,\$[1.0918221]@,\$[1.1651464]@,\$[1.4873795]@,\$[17.469235]@
\$[0.65008401]@,\$[1.5014213]@,\$[1.2852185]@,\$[1.6761961]@,\$[22.965742]@
\$[1.2438416]@,\$[2.1167442]@,\$[0.59576964]@,\$[0.86246907]@,\$[21.165218]@

BT2022_qiv_22_alldata

\$[2.1523259]@,\$[0.61303963]@,\$[1.7102291]@,\$[0.90364293]@,\$[101.48642]@
 \$[1.453395]@,\$[1.9184338]@,\$[2.4102847]@,\$[2.4356328]@,\$[216.27523]@
 \$[1.0333361]@,\$[2.6371474]@,\$[1.0981596]@,\$[2.6259207]@,\$[155.65222]@
 \$[2.8868576]@,\$[2.4714763]@,\$[0.96049422]@,\$[1.787522]@,\$[335.91867]@
 \$[1.8718852]@,\$[1.8456977]@,\$[2.3026054]@,\$[1.6680881]@,\$[190.04989]@
 \$[1.3448328]@,\$[2.5494862]@,\$[2.3338499]@,\$[0.90784336]@,\$[94.462255]@
 \$[3.2262996]@,\$[2.3615169]@,\$[3.0253987]@,\$[2.8962104]@,\$[1715.1244]@
 \$[2.8717986]@,\$[1.4383885]@,\$[2.1315458]@,\$[1.1768667]@,\$[427.2094]@

CE18B103

alpha = 0.18679761
 MLR FIT FUNCTION
 Y = beta_0 + beta_1 X1 X2 X4 X1 X1 + beta_2 X2 X2 X1 X1 X2 + beta_3 X3 X3 X4 X2 X4
 + beta_4 X4 X3 X1 X4 X3
 PARAMATER FOR POPULATION RANGE: beta_2
 DATA COLUMNS X1 X2 X3 X4 Y
 \$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[4.7375271]@
 \$[0.14166557]@,\$[0.16566412]@,\$[0.12114337]@,\$[0.10965436]@,\$[4.1802987]@
 \$[0.11714705]@,\$[0.34294442]@,\$[0.1051564]@,\$[0.14712407]@,\$[3.2908011]@
 \$[0.20730824]@,\$[0.29101279]@,\$[0.25901601]@,\$[0.37607926]@,\$[3.4350808]@
 \$[0.73892485]@,\$[0.51982503]@,\$[0.76788002]@,\$[0.34304248]@,\$[4.6784312]@
 \$[0.42228397]@,\$[0.33931973]@,\$[0.26111643]@,\$[0.44291223]@,\$[3.241494]@
 \$[0.30256264]@,\$[0.92449692]@,\$[0.74493325]@,\$[0.61815935]@,\$[4.2620404]@
 \$[0.87440256]@,\$[1.2160155]@,\$[1.1689158]@,\$[0.40629438]@,\$[7.1888564]@
 \$[1.2388232]@,\$[0.42935506]@,\$[1.566379]@,\$[1.0522378]@,\$[8.3573111]@
 \$[0.949783]@,\$[0.75152966]@,\$[1.498676]@,\$[0.67911822]@,\$[8.4148972]@
 \$[1.6450861]@,\$[1.2975702]@,\$[1.6715343]@,\$[1.5714152]@,\$[69.655953]@
 \$[1.2494117]@,\$[1.24243]@,\$[2.072907]@,\$[1.84393]@,\$[95.670113]@
 \$[0.96948858]@,\$[2.1744126]@,\$[1.2862902]@,\$[2.1176903]@,\$[93.175734]@
 \$[1.0263489]@,\$[0.77618246]@,\$[2.0698172]@,\$[2.4651584]@,\$[87.616524]@
 \$[2.574895]@,\$[2.7199861]@,\$[1.572999]@,\$[1.088111]@,\$[29.920855]@
 \$[1.0530821]@,\$[1.4938485]@,\$[2.0879007]@,\$[0.83379819]@,\$[24.956658]@
 \$[1.1318332]@,\$[1.7429226]@,\$[2.7698006]@,\$[1.506654]@,\$[157.6393]@
 \$[1.484446]@,\$[2.3840976]@,\$[2.2334469]@,\$[1.1963154]@,\$[75.885372]@
 \$[2.8300188]@,\$[3.3505357]@,\$[2.7350377]@,\$[1.9434074]@,\$[575.26741]@
 \$[2.3707935]@,\$[2.3229444]@,\$[1.5699366]@,\$[1.3832826]@,\$[120.65581]@

CE18B104

alpha = 0.056105543
 MLR FIT FUNCTION
 Y = beta_0 + beta_1 X1 X2 X2 X1 X4 + beta_2 X2 X2 X2 X4 X4 + beta_3 X3 X4 X1 X1 X1
 + beta_4 X4 X4 X3 X2 X1
 PARAMATER FOR POPULATION RANGE: beta_0
 DATA COLUMNS X1 X2 X3 X4 Y
 \$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[-2.9812586]@
 \$[0.094483301]@,\$[0.055122713]@,\$[0.050625096]@,\$[0.16621659]@,\$[-3.0050714]@

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BT2022_qiv_22_alldata
$[0.14624465]@,$[0.39498327]@,$[0.17817212]@,$[0.19026423]@,$[-3.8353788]@
$[0.50340725]@,$[0.33347364]@,$[0.33248293]@,$[0.55483667]@,$[-1.2721324]@
$[0.4409353]@,$[0.42642208]@,$[0.42952305]@,$[0.45446923]@,$[-2.6258045]@
$[0.29322063]@,$[0.36966142]@,$[0.77740172]@,$[0.68720042]@,$[-3.8254676]@
$[0.35434111]@,$[0.66274667]@,$[0.73674884]@,$[0.6289552]@,$[-1.8794576]@
$[0.90893422]@,$[0.87674745]@,$[0.64160739]@,$[0.89321755]@,$[4.2448525]@
$[0.75808945]@,$[0.91274438]@,$[0.8021285]@,$[0.95175485]@,$[5.3847948]@
$[0.77094955]@,$[0.72729269]@,$[0.46496672]@,$[1.2502197]@,$[4.9571597]@
$[1.6580323]@,$[1.5672589]@,$[0.64945877]@,$[1.2746271]@,$[79.372924]@
$[1.765955]@,$[1.1704561]@,$[0.85899972]@,$[1.983509]@,$[132.48982]@
$[1.1595329]@,$[0.69270462]@,$[1.1483276]@,$[0.94371796]@,$[13.134798]@
$[2.0645228]@,$[2.0518299]@,$[2.0193905]@,$[1.714471]@,$[480.98771]@
$[1.2552871]@,$[2.0332399]@,$[2.062482]@,$[1.1019467]@,$[116.61306]@
$[0.97537273]@,$[1.1994929]@,$[2.0451807]@,$[1.6450726]@,$[74.17565]@
$[2.5398089]@,$[1.2492152]@,$[1.9420095]@,$[1.5087315]@,$[401.86338]@
$[2.5137446]@,$[2.8038314]@,$[2.4485659]@,$[2.98094]@,$[2616.8661]@
$[2.6215022]@,$[2.971073]@,$[1.8948826]@,$[2.6240669]@,$[2171.4442]@
$[1.0714792]@,$[1.3392609]@,$[1.0626621]@,$[1.0861296]@,$[31.7448]@

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CE18B106

alpha = 0.18777559

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X2 X4 X3 X3 + beta_2 X2 X2 X4 X1 X2 + beta_3 X3 X2 X3 X3 X3
+ beta_4 X4 X4 X2 X4 X1

PARAMATER FOR POPULATION RANGE: beta_0

DATA COLUMNS X1 X2 X3 X4 Y

```

$[0]@,$[0]@,$[0]@,$[0]@,$[5.3315449]@
$[0.14214561]@,$[0.18364426]@,$[0.1573209]@,$[0.1207177]@,$[7.4480957]@
$[0.18673058]@,$[0.18781219]@,$[0.27982096]@,$[0.19747309]@,$[5.5618137]@
$[0.3950608]@,$[0.5681281]@,$[0.52228731]@,$[0.38734668]@,$[6.0275405]@
$[0.57194862]@,$[0.37971611]@,$[0.52990472]@,$[0.57669245]@,$[7.735769]@
$[0.34519508]@,$[0.79851066]@,$[0.62095543]@,$[0.7241409]@,$[4.8097168]@
$[1.14747]@,$[0.39562119]@,$[0.71706799]@,$[1.1627737]@,$[11.040374]@
$[0.54331458]@,$[0.91899617]@,$[1.1830175]@,$[0.50826096]@,$[15.031725]@
$[0.91639717]@,$[1.0021306]@,$[0.8181041]@,$[1.0575891]@,$[11.182176]@
$[0.84154751]@,$[1.0678408]@,$[1.6129709]@,$[1.0882924]@,$[48.330327]@
$[0.90021796]@,$[1.6732901]@,$[1.5798495]@,$[1.6746887]@,$[86.179308]@
$[1.74044493]@,$[1.8753296]@,$[0.76107316]@,$[2.0949983]@,$[66.698887]@
$[2.3565648]@,$[0.85713492]@,$[0.69298073]@,$[1.1664364]@,$[18.415874]@
$[1.7511885]@,$[1.0430769]@,$[2.0655162]@,$[2.2877591]@,$[234.6086]@
$[2.0245999]@,$[2.4658398]@,$[0.80593147]@,$[1.1094592]@,$[-52.312797]@
$[2.1538304]@,$[2.5925068]@,$[1.0207044]@,$[1.7474242]@,$[-26.571218]@
$[1.4904774]@,$[2.1680382]@,$[1.6166943]@,$[2.4400032]@,$[225.73435]@
$[2.0490705]@,$[0.9173393]@,$[1.8342413]@,$[2.9629803]@,$[305.53163]@
$[0.9336184]@,$[2.0209138]@,$[2.2912282]@,$[1.8810376]@,$[325.74473]@
$[1.9791621]@,$[3.1133329]@,$[2.5884454]@,$[3.1898124]@,$[1359.0925]@

```

BT2022_qiv_22_alldata

CE18B107
alpha = 0.17061779
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X2 X2 X1 X3 + beta_2 X2 X1 X4 X1 X1 + beta_3 X3 X4 X3 X3 X4
+ beta_4 X4 X4 X3 X2 X3
PARAMATER FOR POPULATION RANGE: beta_2
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[-0.81563946]@
\$[0.1151327]@,\$[0.1891078]@,\$[0.17568209]@,\$[0.05969169]@,\$[1.1000626]@
\$[0.35783625]@,\$[0.16518306]@,\$[0.32267732]@,\$[0.15459196]@,\$[1.065612]@
\$[0.2101396]@,\$[0.33906426]@,\$[0.40743744]@,\$[0.35332458]@,\$[0.34470389]@
\$[0.67144911]@,\$[0.50470918]@,\$[0.57015848]@,\$[0.55088458]@,\$[-0.32820785]@
\$[0.25904974]@,\$[0.73270964]@,\$[0.65360098]@,\$[0.6319003]@,\$[0.48080989]@
\$[1.0279229]@,\$[0.67887279]@,\$[0.61811271]@,\$[1.1692778]@,\$[4.3503965]@
\$[0.5299095]@,\$[1.2053493]@,\$[1.1853368]@,\$[0.94468966]@,\$[11.091226]@
\$[0.68607887]@,\$[1.3115291]@,\$[0.99576762]@,\$[0.57517462]@,\$[2.4748927]@
\$[1.632434]@,\$[0.6804242]@,\$[0.57110437]@,\$[1.7062221]@,\$[11.077464]@
\$[0.56473487]@,\$[1.3274263]@,\$[1.0981664]@,\$[1.1711797]@,\$[15.374419]@
\$[1.2113118]@,\$[0.59665625]@,\$[1.1433509]@,\$[1.5294222]@,\$[18.859169]@
\$[1.410129]@,\$[1.2721052]@,\$[1.2245679]@,\$[1.1210369]@,\$[16.903244]@
\$[1.4854234]@,\$[1.1217734]@,\$[1.9214493]@,\$[0.95175083]@,\$[30.657482]@
\$[2.6797835]@,\$[2.1974117]@,\$[1.4602743]@,\$[1.932117]@,\$[152.30405]@
\$[0.91253832]@,\$[1.4188446]@,\$[1.9716037]@,\$[1.1126069]@,\$[49.629246]@
\$[1.5354636]@,\$[1.840899]@,\$[3.129404]@,\$[2.7165137]@,\$[1128.5092]@
\$[2.6817209]@,\$[2.0570064]@,\$[3.0364371]@,\$[1.7389259]@,\$[416.91758]@
\$[3.1361324]@,\$[2.6574477]@,\$[2.6770123]@,\$[3.1135806]@,\$[1356.8857]@
\$[2.2674458]@,\$[1.2521272]@,\$[1.1395184]@,\$[2.6388202]@,\$[121.97461]@

CE18B109
alpha = 0.07242354
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X3 X4 X1 X3 + beta_2 X2 X1 X3 X1 X3 + beta_3 X3 X2 X1 X4 X3
+ beta_4 X4 X1 X2 X1 X2
PARAMATER FOR POPULATION RANGE: beta_4
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[2.7774711]@
\$[0.085896517]@,\$[0.17434048]@,\$[0.13925311]@,\$[0.1675285]@,\$[1.5486845]@
\$[0.33173764]@,\$[0.19567984]@,\$[0.34836701]@,\$[0.34156715]@,\$[1.7458513]@
\$[0.21265034]@,\$[0.56396299]@,\$[0.26486531]@,\$[0.29375722]@,\$[1.4950125]@
\$[0.55142251]@,\$[0.43688129]@,\$[0.21444786]@,\$[0.6546162]@,\$[1.093057]@
\$[0.70939518]@,\$[0.62656386]@,\$[0.39817265]@,\$[0.93571686]@,\$[1.1438385]@
\$[0.61297647]@,\$[1.051009]@,\$[0.83636118]@,\$[1.1418512]@,\$[5.2020456]@
\$[1.1775695]@,\$[0.61084995]@,\$[0.37541565]@,\$[0.63241065]@,\$[5.3538359]@
\$[1.2045998]@,\$[0.62819494]@,\$[0.66358144]@,\$[0.61170424]@,\$[3.1154772]@
\$[1.323761]@,\$[0.6730733]@,\$[0.87235628]@,\$[1.7847373]@,\$[13.047848]@
\$[1.5780043]@,\$[0.50475632]@,\$[1.6241397]@,\$[1.5442702]@,\$[22.816879]@

BT2022_qiv_22_alldata

\$[1.5303484]@,\$[1.9850321]@,\$[1.2054933]@,\$[1.9824189]@,\$[96.176774]@
 \$[1.0110529]@,\$[1.2069816]@,\$[2.3859394]@,\$[0.89514309]@,\$[20.800688]@
 \$[2.0568898]@,\$[1.5738647]@,\$[1.4486101]@,\$[0.66660082]@,\$[32.03894]@
 \$[1.3299434]@,\$[1.9062111]@,\$[1.674264]@,\$[1.2038496]@,\$[50.090883]@
 \$[0.80544371]@,\$[1.9849952]@,\$[0.77495231]@,\$[2.6216479]@,\$[34.55688]@
 \$[2.9178522]@,\$[1.0900638]@,\$[1.8218497]@,\$[0.84410757]@,\$[54.348815]@
 \$[1.4750252]@,\$[1.5044316]@,\$[0.89261298]@,\$[1.7239792]@,\$[42.82072]@
 \$[1.363753]@,\$[2.9087462]@,\$[2.3572983]@,\$[2.8986184]@,\$[343.93365]@
 \$[3.3347886]@,\$[3.5291369]@,\$[3.2740843]@,\$[1.4605808]@,\$[1004.469]@

CE18B111

alpha = 0.19551611

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X1 X2 X2 X4 + beta_2 X2 X3 X3 X3 X2 + beta_3 X3 X1 X4 X4 X3
 + beta_4 X4 X3 X1 X3 X2

PARAMATER FOR POPULATION RANGE: beta_3

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[1.7504877]@
 \$[0.15876572]@,\$[0.13119038]@,\$[0.095880845]@,\$[0.15162184]@,\$[2.8595993]@
 \$[0.29787148]@,\$[0.19279275]@,\$[0.12741795]@,\$[0.36875477]@,\$[1.6451955]@
 \$[0.34200936]@,\$[0.19004616]@,\$[0.33631324]@,\$[0.48306752]@,\$[0.70053648]@
 \$[0.50469773]@,\$[0.33511538]@,\$[0.26851911]@,\$[0.73256579]@,\$[3.2263741]@
 \$[0.63750556]@,\$[0.59679584]@,\$[0.45449513]@,\$[0.7986803]@,\$[4.5687756]@
 \$[0.97763157]@,\$[0.70117097]@,\$[0.89632445]@,\$[0.85332804]@,\$[8.0422353]@
 \$[1.17024]@,\$[0.61587334]@,\$[1.1021489]@,\$[1.2606942]@,\$[14.499367]@
 \$[0.85225152]@,\$[0.58158838]@,\$[1.1997941]@,\$[1.2654029]@,\$[13.800235]@
 \$[0.73142974]@,\$[1.3229563]@,\$[1.0668584]@,\$[0.74873685]@,\$[12.969736]@
 \$[0.99277493]@,\$[1.6694384]@,\$[0.60327128]@,\$[0.62425058]@,\$[9.4124512]@
 \$[1.2217668]@,\$[1.1878558]@,\$[1.0888888]@,\$[1.1241986]@,\$[23.568202]@
 \$[0.81821321]@,\$[1.150276]@,\$[1.1323482]@,\$[0.91098703]@,\$[15.589617]@
 \$[2.0911496]@,\$[2.2438585]@,\$[1.9117305]@,\$[1.8961215]@,\$[378.34271]@
 \$[0.81606781]@,\$[2.6447622]@,\$[1.9660526]@,\$[0.70415536]@,\$[180.61632]@
 \$[1.9080347]@,\$[2.4489305]@,\$[1.9307398]@,\$[2.9307291]@,\$[606.63952]@
 \$[1.5674739]@,\$[1.0981693]@,\$[3.1729216]@,\$[1.0094476]@,\$[219.3936]@
 \$[1.997507]@,\$[1.5302075]@,\$[3.2195236]@,\$[1.6127559]@,\$[572.69797]@
 \$[2.383604]@,\$[1.4883278]@,\$[1.7234103]@,\$[2.4540127]@,\$[309.88421]@
 \$[2.4159846]@,\$[3.7795475]@,\$[1.451262]@,\$[1.6980495]@,\$[593.29115]@

CE18B114

alpha = 0.05949086

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X4 X4 X2 X4 + beta_2 X2 X2 X3 X1 X4 + beta_3 X3 X1 X3 X3 X1
 + beta_4 X4 X4 X3 X2 X2

PARAMATER FOR POPULATION RANGE: beta_3

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[4.4044314]@

```

BT2022_qiv_22_alldata
$[0.15123596]@,$[0.089921362]@,$[0.063420586]@,$[0.16097405]@,$[3.0439039]@
$[0.2474874]@,$[0.19814526]@,$[0.39576849]@,$[0.25486927]@,$[3.483262]@
$[0.43635277]@,$[0.21073847]@,$[0.16066892]@,$[0.567454]@,$[4.0420918]@
$[0.56907268]@,$[0.20675483]@,$[0.78203507]@,$[0.58770142]@,$[4.0003303]@
$[0.39332393]@,$[0.81223756]@,$[0.6301073]@,$[0.72994359]@,$[5.1328815]@
$[1.015537]@,$[0.30569808]@,$[0.61384631]@,$[0.60478317]@,$[2.7586031]@
$[0.84604811]@,$[0.66803926]@,$[1.3359555]@,$[0.89236475]@,$[5.9747184]@
$[1.2854958]@,$[1.3043548]@,$[0.58552397]@,$[0.59009889]@,$[4.0834246]@
$[0.94612902]@,$[0.48284807]@,$[0.48147525]@,$[0.52164628]@,$[4.1381365]@
$[0.60596279]@,$[1.143348]@,$[0.78397789]@,$[1.6309869]@,$[30.169289]@
$[1.5513193]@,$[0.87020532]@,$[1.9288276]@,$[1.2828497]@,$[16.585421]@
$[1.3722632]@,$[2.2017599]@,$[0.85310634]@,$[0.91383895]@,$[21.63119]@
$[2.4081368]@,$[1.7565055]@,$[0.79917567]@,$[1.6075368]@,$[123.59071]@
$[1.3336007]@,$[1.7865886]@,$[2.1646347]@,$[2.146443]@,$[218.38201]@
$[2.5307687]@,$[2.0508252]@,$[2.7506556]@,$[2.8055485]@,$[849.97939]@
$[1.8373131]@,$[1.6358874]@,$[2.335944]@,$[3.0177396]@,$[652.43692]@
$[2.796654]@,$[2.9021173]@,$[3.2163208]@,$[2.6868342]@,$[1211.264]@
$[1.5538142]@,$[0.98980713]@,$[2.1059756]@,$[2.3659493]@,$[149.97209]@
$[1.7936074]@,$[1.339633]@,$[3.6764761]@,$[3.5906528]@,$[853.70428]@

```

CE18B115

alpha = 0.10970216

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X1 X3 X3 X3 + beta_2 X2 X3 X4 X1 X3 + beta_3 X3 X3 X1 X4 X2
+ beta_4 X4 X2 X4 X1 X3

PARAMATER FOR POPULATION RANGE: beta_2

DATA COLUMNS X1 X2 X3 X4 Y

```

$[0]@,$[0]@,$[0]@,$[0]@,$[1.6236977]@
$[0.14252991]@,$[0.05181647]@,$[0.11943801]@,$[0.089505494]@,$[2.1795968]@
$[0.24333686]@,$[0.29242927]@,$[0.20153361]@,$[0.25097306]@,$[2.6169002]@
$[0.42419202]@,$[0.18874978]@,$[0.28695863]@,$[0.2238891]@,$[0.86407389]@
$[0.67600329]@,$[0.77856696]@,$[0.7977564]@,$[0.70057797]@,$[2.3775218]@
$[0.90873116]@,$[0.49004737]@,$[0.50882882]@,$[0.89343745]@,$[0.97589459]@
$[1.0472019]@,$[0.90584677]@,$[0.87029925]@,$[0.5242492]@,$[4.4585761]@
$[0.98335565]@,$[1.2571161]@,$[0.82646983]@,$[1.2167274]@,$[9.8854886]@
$[1.1849291]@,$[1.1897183]@,$[1.1592358]@,$[1.2360859]@,$[17.199403]@
$[0.53440799]@,$[1.4714694]@,$[1.238758]@,$[0.75798447]@,$[9.0351058]@
$[1.258202]@,$[1.3089463]@,$[1.8024555]@,$[0.70271108]@,$[31.153614]@
$[2.0263673]@,$[0.61875975]@,$[1.1523805]@,$[1.5263898]@,$[20.987244]@
$[0.97278493]@,$[1.688071]@,$[1.1787014]@,$[2.2033236]@,$[30.606806]@
$[1.7821807]@,$[2.3162768]@,$[1.4245905]@,$[1.7945213]@,$[100.70198]@
$[1.3723683]@,$[2.6352162]@,$[0.92622473]@,$[2.453097]@,$[44.110918]@
$[1.5924035]@,$[0.86791262]@,$[1.8912442]@,$[1.1859949]@,$[48.716986]@
$[2.5229036]@,$[2.8823523]@,$[1.1933444]@,$[1.9363675]@,$[124.24873]@
$[1.3327497]@,$[1.3742778]@,$[3.3070463]@,$[3.0076715]@,$[408.32735]@
$[3.5657791]@,$[1.3341701]@,$[3.0234562]@,$[3.037826]@,$[1005.8512]@
$[1.4196396]@,$[2.8341226]@,$[2.6405573]@,$[3.1903697]@,$[561.66221]@

```

BT2022_qiv_22_alldata

CE18B116
alpha = 0.15380512
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X1 X1 X4 X4 + beta_2 X2 X3 X3 X4 X3 + beta_3 X3 X4 X3 X4 X1
+ beta_4 X4 X4 X3 X3 X3
PARAMATER FOR POPULATION RANGE: beta_2
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[8.7723765]@
\$[0.19331544]@,\$[0.16264909]@,\$[0.16778833]@,\$[0.076287587]@,\$[7.3484253]@
\$[0.27494881]@,\$[0.1972282]@,\$[0.15559183]@,\$[0.16150452]@,\$[7.1670526]@
\$[0.57179952]@,\$[0.37686151]@,\$[0.36584925]@,\$[0.56581485]@,\$[6.3664161]@
\$[0.56646416]@,\$[0.51021914]@,\$[0.29138404]@,\$[0.37670369]@,\$[6.4164141]@
\$[0.28121816]@,\$[0.79382033]@,\$[0.28192867]@,\$[0.75598774]@,\$[9.7584151]@
\$[0.4423526]@,\$[0.62634868]@,\$[0.9617458]@,\$[0.77380402]@,\$[13.327646]@
\$[1.2668653]@,\$[0.96295696]@,\$[0.59500533]@,\$[1.2532659]@,\$[21.925166]@
\$[1.531649]@,\$[0.44957815]@,\$[1.1441941]@,\$[0.74678269]@,\$[25.314175]@
\$[0.65180944]@,\$[1.2653934]@,\$[1.593683]@,\$[1.462883]@,\$[86.972205]@
\$[0.75901411]@,\$[1.7857739]@,\$[1.1027207]@,\$[0.99069602]@,\$[26.083165]@
\$[1.5419951]@,\$[0.71112257]@,\$[0.65934311]@,\$[1.4408258]@,\$[40.416074]@
\$[1.556324]@,\$[0.80068923]@,\$[2.2096847]@,\$[1.2762484]@,\$[195.51374]@
\$[1.5666292]@,\$[1.089927]@,\$[1.618945]@,\$[1.1025536]@,\$[82.914141]@
\$[1.3333011]@,\$[2.3078103]@,\$[0.99851217]@,\$[1.7838329]@,\$[74.981006]@
\$[1.3694646]@,\$[1.9792938]@,\$[2.9233121]@,\$[1.2062928]@,\$[441.85755]@
\$[2.752586]@,\$[1.3634133]@,\$[3.1369586]@,\$[1.5876075]@,\$[1024.7349]@
\$[3.2409188]@,\$[1.4636544]@,\$[0.98312197]@,\$[1.1042387]@,\$[152.64694]@
\$[1.6784865]@,\$[2.7289319]@,\$[1.0182298]@,\$[1.0052622]@,\$[43.696265]@
\$[1.7480187]@,\$[2.813522]@,\$[1.1705339]@,\$[1.7533813]@,\$[133.20993]@

CE18B120
alpha = 0.079737759
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X4 X4 X2 X2 + beta_2 X2 X2 X2 X3 X4 + beta_3 X3 X1 X1 X2 X3
+ beta_4 X4 X4 X3 X3 X2
PARAMATER FOR POPULATION RANGE: beta_3
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[-3.3680377]@
\$[0.1813491]@,\$[0.064207519]@,\$[0.13643084]@,\$[0.1620318]@,\$[-4.0778755]@
\$[0.34087554]@,\$[0.29889953]@,\$[0.22989534]@,\$[0.22827433]@,\$[-0.50629414]@
\$[0.24022606]@,\$[0.33576308]@,\$[0.26378419]@,\$[0.25180606]@,\$[-4.6123479]@
\$[0.47860696]@,\$[0.77319278]@,\$[0.79116674]@,\$[0.73664919]@,\$[0.099347777]@
\$[0.37853594]@,\$[0.26008268]@,\$[0.51823438]@,\$[0.5098038]@,\$[-2.7961785]@
\$[0.94177811]@,\$[0.55867738]@,\$[0.56111225]@,\$[0.75583817]@,\$[-1.4115433]@
\$[0.94524898]@,\$[1.2761671]@,\$[0.99299939]@,\$[0.63358002]@,\$[11.311425]@
\$[0.92616937]@,\$[0.67509577]@,\$[0.67368891]@,\$[0.60080199]@,\$[-2.3865297]@
\$[1.4363782]@,\$[1.1948672]@,\$[1.5874203]@,\$[0.80563942]@,\$[35.069649]@

BT2022_qiv_22_alldata

\$[1.6337116]@,\$[1.3107589]@,\$[1.4948717]@,\$[1.4319257]@,\$[79.965035]@
\$[1.9284937]@,\$[1.0758944]@,\$[0.60837336]@,\$[1.2991159]@,\$[24.034876]@
\$[2.0543289]@,\$[1.5747733]@,\$[1.9522695]@,\$[1.90725]@,\$[259.77645]@
\$[1.3432842]@,\$[2.4404174]@,\$[1.8534559]@,\$[1.598798]@,\$[418.075]@
\$[0.78004109]@,\$[1.691311]@,\$[2.5840592]@,\$[1.0310398]@,\$[119.16087]@
\$[1.8953404]@,\$[2.8205516]@,\$[2.0483541]@,\$[1.5482078]@,\$[744.37398]@
\$[2.6397679]@,\$[1.4028806]@,\$[0.94604458]@,\$[2.9169525]@,\$[274.85993]@
\$[2.110442]@,\$[2.9024112]@,\$[0.86719153]@,\$[3.3737699]@,\$[1384.5975]@
\$[0.94297087]@,\$[3.2570037]@,\$[1.6516214]@,\$[1.7221566]@,\$[791.70056]@
\$[3.2569831]@,\$[2.2362162]@,\$[2.9465268]@,\$[3.3894293]@,\$[2293.0065]@

CE188121

alpha = 0.18538581
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X1 X4 X4 X1 + beta_2 X2 X1 X1 X2 X2 + beta_3 X3 X3 X3 X4 X1
+ beta_4 X4 X4 X2 X1 X3
PARAMATER FOR POPULATION RANGE: beta_2
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[0.56650256]@
\$[0.06794678]@,\$[0.13162548]@,\$[0.088256691]@,\$[0.15845034]@,\$[0.51422999]@
\$[0.14741229]@,\$[0.14216083]@,\$[0.33912406]@,\$[0.34575641]@,\$[-0.78091342]@
\$[0.24416327]@,\$[0.31452175]@,\$[0.52843566]@,\$[0.21180403]@,\$[-2.4898042]@
\$[0.25567911]@,\$[0.25406622]@,\$[0.41673468]@,\$[0.39692229]@,\$[-1.2066862]@
\$[0.28584205]@,\$[0.42005069]@,\$[0.29176889]@,\$[0.89004418]@,\$[-1.4136781]@
\$[0.65031192]@,\$[0.57767859]@,\$[1.118514]@,\$[1.1600813]@,\$[4.8157868]@
\$[1.156496]@,\$[0.82628272]@,\$[0.92845342]@,\$[0.99097055]@,\$[5.4098699]@
\$[0.89825589]@,\$[1.187694]@,\$[1.1675174]@,\$[0.40069212]@,\$[6.0636875]@
\$[1.7691922]@,\$[1.2505179]@,\$[0.87397621]@,\$[1.3532605]@,\$[31.467953]@
\$[0.8150035]@,\$[0.73226882]@,\$[0.68320798]@,\$[0.52835243]@,\$[3.5900371]@
\$[1.0154848]@,\$[1.9011551]@,\$[1.0158604]@,\$[1.4482992]@,\$[38.781569]@
\$[1.8678947]@,\$[1.6839574]@,\$[1.4852024]@,\$[0.77285157]@,\$[77.402949]@
\$[1.2325626]@,\$[1.6826679]@,\$[1.3265327]@,\$[1.6605643]@,\$[54.895548]@
\$[2.0168283]@,\$[1.9519943]@,\$[1.2237694]@,\$[0.85133553]@,\$[120.39698]@
\$[2.6805775]@,\$[2.5183613]@,\$[0.84048426]@,\$[1.3394612]@,\$[428.67928]@
\$[2.5575533]@,\$[2.4762642]@,\$[1.6162617]@,\$[2.5879883]@,\$[558.65526]@
\$[2.2680335]@,\$[2.7698608]@,\$[1.0591386]@,\$[2.6526275]@,\$[495.04274]@
\$[1.5035897]@,\$[3.4922467]@,\$[2.3963861]@,\$[3.3630908]@,\$[827.27348]@
\$[1.4578045]@,\$[3.6987917]@,\$[3.0049008]@,\$[1.1747748]@,\$[556.82346]@

CE188122

alpha = 0.074936761
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X3 X2 X2 X2 + beta_2 X2 X2 X2 X4 X3 + beta_3 X3 X2 X3 X4 X3
+ beta_4 X4 X2 X4 X4 X4
PARAMATER FOR POPULATION RANGE: beta_0
DATA COLUMNS X1 X2 X3 X4 Y

BT2022_qiv_22_alldata

$\$[0]@, \$[0]@, \$[0]@, \$[0]@, \$[1.55625]@$
 $\$[0.05841023]@, \$[0.10722119]@, \$[0.12692847]@, \$[0.10357449]@, \$[0.66603189]@$
 $\$[0.39878314]@, \$[0.21662129]@, \$[0.1252496]@, \$[0.14724568]@, \$[0.74193854]@$
 $\$[0.45028376]@, \$[0.44860464]@, \$[0.19938739]@, \$[0.57620979]@, \$[1.4117917]@$
 $\$[0.25530188]@, \$[0.60891045]@, \$[0.74122122]@, \$[0.24987982]@, \$[1.7808825]@$
 $\$[0.33396391]@, \$[0.92628301]@, \$[0.94888258]@, \$[0.46996492]@, \$[1.2742966]@$
 $\$[0.30197353]@, \$[0.69054332]@, \$[0.33455508]@, \$[1.0401552]@, \$[3.319219]@$
 $\$[0.9863455]@, \$[0.96849852]@, \$[0.41204682]@, \$[0.39393967]@, \$[2.0659515]@$
 $\$[1.4164247]@, \$[0.64058107]@, \$[0.45271225]@, \$[0.90764451]@, \$[3.4641582]@$
 $\$[0.82880053]@, \$[0.50064336]@, \$[0.96126596]@, \$[1.7423621]@, \$[10.792429]@$
 $\$[0.58375756]@, \$[1.3264177]@, \$[1.8726526]@, \$[1.5202784]@, \$[39.23935]@$
 $\$[1.2141753]@, \$[1.1855484]@, \$[1.7406937]@, \$[1.4139807]@, \$[34.061541]@$
 $\$[1.37631]@, \$[2.1917066]@, \$[1.705148]@, \$[1.1289098]@, \$[98.691945]@$
 $\$[1.7666104]@, \$[1.2019987]@, \$[1.8599283]@, \$[2.4030359]@, \$[116.60586]@$
 $\$[1.1808271]@, \$[2.6761049]@, \$[2.0144778]@, \$[1.0984115]@, \$[170.6785]@$
 $\$[2.7950462]@, \$[1.1405267]@, \$[2.5377142]@, \$[2.9094211]@, \$[261.36582]@$
 $\$[1.6330986]@, \$[1.1256001]@, \$[1.167571]@, \$[1.3980834]@, \$[20.754397]@$
 $\$[2.5807038]@, \$[3.0545067]@, \$[2.3743348]@, \$[1.4946491]@, \$[656.83628]@$
 $\$[2.0944285]@, \$[0.93306945]@, \$[1.5497936]@, \$[1.3168194]@, \$[20.726917]@$
 $\$[1.2121624]@, \$[1.5908819]@, \$[1.5646212]@, \$[1.1068124]@, \$[37.406932]@$

CE18B125

```

alpha = 0.077581529
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X3 X4 X2 X1 + beta_2 X2 X1 X3 X4 X4 + beta_3 X3 X3 X3 X4 X4
+ beta_4 X4 X1 X2 X1 X2
PARAMATER FOR POPULATION RANGE: beta_2
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@, $[0]@, $[0]@, $[0]@, $[1.7664133]@
$[0.089106329]@, $[0.076455023]@, $[0.06337927]@, $[0.1318965]@, $[-0.93572424]@
$[0.18179952]@, $[0.36519709]@, $[0.14330773]@, $[0.12383379]@, $[0.82111285]@
$[0.45204843]@, $[0.29241911]@, $[0.3613661]@, $[0.34251801]@, $[1.3835453]@
$[0.4287041]@, $[0.23544611]@, $[0.47135194]@, $[0.52420372]@, $[-0.57211889]@
$[0.92201736]@, $[0.56373714]@, $[0.9936211]@, $[0.52680899]@, $[3.1615602]@
$[1.0310292]@, $[0.36368715]@, $[0.30386599]@, $[0.75578651]@, $[2.701361]@
$[1.2116574]@, $[0.77453157]@, $[1.2838325]@, $[1.1449919]@, $[13.1684]@
$[1.4639676]@, $[1.4591296]@, $[0.76940179]@, $[1.5978465]@, $[29.892576]@
$[1.5086558]@, $[0.9912602]@, $[1.5218553]@, $[1.0501628]@, $[22.36834]@
$[1.9297117]@, $[0.5931157]@, $[0.56389938]@, $[1.436165]@, $[12.288008]@
$[1.4199553]@, $[0.94359855]@, $[1.5608439]@, $[0.62555874]@, $[10.919176]@
$[0.88510259]@, $[1.0194839]@, $[1.7104387]@, $[1.5300095]@, $[17.330198]@
$[1.4687075]@, $[1.0441065]@, $[1.7270086]@, $[2.4700772]@, $[83.844866]@
$[2.6011264]@, $[1.9088006]@, $[2.5057332]@, $[1.5939567]@, $[308.78366]@
$[0.88021254]@, $[2.0151784]@, $[2.9535031]@, $[2.3202391]@, $[99.175866]@
$[2.8790682]@, $[1.0172639]@, $[1.8145425]@, $[1.8587072]@, $[175.31216]@
$[2.0310513]@, $[2.8691463]@, $[1.5992399]@, $[2.4162122]@, $[350.42883]@
$[2.570749]@, $[1.5898072]@, $[1.3675688]@, $[1.2882232]@, $[107.69234]@

```

BT2022_qiv_22_alldata

\$[1.9183449]@,\$[3.5576263]@,\$[2.3609522]@,\$[2.1048784]@,\$[477.54562]@

CE18B129

alpha = 0.10776696

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X4 X4 X1 X3 + beta_2 X2 X2 X3 X3 X2 + beta_3 X3 X4 X2 X4 X4
+ beta_4 X4 X1 X2 X2 X1

PARAMATER FOR POPULATION RANGE: beta_4

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[-2.7876212]@
\$[0.15839805]@,\$[0.17913884]@,\$[0.065542312]@,\$[0.055367382]@,\$[-3.3658651]@
\$[0.36291896]@,\$[0.23224113]@,\$[0.10059257]@,\$[0.31539257]@,\$[-0.84835931]@
\$[0.24452561]@,\$[0.460605]@,\$[0.49751147]@,\$[0.23603863]@,\$[-3.7158062]@
\$[0.24835147]@,\$[0.60787153]@,\$[0.21323485]@,\$[0.48245769]@,\$[-3.111703]@
\$[0.38301095]@,\$[0.99644191]@,\$[0.39550115]@,\$[0.32175938]@,\$[-2.686961]@
\$[0.63944359]@,\$[1.0623593]@,\$[0.91938033]@,\$[0.93235921]@,\$[-5.0419134]@
\$[0.66949809]@,\$[0.86389591]@,\$[1.0837954]@,\$[1.0296744]@,\$[-3.9017634]@
\$[0.79225325]@,\$[1.0369382]@,\$[1.1238905]@,\$[0.46697606]@,\$[-8.1983688]@
\$[0.56317422]@,\$[1.6838974]@,\$[1.6655411]@,\$[1.1091462]@,\$[-53.818283]@
\$[0.85781837]@,\$[1.8792035]@,\$[1.9101668]@,\$[1.1277721]@,\$[-96.149521]@
\$[1.4866594]@,\$[0.64485705]@,\$[0.5566825]@,\$[0.91329117]@,\$[-1.2660333]@
\$[0.67636094]@,\$[1.8172054]@,\$[1.5250352]@,\$[1.6880699]@,\$[-38.09613]@
\$[2.1561127]@,\$[2.3969618]@,\$[0.89262042]@,\$[0.92751687]@,\$[-24.12288]@
\$[0.83485091]@,\$[1.1727163]@,\$[1.8226806]@,\$[2.1903242]@,\$[14.822462]@
\$[2.1487791]@,\$[2.7959662]@,\$[1.0907476]@,\$[1.9761582]@,\$[-13.197918]@
\$[2.3682507]@,\$[0.87084634]@,\$[1.480321]@,\$[1.904503]@,\$[5.9402597]@
\$[2.4584338]@,\$[1.8691713]@,\$[2.8097749]@,\$[2.0991156]@,\$[-121.24109]@
\$[2.3043713]@,\$[2.5387603]@,\$[3.3545764]@,\$[1.1355486]@,\$[-757.69932]@
\$[3.6516662]@,\$[1.7111425]@,\$[1.7130576]@,\$[2.6364435]@,\$[85.746758]@

CE18B130

alpha = 0.15881846

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X3 X2 X4 X1 + beta_2 X2 X2 X1 X1 X2 + beta_3 X3 X4 X2 X2 X3
+ beta_4 X4 X3 X1 X3 X2

PARAMATER FOR POPULATION RANGE: beta_2

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[4.7793137]@
\$[0.11421659]@,\$[0.10393785]@,\$[0.14405969]@,\$[0.13505498]@,\$[4.6199387]@
\$[0.28658785]@,\$[0.10224525]@,\$[0.19705774]@,\$[0.1267663]@,\$[2.2603014]@
\$[0.2776712]@,\$[0.43626038]@,\$[0.57448413]@,\$[0.20155305]@,\$[5.0862453]@
\$[0.31184316]@,\$[0.41013685]@,\$[0.68903648]@,\$[0.6856257]@,\$[4.3559959]@
\$[0.82627393]@,\$[0.81475595]@,\$[0.77845799]@,\$[0.92811143]@,\$[7.9172832]@
\$[0.57530794]@,\$[0.34789165]@,\$[0.93686592]@,\$[0.908408]@,\$[4.1740611]@
\$[0.81962765]@,\$[1.2026244]@,\$[0.49238603]@,\$[1.1002967]@,\$[7.0969186]@
\$[0.71020437]@,\$[1.2830331]@,\$[1.1909432]@,\$[1.458421]@,\$[28.911316]@

BT2022_qiv_22_alldata

$\$[0.95324925]@, \$[0.83569031]@, \$[1.2906372]@, \$[0.58417278]@, \$[11.216615]@$
 $\$[1.1342749]@, \$[1.2217313]@, \$[0.73001306]@, \$[1.8739753]@, \$[20.456403]@$
 $\$[0.61331548]@, \$[1.1046681]@, \$[1.7222635]@, \$[0.98162146]@, \$[27.716994]@$
 $\$[1.1276645]@, \$[0.74769093]@, \$[2.2225392]@, \$[0.85307817]@, \$[30.643918]@$
 $\$[1.3706703]@, \$[2.2817656]@, \$[1.9594045]@, \$[1.7509002]@, \$[284.83858]@$
 $\$[2.5717589]@, \$[2.7229745]@, \$[1.8775768]@, \$[2.1389395]@, \$[704.96868]@$
 $\$[0.82362444]@, \$[0.79942528]@, \$[2.6314487]@, \$[2.0776632]@, \$[85.613699]@$
 $\$[2.1925075]@, \$[0.89460398]@, \$[2.1543692]@, \$[1.3225398]@, \$[105.46263]@$
 $\$[2.2226113]@, \$[2.1482207]@, \$[2.6111162]@, \$[2.4430228]@, \$[842.17554]@$
 $\$[3.4184528]@, \$[2.0236241]@, \$[2.6369466]@, \$[2.4011416]@, \$[1197.6757]@$
 $\$[3.7555637]@, \$[0.96112924]@, \$[2.154493]@, \$[3.7619577]@, \$[629.58818]@$

CE18B132

alpha = 0.063763876

MLR FIT FUNCTION

$Y = \beta_0 + \beta_1 X_1 X_3 X_4 X_3 X_1 + \beta_2 X_2 X_1 X_4 X_2 X_3 + \beta_3 X_3 X_2 X_4 X_3 X_2$
 $+ \beta_4 X_4 X_4 X_4 X_1 X_3$

PARAMATER FOR POPULATION RANGE: beta_3

DATA COLUMNS X1 X2 X3 X4 Y

$\$[0]@, \$[0]@, \$[0]@, \$[0]@, \$[2.572672]@$
 $\$[0.17138014]@, \$[0.081401963]@, \$[0.081060965]@, \$[0.063283824]@, \$[2.1042663]@$
 $\$[0.39312395]@, \$[0.33593977]@, \$[0.11279881]@, \$[0.20320081]@, \$[0.16575197]@$
 $\$[0.47394413]@, \$[0.59901781]@, \$[0.28571509]@, \$[0.51623132]@, \$[3.4432617]@$
 $\$[0.34274314]@, \$[0.61843254]@, \$[0.34953344]@, \$[0.66432386]@, \$[2.9720142]@$
 $\$[0.98673972]@, \$[0.68303093]@, \$[0.99883718]@, \$[0.75715791]@, \$[2.6292051]@$
 $\$[0.96950214]@, \$[0.76479662]@, \$[0.89633012]@, \$[0.75354442]@, \$[0.90586829]@$
 $\$[0.58087742]@, \$[0.61770131]@, \$[0.61151287]@, \$[0.86794694]@, \$[4.2651255]@$
 $\$[1.3744535]@, \$[0.72380181]@, \$[1.0750784]@, \$[1.3713229]@, \$[-0.29229994]@$
 $\$[0.89685007]@, \$[1.1067262]@, \$[1.3989131]@, \$[1.5354437]@, \$[15.23184]@$
 $\$[0.8124829]@, \$[0.97430085]@, \$[1.6768281]@, \$[1.3891193]@, \$[13.778024]@$
 $\$[0.82625397]@, \$[0.86964623]@, \$[1.0516526]@, \$[2.1757461]@, \$[15.913878]@$
 $\$[1.9872202]@, \$[1.0388035]@, \$[1.1937347]@, \$[2.3408628]@, \$[7.9901662]@$
 $\$[1.0474711]@, \$[2.0902372]@, \$[0.75752042]@, \$[2.0695947]@, \$[39.430553]@$
 $\$[2.6976421]@, \$[2.7747528]@, \$[1.8676562]@, \$[0.7968294]@, \$[75.588675]@$
 $\$[2.2266487]@, \$[2.6336119]@, \$[0.78398702]@, \$[2.9420294]@, \$[131.04384]@$
 $\$[0.99259249]@, \$[1.2382484]@, \$[2.9517159]@, \$[0.83213711]@, \$[27.19786]@$
 $\$[1.3980401]@, \$[2.2296967]@, \$[2.768164]@, \$[2.0008582]@, \$[286.73817]@$
 $\$[1.0829805]@, \$[1.2009064]@, \$[3.4503293]@, \$[2.9762534]@, \$[165.31243]@$
 $\$[2.136372]@, \$[1.809942]@, \$[1.6372581]@, \$[2.7156246]@, \$[97.247127]@$

CE18B133

alpha = 0.057560671

MLR FIT FUNCTION

$Y = \beta_0 + \beta_1 X_1 X_1 X_4 X_1 X_3 + \beta_2 X_2 X_3 X_3 X_2 X_2 + \beta_3 X_3 X_3 X_4 X_3 X_1$
 $+ \beta_4 X_4 X_4 X_3 X_4 X_1$

PARAMATER FOR POPULATION RANGE: beta_3

BT2022_qiv_22_alldata

```
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@[0]@[0]@[0]@[0]@[3.3216391]@
$[0.1010048]@[0]@[0.068887666]@[0]@[0.12529022]@[0]@[0.19829861]@[0]@[3.0843938]@
$[0.36080087]@[0]@[0.33490305]@[0]@[0.19023631]@[0]@[0.38689857]@[0]@[2.1302159]@
$[0.19220306]@[0]@[0.38736409]@[0]@[0.44898141]@[0]@[0.34590409]@[0]@[1.7382929]@
$[0.39531846]@[0]@[0.76959779]@[0]@[0.74665946]@[0]@[0.64821532]@[0]@[3.0476962]@
$[0.90729932]@[0]@[0.4516218]@[0]@[0.47948231]@[0]@[0.66430099]@[0]@[5.6049777]@
$[0.42391975]@[0]@[0.96836863]@[0]@[0.48374311]@[0]@[0.34795235]@[0]@[3.0875168]@
$[0.89793462]@[0]@[1.2505727]@[0]@[0.54019026]@[0]@[1.3001131]@[0]@[10.967257]@
$[0.76842868]@[0]@[1.3156052]@[0]@[0.51538392]@[0]@[1.1031802]@[0]@[9.069672]@
$[1.5891354]@[0]@[0.81646841]@[0]@[1.7015789]@[0]@[1.2078476]@[0]@[26.34406]@
$[0.90130658]@[0]@[1.6264072]@[0]@[1.6863751]@[0]@[1.5758224]@[0]@[73.552571]@
$[1.2055449]@[0]@[1.1427646]@[0]@[1.0468872]@[0]@[1.5237764]@[0]@[32.189553]@
$[2.303779]@[0]@[1.171133]@[0]@[1.1636444]@[0]@[1.1491296]@[0]@[9.5192142]@
$[1.4491379]@[0]@[1.3915736]@[0]@[1.2114797]@[0]@[1.440551]@[0]@[40.463974]@
$[2.5183287]@[0]@[2.3516733]@[0]@[2.3131138]@[0]@[1.1054594]@[0]@[187.81214]@
$[2.3834536]@[0]@[1.6935735]@[0]@[0.98443671]@[0]@[1.4760057]@[0]@[32.950693]@
$[2.6933067]@[0]@[2.0769066]@[0]@[1.4696574]@[0]@[2.4896838]@[0]@[340.78758]@
$[1.2488051]@[0]@[1.343621]@[0]@[2.5287691]@[0]@[2.9692457]@[0]@[572.61134]@
$[3.5954858]@[0]@[1.6539708]@[0]@[1.6206018]@[0]@[1.6154478]@[0]@[ -3.785824]@
$[3.5283102]@[0]@[2.3824064]@[0]@[3.0443712]@[0]@[2.3509271]@[0]@[786.83502]@
```

CH16B102

alpha = 0.16280144

MLR FIT FUNCTION

```
Y = beta_0 + beta_1 X1 X1 X2 X2 X2 + beta_2 X2 X2 X4 X4 X4 + beta_3 X3 X2 X3 X4 X3
+ beta_4 X4 X3 X2 X2 X3
```

PARAMATER FOR POPULATION RANGE: beta_0

DATA COLUMNS X1 X2 X3 X4 Y

```
$[0]@[0]@[0]@[0]@[6.5294154]@
$[0.11229183]@[0]@[0.074263148]@[0]@[0.11452829]@[0]@[0.19317503]@[0]@[6.0104072]@
$[0.28349276]@[0]@[0.20899232]@[0]@[0.22441289]@[0]@[0.3205034]@[0]@[6.0292494]@
$[0.49803375]@[0]@[0.29636147]@[0]@[0.32960222]@[0]@[0.15549074]@[0]@[7.5499617]@
$[0.21805523]@[0]@[0.6155251]@[0]@[0.42988463]@[0]@[0.31180585]@[0]@[6.1274556]@
$[0.55903052]@[0]@[0.82914959]@[0]@[0.58917606]@[0]@[0.43514338]@[0]@[6.460616]@
$[0.63822149]@[0]@[0.68228124]@[0]@[1.1543491]@[0]@[1.172902]@[0]@[14.835219]@
$[0.98611173]@[0]@[1.0803126]@[0]@[1.3141081]@[0]@[0.95177769]@[0]@[20.200164]@
$[0.74864596]@[0]@[0.68202556]@[0]@[1.2735405]@[0]@[0.45054775]@[0]@[7.7836903]@
$[1.2521382]@[0]@[1.6419517]@[0]@[1.137731]@[0]@[1.323118]@[0]@[52.146257]@
$[1.7533166]@[0]@[0.72841985]@[0]@[0.9514199]@[0]@[0.57469286]@[0]@[9.7602366]@
$[1.0682068]@[0]@[1.1588512]@[0]@[1.9562099]@[0]@[1.6854417]@[0]@[96.454653]@
$[1.2264614]@[0]@[2.0333169]@[0]@[0.73660738]@[0]@[1.1002078]@[0]@[43.396596]@
$[1.1350648]@[0]@[2.4311107]@[0]@[1.9037368]@[0]@[1.5391682]@[0]@[251.47862]@
$[2.7467557]@[0]@[1.622907]@[0]@[2.5553978]@[0]@[2.7509612]@[0]@[550.44634]@
$[1.3094409]@[0]@[0.87151076]@[0]@[2.5007071]@[0]@[2.6894932]@[0]@[202.14016]@
$[1.1710689]@[0]@[2.261603]@[0]@[1.6883877]@[0]@[2.6617738]@[0]@[418.89372]@
$[1.7900706]@[0]@[1.3611034]@[0]@[2.6541711]@[0]@[2.7082144]@[0]@[431.45026]@
```

BT2022_qiv_22_alldata
\$[1.7029501]@,\$[2.1803996]@,\$[2.2367925]@,\$[1.006276]@,\$[208.46785]@
\$[1.5472698]@,\$[2.1320752]@,\$[1.9511634]@,\$[3.3695343]@,\$[719.67878]@

CH17B078

alpha = 0.16347514

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X2 X3 X1 X2 + beta_2 X2 X2 X1 X3 X2 + beta_3 X3 X2 X3 X1 X1
+ beta_4 X4 X1 X4 X4 X2

PARAMATER FOR POPULATION RANGE: beta_0

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[0.30936961]@
\$[0.052499493]@,\$[0.10356494]@,\$[0.14058011]@,\$[0.06272271]@,\$[1.1625087]@
\$[0.13853566]@,\$[0.22602317]@,\$[0.31630334]@,\$[0.17661541]@,\$[1.15029]@
\$[0.23137591]@,\$[0.24722469]@,\$[0.57363258]@,\$[0.16441503]@,\$[0.86463255]@
\$[0.20496833]@,\$[0.60224703]@,\$[0.47443692]@,\$[0.45920666]@,\$[-0.45884274]@
\$[0.68255695]@,\$[0.46433972]@,\$[0.72335095]@,\$[0.62934277]@,\$[1.1588619]@
\$[0.77845118]@,\$[0.86225937]@,\$[0.49238176]@,\$[1.0344493]@,\$[2.3975051]@
\$[0.77739054]@,\$[0.47389669]@,\$[0.82645038]@,\$[0.90995898]@,\$[2.0914248]@
\$[0.45862631]@,\$[1.2551556]@,\$[0.75700069]@,\$[1.0899405]@,\$[4.9693431]@
\$[0.87370974]@,\$[0.48992797]@,\$[1.7380345]@,\$[0.83088286]@,\$[7.2511893]@
\$[0.81309284]@,\$[0.98251682]@,\$[1.1454805]@,\$[1.8016248]@,\$[24.702834]@
\$[1.9875892]@,\$[1.5439909]@,\$[0.78013808]@,\$[1.0275405]@,\$[73.294767]@
\$[1.7556782]@,\$[1.9464263]@,\$[1.4333361]@,\$[1.2603999]@,\$[198.65984]@
\$[2.3949249]@,\$[1.376358]@,\$[2.2347379]@,\$[1.7750179]@,\$[360.03818]@
\$[0.79991375]@,\$[2.2029836]@,\$[1.1897771]@,\$[0.73512758]@,\$[55.695465]@
\$[2.4991067]@,\$[1.8499867]@,\$[1.4697017]@,\$[1.9178546]@,\$[407.53719]@
\$[1.8907104]@,\$[2.4926546]@,\$[1.9979387]@,\$[2.8868937]@,\$[878.6101]@
\$[1.788826]@,\$[3.1167931]@,\$[1.2529188]@,\$[0.95585148]@,\$[450.56364]@
\$[0.97942926]@,\$[1.8135171]@,\$[1.6256332]@,\$[0.95864229]@,\$[72.417655]@
\$[2.2804318]@,\$[2.7164642]@,\$[1.1499903]@,\$[1.8824266]@,\$[554.72778]@

CH17B102

alpha = 0.19152377

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X3 X4 X4 X4 + beta_2 X2 X1 X1 X3 X1 + beta_3 X3 X4 X3 X3 X3
+ beta_4 X4 X1 X4 X3 X1

PARAMATER FOR POPULATION RANGE: beta_0

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[3.1937369]@
\$[0.064796504]@,\$[0.1480157]@,\$[0.12660303]@,\$[0.17008098]@,\$[3.572638]@
\$[0.11120237]@,\$[0.2669791]@,\$[0.34615021]@,\$[0.36628847]@,\$[5.0981303]@
\$[0.21026123]@,\$[0.4024486]@,\$[0.34240726]@,\$[0.24664221]@,\$[3.7528113]@
\$[0.63622563]@,\$[0.69007723]@,\$[0.67460681]@,\$[0.46888136]@,\$[3.5638358]@
\$[0.46650574]@,\$[0.40022347]@,\$[0.61032285]@,\$[0.84926693]@,\$[4.5448428]@
\$[0.70259457]@,\$[0.38240461]@,\$[0.5063949]@,\$[0.52948461]@,\$[6.0310977]@
\$[1.0812175]@,\$[0.93405544]@,\$[1.174839]@,\$[0.49859219]@,\$[10.238732]@

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\$[0.52091033]@,\$[0.7517301]@,\$[1.4006318]@,\$[1.0305832]@,\$[13.569454]@
 \$[1.416602]@,\$[0.46953448]@,\$[1.6206545]@,\$[0.4846952]@,\$[20.041777]@
 \$[0.80501159]@,\$[1.5658704]@,\$[1.2258686]@,\$[0.83324456]@,\$[14.062953]@
 \$[0.69321495]@,\$[1.7776993]@,\$[1.2959012]@,\$[1.669627]@,\$[17.249547]@
 \$[2.1765119]@,\$[1.147679]@,\$[2.3185647]@,\$[0.60875275]@,\$[131.52457]@
 \$[1.370155]@,\$[0.99868222]@,\$[0.8687191]@,\$[1.3505171]@,\$[21.251447]@
 \$[1.2071855]@,\$[1.9423358]@,\$[1.0338507]@,\$[1.4114788]@,\$[23.554896]@
 \$[2.8131921]@,\$[1.5266332]@,\$[1.3061038]@,\$[1.307145]@,\$[178.25954]@
 \$[1.0792549]@,\$[1.4661006]@,\$[2.0890426]@,\$[1.0855345]@,\$[70.08034]@
 \$[1.3683758]@,\$[1.6008671]@,\$[1.9124582]@,\$[3.0399122]@,\$[167.98903]@
 \$[1.4514583]@,\$[1.5230905]@,\$[1.1780719]@,\$[2.3438901]@,\$[51.774715]@
 \$[2.7264775]@,\$[2.1788711]@,\$[0.99979957]@,\$[2.4444353]@,\$[230.24126]@

CH17B103

alpha = 0.13353412

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X2 X4 X3 X3 + beta_2 X2 X2 X1 X3 X2 + beta_3 X3 X1 X2 X2 X4
 + beta_4 X4 X1 X2 X2 X1
 PARAMATER FOR POPULATION RANGE: beta_1
 DATA COLUMNS X1 X2 X3 X4 Y
 \$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[0.99632902]@
 \$[0.092859725]@,\$[0.10785877]@,\$[0.189124]@,\$[0.15945929]@,\$[1.5680069]@
 \$[0.30146134]@,\$[0.35952558]@,\$[0.10771858]@,\$[0.1954358]@,\$[0.53426097]@
 \$[0.4437131]@,\$[0.50791808]@,\$[0.45487415]@,\$[0.34661476]@,\$[3.4121017]@
 \$[0.22942373]@,\$[0.4142548]@,\$[0.21575671]@,\$[0.54904136]@,\$[-0.0064785047]@
 \$[0.91890736]@,\$[0.9808069]@,\$[0.73210175]@,\$[0.33393193]@,\$[6.6581627]@
 \$[1.1590839]@,\$[0.61873138]@,\$[0.90021498]@,\$[0.93998523]@,\$[5.3172616]@
 \$[0.46346988]@,\$[1.2361715]@,\$[0.52985175]@,\$[0.82976468]@,\$[4.0527613]@
 \$[1.3518615]@,\$[0.67537753]@,\$[0.6121195]@,\$[1.1259341]@,\$[6.9756375]@
 \$[0.95676991]@,\$[1.339717]@,\$[1.4383041]@,\$[0.87718624]@,\$[28.186866]@
 \$[1.505144]@,\$[0.8444063]@,\$[1.5971101]@,\$[1.0139959]@,\$[20.536081]@
 \$[1.650926]@,\$[1.2414163]@,\$[1.2930783]@,\$[1.1634782]@,\$[54.549978]@
 \$[1.570758]@,\$[1.5839068]@,\$[0.64474563]@,\$[1.7389508]@,\$[87.132642]@
 \$[1.30036]@,\$[2.1153751]@,\$[2.3839563]@,\$[0.70992535]@,\$[158.07919]@
 \$[1.2964912]@,\$[0.70430733]@,\$[0.81380566]@,\$[1.4558768]@,\$[10.493529]@
 \$[0.97678045]@,\$[2.3877739]@,\$[2.6497984]@,\$[2.6982538]@,\$[352.21956]@
 \$[3.1344814]@,\$[2.0127545]@,\$[2.3884413]@,\$[1.5669867]@,\$[714.46741]@
 \$[1.4818124]@,\$[1.0902675]@,\$[1.2245377]@,\$[1.7869239]@,\$[46.854413]@
 \$[2.5318306]@,\$[1.6809275]@,\$[2.6395739]@,\$[2.6453763]@,\$[569.49847]@
 \$[1.5473878]@,\$[1.3718567]@,\$[2.3403108]@,\$[1.8208884]@,\$[127.38813]@

CH17B112

alpha = 0.093840756

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X1 X4 X2 X4 + beta_2 X2 X4 X3 X3 X2 + beta_3 X3 X4 X3 X4 X2
 + beta_4 X4 X2 X3 X4 X2

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PARAMATER FOR POPULATION RANGE: beta_1

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@[5.3498574]@
\$[0.19493339]@,\$[0.12416544]@,\$[0.14201313]@,\$[0.17418447]@,\$[2.8283548]@
\$[0.26089461]@,\$[0.13035741]@,\$[0.38288547]@,\$[0.29262147]@,\$[4.9165171]@
\$[0.36835173]@,\$[0.58411072]@,\$[0.29923734]@,\$[0.52951936]@,\$[4.1347362]@
\$[0.37945205]@,\$[0.74633654]@,\$[0.64278405]@,\$[0.34934644]@,\$[3.9946248]@
\$[0.96448448]@,\$[0.55571528]@,\$[0.60312479]@,\$[0.40560903]@,\$[3.5201187]@
\$[0.4697129]@,\$[0.68857128]@,\$[1.0476327]@,\$[0.46230464]@,\$[4.1228863]@
\$[0.62141305]@,\$[0.89406328]@,\$[1.1217619]@,\$[0.86535083]@,\$[5.1092591]@
\$[1.055543]@,\$[1.4198373]@,\$[1.4201978]@,\$[1.3009444]@,\$[32.31771]@
\$[0.61073753]@,\$[0.86945233]@,\$[0.8470966]@,\$[1.4215267]@,\$[11.292945]@
\$[0.8534649]@,\$[1.3667295]@,\$[1.518549]@,\$[1.1033159]@,\$[23.175424]@
\$[0.89676331]@,\$[1.0311907]@,\$[0.56868295]@,\$[1.5440992]@,\$[13.188442]@
\$[1.2083559]@,\$[2.2304392]@,\$[2.1418962]@,\$[0.96126752]@,\$[45.844769]@
\$[1.3514923]@,\$[1.1343348]@,\$[2.2339496]@,\$[0.92341514]@,\$[26.725558]@
\$[1.5539105]@,\$[1.0677213]@,\$[2.3908623]@,\$[2.0012753]@,\$[145.39468]@
\$[2.0955739]@,\$[2.5781094]@,\$[2.9326662]@,\$[1.9959926]@,\$[494.36443]@
\$[2.1054697]@,\$[2.6156049]@,\$[1.2816857]@,\$[2.7220797]@,\$[341.84356]@
\$[0.85983283]@,\$[2.0162123]@,\$[1.4611195]@,\$[3.1955295]@,\$[257.37876]@
\$[1.6186458]@,\$[1.6975102]@,\$[2.3803027]@,\$[1.2808794]@,\$[88.975813]@
\$[1.014848]@,\$[3.6205823]@,\$[1.8733025]@,\$[2.6595001]@,\$[476.60552]@

CH17B115

alpha = 0.090935558

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X3 X3 X2 X3 + beta_2 X2 X3 X2 X3 X1 + beta_3 X3 X1 X3 X4 X3
+ beta_4 X4 X2 X3 X1 X4

PARAMATER FOR POPULATION RANGE: beta_2

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@[2.1721663]@
\$[0.1903018]@,\$[0.15099317]@,\$[0.19191275]@,\$[0.18887102]@,\$[4.765974]@
\$[0.34317011]@,\$[0.39640099]@,\$[0.20963683]@,\$[0.29999536]@,\$[3.7285]@
\$[0.40195947]@,\$[0.34744237]@,\$[0.25064569]@,\$[0.52737562]@,\$[5.0972442]@
\$[0.63228593]@,\$[0.63441302]@,\$[0.58678337]@,\$[0.58185977]@,\$[6.1060302]@
\$[0.56716312]@,\$[0.65623336]@,\$[0.91782138]@,\$[0.7339796]@,\$[8.1452812]@
\$[0.32629698]@,\$[0.57782932]@,\$[1.1625637]@,\$[1.1509229]@,\$[7.041588]@
\$[0.78965304]@,\$[0.9314743]@,\$[0.41790929]@,\$[0.35725522]@,\$[5.0440778]@
\$[0.92403329]@,\$[0.88040836]@,\$[1.3589797]@,\$[1.0988526]@,\$[25.179541]@
\$[1.2781708]@,\$[1.1107533]@,\$[1.4305271]@,\$[0.95850252]@,\$[36.187247]@
\$[1.1158574]@,\$[1.1771737]@,\$[1.5265926]@,\$[1.9754138]@,\$[76.313547]@
\$[1.0706929]@,\$[1.9822672]@,\$[1.7403988]@,\$[0.63406058]@,\$[45.572724]@
\$[1.6845495]@,\$[0.91542233]@,\$[0.60560794]@,\$[0.68425288]@,\$[8.4194004]@
\$[1.0646912]@,\$[1.7250191]@,\$[2.5357271]@,\$[1.4145673]@,\$[228.29824]@
\$[1.1635712]@,\$[2.1780361]@,\$[2.4617291]@,\$[1.1266022]@,\$[206.01943]@
\$[2.4177473]@,\$[1.3589406]@,\$[2.4361612]@,\$[1.6880285]@,\$[497.30187]@
\$[2.3166662]@,\$[1.1092753]@,\$[1.3826783]@,\$[3.0073759]@,\$[214.84264]@

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\$[1.9274443]@,\$[2.9121051]@,\$[1.2484197]@,\$[0.85296295]@,\$[35.618666]@
\$[1.4389865]@,\$[2.1047414]@,\$[2.187155]@,\$[1.9540851]@,\$[293.65073]@
\$[2.3211367]@,\$[2.3568262]@,\$[1.8330713]@,\$[3.2243265]@,\$[623.77435]@

CH18B001

alpha = 0.08565342

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X3 X4 X1 X4 + beta_2 X2 X3 X1 X3 X3 + beta_3 X3 X4 X1 X1 X1
+ beta_4 X4 X4 X2 X2 X2
PARAMATER FOR POPULATION RANGE: beta_0
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[-0.40262299]@
\$[0.19726244]@,\$[0.097444924]@,\$[0.15784701]@,\$[0.15565464]@,\$[-0.7916454]@
\$[0.14097703]@,\$[0.24357632]@,\$[0.21359974]@,\$[0.21006972]@,\$[-0.88400108]@
\$[0.48881722]@,\$[0.17128246]@,\$[0.21623119]@,\$[0.25093172]@,\$[-0.49970694]@
\$[0.57571677]@,\$[0.64195961]@,\$[0.21650862]@,\$[0.68068304]@,\$[0.62779203]@
\$[0.38813447]@,\$[0.45402957]@,\$[0.89451981]@,\$[0.3821119]@,\$[2.0126338]@
\$[0.35058142]@,\$[0.5263213]@,\$[1.0974062]@,\$[1.160851]@,\$[1.5194104]@
\$[0.56113287]@,\$[0.42645156]@,\$[1.1182738]@,\$[1.3194601]@,\$[1.6904367]@
\$[0.72400488]@,\$[1.5722129]@,\$[0.68804349]@,\$[1.4827397]@,\$[23.911217]@
\$[0.6235341]@,\$[1.7996433]@,\$[1.3206254]@,\$[1.5049981]@,\$[44.121125]@
\$[1.2351799]@,\$[0.91580424]@,\$[0.57265498]@,\$[1.3885428]@,\$[8.0678122]@
\$[0.62463619]@,\$[1.1237092]@,\$[1.5603899]@,\$[0.9328525]@,\$[15.918661]@
\$[2.3843096]@,\$[0.86208789]@,\$[2.3860878]@,\$[1.3770892]@,\$[195.24952]@
\$[1.4139745]@,\$[1.8523681]@,\$[2.1390109]@,\$[1.7455577]@,\$[183.32287]@
\$[2.2284744]@,\$[2.4515062]@,\$[2.5232674]@,\$[2.4116183]@,\$[770.32622]@
\$[2.3129391]@,\$[2.037772]@,\$[2.3812461]@,\$[0.96032319]@,\$[304.07561]@
\$[2.7894665]@,\$[3.1749481]@,\$[1.9819946]@,\$[2.6207353]@,\$[1141.6919]@
\$[1.361975]@,\$[1.9031997]@,\$[1.0206738]@,\$[2.4421033]@,\$[144.70055]@
\$[2.1689717]@,\$[2.1788005]@,\$[0.91330078]@,\$[2.8930689]@,\$[335.71099]@
\$[1.8044991]@,\$[1.7702804]@,\$[3.3283048]@,\$[1.021962]@,\$[499.85937]@

CH18B005

alpha = 0.13477909

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X4 X4 X2 X1 + beta_2 X2 X3 X2 X3 X2 + beta_3 X3 X1 X1 X2 X3
+ beta_4 X4 X3 X2 X3 X4
PARAMATER FOR POPULATION RANGE: beta_4
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[1.6978734]@
\$[0.069213065]@,\$[0.11919533]@,\$[0.06061038]@,\$[0.10127236]@,\$[2.6803964]@
\$[0.36016964]@,\$[0.34647381]@,\$[0.19246365]@,\$[0.17034759]@,\$[3.679164]@
\$[0.26530844]@,\$[0.37331797]@,\$[0.18728899]@,\$[0.52762792]@,\$[2.7352639]@
\$[0.23494512]@,\$[0.39611646]@,\$[0.65503323]@,\$[0.6443967]@,\$[3.1515224]@
\$[0.36424014]@,\$[0.42714671]@,\$[0.73816902]@,\$[0.93772811]@,\$[4.438339]@
\$[0.65557959]@,\$[0.626047]@,\$[0.42066679]@,\$[0.58195283]@,\$[2.6982344]@

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BT2022_qiv_22_alldata
$[0.53399708]@,$[0.36751991]@,$[1.3250689]@,$[0.88250564]@,$[4.4139701]@
$[1.1265103]@,$[0.44098194]@,$[1.5543014]@,$[1.0267379]@,$[8.6393955]@
$[1.3174661]@,$[1.2658123]@,$[1.4401527]@,$[0.51634907]@,$[14.212711]@
$[0.65247941]@,$[1.2240979]@,$[1.6212495]@,$[1.2434977]@,$[32.402151]@
$[0.91814974]@,$[0.88508429]@,$[1.7211392]@,$[1.1962823]@,$[24.441623]@
$[1.1941819]@,$[0.64189826]@,$[1.8274171]@,$[1.433513]@,$[26.492153]@
$[2.1210109]@,$[1.5946806]@,$[0.77754817]@,$[1.9431751]@,$[85.911996]@
$[2.5591259]@,$[1.1594628]@,$[0.8799118]@,$[1.469922]@,$[50.707816]@
$[1.1838989]@,$[1.0931399]@,$[1.6473626]@,$[2.3347831]@,$[94.456197]@
$[1.9833577]@,$[2.1086796]@,$[2.2422592]@,$[1.1620497]@,$[156.50628]@
$[3.2720968]@,$[3.1555768]@,$[1.9215961]@,$[3.3268046]@,$[1589.5042]@
$[1.0242089]@,$[1.343349]@,$[2.426774]@,$[1.3415916]@,$[89.789837]@
$[3.3624594]@,$[2.3021779]@,$[1.3922829]@,$[1.2180252]@,$[154.89055]@

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CH18B006
alpha = 0.12145144
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X2 X2 X1 X2 + beta_2 X2 X3 X3 X2 X2 + beta_3 X3 X1 X4 X1 X3
+ beta_4 X4 X2 X3 X3 X2
PARAMATER FOR POPULATION RANGE: beta_2
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@,$[-0.90986599]@
$[0.079559455]@,$[0.15791085]@,$[0.1745702]@,$[0.16983144]@,$[-2.400589]@
$[0.26724625]@,$[0.16914363]@,$[0.26676962]@,$[0.34249307]@,$[-0.35969432]@
$[0.40593851]@,$[0.2454207]@,$[0.28325142]@,$[0.26956747]@,$[-0.81109288]@
$[0.60399458]@,$[0.23550653]@,$[0.55845904]@,$[0.75313313]@,$[-1.3798306]@
$[0.42333557]@,$[0.30563243]@,$[0.90853161]@,$[0.76099383]@,$[2.4321245]@
$[0.4290911]@,$[0.88870662]@,$[0.30047937]@,$[0.71279931]@,$[0.17360546]@
$[0.80752502]@,$[0.618451]@,$[0.64283552]@,$[1.2099089]@,$[3.0702023]@
$[0.69033577]@,$[1.3785789]@,$[0.71998814]@,$[0.68600645]@,$[5.9819669]@
$[1.2361329]@,$[1.0334779]@,$[1.0283923]@,$[1.7719774]@,$[23.720854]@
$[0.70977018]@,$[1.4712858]@,$[1.0728565]@,$[0.85039339]@,$[17.782723]@
$[0.57634505]@,$[0.77966271]@,$[1.556998]@,$[2.0828718]@,$[22.249749]@
$[1.3979749]@,$[1.4484548]@,$[2.1885773]@,$[2.0568386]@,$[191.32334]@
$[2.1348888]@,$[1.0885372]@,$[1.99411]@,$[1.1559574]@,$[115.36571]@
$[1.0177647]@,$[2.6424948]@,$[0.8714718]@,$[1.468961]@,$[69.336752]@
$[2.994343]@,$[2.8169769]@,$[2.2534701]@,$[2.5888494]@,$[1222.3435]@
$[2.1437204]@,$[1.8969214]@,$[2.18806]@,$[3.1107488]@,$[579.14148]@
$[1.5882109]@,$[2.8855331]@,$[2.2910516]@,$[3.1864404]@,$[1007.192]@
$[2.1779702]@,$[2.2793253]@,$[1.8666507]@,$[2.3848147]@,$[442.28958]@
$[2.5299092]@,$[1.2100495]@,$[2.7848459]@,$[3.1864884]@,$[811.44248]@

```

```

CH18B010
alpha = 0.057160345
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X3 X4 X1 X3 + beta_2 X2 X2 X1 X4 X1 + beta_3 X3 X2 X3 X4 X1

```

```

BT2022_qiv_22_alldata
+ beta_4 X4 X1 X1 X2 X2
PARAMATER FOR POPULATION RANGE: beta_0
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@[2.5114104]@
$[0.1010275]@,$[0.11639866]@,$[0.1123071]@,$[0.13791312]@,$[4.1023165]@
$[0.13566084]@,$[0.37975424]@,$[0.10592969]@,$[0.25647134]@,$[2.2414985]@
$[0.15781148]@,$[0.21402079]@,$[0.22523995]@,$[0.5912267]@,$[3.4179038]@
$[0.2766074]@,$[0.26669253]@,$[0.58516678]@,$[0.69252698]@,$[1.3533308]@
$[0.73521804]@,$[0.78601255]@,$[0.86390008]@,$[0.99972693]@,$[4.5686511]@
$[0.96657372]@,$[1.1631533]@,$[0.95588535]@,$[1.1248676]@,$[8.4428865]@
$[0.76830034]@,$[1.3000836]@,$[1.0092087]@,$[1.2278755]@,$[7.6290508]@
$[1.2907357]@,$[0.55780514]@,$[1.5158423]@,$[1.0692599]@,$[16.528924]@
$[1.051541]@,$[1.1712628]@,$[1.6217539]@,$[1.2580943]@,$[23.92801]@
$[1.4148652]@,$[0.50249941]@,$[0.73644575]@,$[1.9512956]@,$[11.086145]@
$[1.9094501]@,$[1.1303834]@,$[1.1117017]@,$[1.456457]@,$[24.783031]@
$[1.1745782]@,$[1.1720829]@,$[1.8611767]@,$[1.5918191]@,$[41.338532]@
$[2.285628]@,$[0.88772811]@,$[2.1548673]@,$[2.1360059]@,$[177.87216]@
$[1.4044558]@,$[1.78129]@,$[1.3449187]@,$[1.6895765]@,$[36.207951]@
$[2.4141236]@,$[1.7249937]@,$[0.90882895]@,$[1.1122615]@,$[20.31946]@
$[2.3868681]@,$[2.0273311]@,$[3.0149681]@,$[1.9154232]@,$[457.39641]@
$[2.9048321]@,$[3.0166521]@,$[2.2868212]@,$[1.7459313]@,$[361.07141]@
$[2.5024319]@,$[3.4238904]@,$[1.2443787]@,$[1.8112567]@,$[63.642183]@
$[2.211103]@,$[1.1659452]@,$[1.5287767]@,$[2.6600688]@,$[113.71931]@

```

```

CH18B012
alpha = 0.13225865
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X1 X3 X3 X3 + beta_2 X2 X1 X3 X3 X4 + beta_3 X3 X4 X1 X3 X2
+ beta_4 X4 X3 X4 X3 X4
PARAMATER FOR POPULATION RANGE: beta_2
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@[3.8535823]@
$[0.14239805]@,$[0.1138412]@,$[0.052855335]@,$[0.15875233]@,$[2.2885504]@
$[0.13171715]@,$[0.23777247]@,$[0.39502988]@,$[0.33471052]@,$[2.1432404]@
$[0.30786016]@,$[0.29276531]@,$[0.4592486]@,$[0.50484059]@,$[2.6348616]@
$[0.25109407]@,$[0.37829464]@,$[0.20520735]@,$[0.43475925]@,$[2.7369872]@
$[0.80818808]@,$[0.53120911]@,$[0.29009168]@,$[0.48255315]@,$[1.9931629]@
$[0.72817588]@,$[0.56907224]@,$[0.40115776]@,$[0.86937411]@,$[1.426798]@
$[0.73582759]@,$[0.79675732]@,$[1.058753]@,$[0.85922734]@,$[5.9982467]@
$[0.95950433]@,$[1.4861797]@,$[1.2523646]@,$[0.47351844]@,$[8.0522606]@
$[1.6509417]@,$[1.4724537]@,$[1.3821991]@,$[1.1480883]@,$[29.465945]@
$[0.56983231]@,$[1.2521964]@,$[1.8214446]@,$[0.53070051]@,$[9.2688997]@
$[0.65614245]@,$[1.4919645]@,$[0.60996503]@,$[1.7669583]@,$[10.525386]@
$[2.1415886]@,$[0.62687856]@,$[1.6896943]@,$[2.3428172]@,$[192.38063]@
$[1.8221598]@,$[1.1327146]@,$[0.94826485]@,$[1.2577257]@,$[14.384124]@
$[1.0763713]@,$[2.5940529]@,$[1.3886981]@,$[1.5952104]@,$[42.719064]@
$[2.2347066]@,$[1.5317036]@,$[2.9389638]@,$[1.2109042]@,$[303.93493]@

```

```

BT2022_qiv_22_alldata
$[1.1337949]@,$[2.1002853]@,$[2.5712438]@,$[1.5311162]@,$[148.13405]@
$[2.9039507]@,$[1.041628]@,$[3.1768272]@,$[1.5470877]@,$[651.86205]@
$[1.2936171]@,$[0.97273017]@,$[1.8653783]@,$[0.95776792]@,$[35.624127]@
$[3.5723342]@,$[3.1360285]@,$[1.0035919]@,$[2.5263984]@,$[100.71731]@

CH18B044
alpha = 0.18369207
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X1 X1 X1 X2 + beta_2 X2 X4 X3 X1 X2 + beta_3 X3 X4 X4 X2 X4
+ beta_4 X4 X3 X2 X2 X4
PARAMATER FOR POPULATION RANGE: beta_4
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@[1.4304781]@
$[0.13481045]@,$[0.072740641]@,$[0.18816584]@,$[0.074331548]@,$[2.3662887]@
$[0.36479975]@,$[0.23040893]@,$[0.10874807]@,$[0.27807791]@,$[1.4695604]@
$[0.50397157]@,$[0.56565951]@,$[0.42249171]@,$[0.48539263]@,$[0.11787212]@
$[0.33699816]@,$[0.7864622]@,$[0.7193319]@,$[0.72026383]@,$[3.9479244]@
$[0.90837837]@,$[0.74448178]@,$[0.32372129]@,$[0.60005868]@,$[2.1042376]@
$[0.61330827]@,$[1.0330468]@,$[0.39941714]@,$[1.0187109]@,$[6.5608364]@
$[1.1584339]@,$[0.68933335]@,$[0.36878513]@,$[0.90869975]@,$[3.0773076]@
$[1.4890841]@,$[0.49920544]@,$[1.0029782]@,$[1.4799952]@,$[10.740928]@
$[1.5662894]@,$[0.61274431]@,$[1.2288455]@,$[0.60484862]@,$[5.2339311]@
$[1.6161117]@,$[1.3874373]@,$[0.55773668]@,$[1.6567264]@,$[29.671643]@
$[1.5178123]@,$[1.8615592]@,$[1.2133961]@,$[0.70919564]@,$[22.477296]@
$[2.1590747]@,$[1.4708496]@,$[0.73435334]@,$[1.7905507]@,$[65.704264]@
$[1.7601991]@,$[1.371564]@,$[1.6980166]@,$[1.894772]@,$[97.4039]@
$[0.92499069]@,$[2.6896589]@,$[2.0458626]@,$[2.0674894]@,$[348.7351]@
$[0.93812218]@,$[2.3925923]@,$[1.4659299]@,$[1.2416338]@,$[73.930208]@
$[2.7951731]@,$[2.31701]@,$[2.7975207]@,$[1.02998]@,$[245.13664]@
$[2.6859111]@,$[2.5315097]@,$[2.4485997]@,$[1.1996398]@,$[275.76343]@
$[1.8410611]@,$[3.1721994]@,$[1.1440908]@,$[2.541119]@,$[469.81469]@
$[3.7967575]@,$[1.4924418]@,$[3.0785058]@,$[2.9831087]@,$[818.94008]@

```

```

CH18B056
alpha = 0.16637182
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X3 X4 X3 X1 + beta_2 X2 X4 X1 X2 X3 + beta_3 X3 X1 X3 X1 X3
+ beta_4 X4 X1 X3 X1 X1
PARAMATER FOR POPULATION RANGE: beta_1
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@[2.2733638]@
$[0.093729464]@,$[0.15825495]@,$[0.17577576]@,$[0.10008172]@,$[3.9337377]@
$[0.38536299]@,$[0.37957725]@,$[0.33163868]@,$[0.24981362]@,$[2.2830286]@
$[0.44156453]@,$[0.43462448]@,$[0.25982511]@,$[0.57886052]@,$[3.6430362]@
$[0.57854709]@,$[0.78708645]@,$[0.58515165]@,$[0.20422272]@,$[2.5148411]@
$[0.5634296]@,$[0.83421698]@,$[0.30863677]@,$[0.92337097]@,$[2.064083]@

```

BT2022_qiv_22_alldata

\$[0.94241892]@,\$[0.32670465]@,\$[0.40893567]@,\$[1.1212619]@,\$[4.2709595]@
 \$[0.86172053]@,\$[1.2012877]@,\$[0.6616632]@,\$[1.0852913]@,\$[10.08426]@
 \$[1.3674355]@,\$[0.96267082]@,\$[0.86289488]@,\$[1.1854989]@,\$[22.127044]@
 \$[1.6816731]@,\$[1.5105995]@,\$[1.2175283]@,\$[0.63358718]@,\$[54.264239]@
 \$[0.63425007]@,\$[1.1373177]@,\$[0.59046871]@,\$[1.5121906]@,\$[7.9327236]@
 \$[0.98490652]@,\$[0.96679931]@,\$[1.3794312]@,\$[1.0478361]@,\$[29.019875]@
 \$[2.1374657]@,\$[2.0090465]@,\$[2.0044772]@,\$[1.2553789]@,\$[385.20552]@
 \$[1.007896]@,\$[2.33433326]@,\$[1.1054031]@,\$[2.448524]@,\$[93.755186]@
 \$[2.7953576]@,\$[1.2485239]@,\$[0.82135587]@,\$[0.86275437]@,\$[75.313467]@
 \$[2.3268585]@,\$[1.9472101]@,\$[2.3805844]@,\$[2.7419566]@,\$[998.97024]@
 \$[2.5030629]@,\$[2.1648363]@,\$[1.3523168]@,\$[0.86385844]@,\$[197.63872]@
 \$[2.0608254]@,\$[2.1471043]@,\$[0.95527411]@,\$[2.1437549]@,\$[164.46388]@
 \$[1.6629842]@,\$[3.5677079]@,\$[2.7839502]@,\$[2.3215256]@,\$[1127.3689]@
 \$[2.7191937]@,\$[2.4646813]@,\$[1.9396424]@,\$[2.7509379]@,\$[1070.9513]@

CH18B060

alpha = 0.05355023

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X1 X3 X4 X2 + beta_2 X2 X1 X1 X3 X2 + beta_3 X3 X4 X3 X4 X2
 + beta_4 X4 X2 X4 X3 X1
 PARAMATER FOR POPULATION RANGE: beta_4
 DATA COLUMNS X1 X2 X3 X4 Y
 \$[0]@,\$[0]@,\$[0]@,\$[0]@[5.3013417]@
 \$[0.069138577]@,\$[0.14916884]@,\$[0.19790815]@,\$[0.070289382]@,\$[6.0070807]@
 \$[0.2809992]@,\$[0.37603731]@,\$[0.12707333]@,\$[0.35044141]@,\$[2.9036845]@
 \$[0.35639274]@,\$[0.29343613]@,\$[0.51524851]@,\$[0.35028819]@,\$[4.8873205]@
 \$[0.53285633]@,\$[0.31001569]@,\$[0.7100514]@,\$[0.59402087]@,\$[5.043977]@
 \$[0.36253251]@,\$[0.82812546]@,\$[0.85448579]@,\$[0.59622849]@,\$[5.6223181]@
 \$[0.92739542]@,\$[0.57537802]@,\$[0.71584699]@,\$[0.32944534]@,\$[6.0221842]@
 \$[1.3144227]@,\$[0.67053779]@,\$[0.6188806]@,\$[0.69143213]@,\$[7.9479043]@
 \$[1.2085362]@,\$[0.57786828]@,\$[0.57169906]@,\$[1.4478323]@,\$[10.3149]@
 \$[0.48140628]@,\$[0.52117376]@,\$[0.81005813]@,\$[0.68623928]@,\$[6.0559073]@
 \$[1.6712802]@,\$[1.9400351]@,\$[1.5032706]@,\$[1.8612209]@,\$[175.9619]@
 \$[0.62596398]@,\$[1.7029756]@,\$[0.90920221]@,\$[0.83168326]@,\$[12.452779]@
 \$[1.8168076]@,\$[0.73364576]@,\$[1.9173213]@,\$[1.97564]@,\$[90.454654]@
 \$[1.6811942]@,\$[2.0805776]@,\$[1.8470543]@,\$[0.74097777]@,\$[124.04569]@
 \$[2.2096039]@,\$[1.7442367]@,\$[1.4800548]@,\$[1.4418237]@,\$[186.28445]@
 \$[0.93861659]@,\$[1.8094294]@,\$[2.4934636]@,\$[1.4211098]@,\$[107.03215]@
 \$[1.9328781]@,\$[2.8201279]@,\$[2.0605808]@,\$[2.2360607]@,\$[611.11899]@
 \$[1.3225822]@,\$[2.6165768]@,\$[2.2478543]@,\$[3.0464981]@,\$[561.88655]@
 \$[2.0660618]@,\$[2.5110807]@,\$[3.4498655]@,\$[1.8707635]@,\$[892.03541]@
 \$[2.585312]@,\$[3.5130807]@,\$[3.2361273]@,\$[1.9474875]@,\$[1929.6994]@

CH18B067

alpha = 0.1254946

MLR FIT FUNCTION

```

BT2022_qiv_22_alldata
Y = beta_0 + beta_1 X1 X3 X3 X2 X4 + beta_2 X2 X2 X3 X1 X3 + beta_3 X3 X1 X1 X4 X4
+ beta_4 X4 X3 X3 X3 X3
PARAMATER FOR POPULATION RANGE: beta_1
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@,$[2.9347954]@
$[0.18121731]@,$[0.17241594]@,$[0.17739571]@,$[0.14336729]@,$[2.9906146]@
$[0.22294157]@,$[0.11279298]@,$[0.34077255]@,$[0.17152989]@,$[4.0035919]@
$[0.20893322]@,$[0.34434853]@,$[0.1673165]@,$[0.50267767]@,$[1.0294335]@
$[0.24774819]@,$[0.66103716]@,$[0.35336428]@,$[0.29485155]@,$[2.8982422]@
$[0.3184132]@,$[0.37277906]@,$[0.29942544]@,$[0.35563199]@,$[1.7081235]@
$[0.474447904]@,$[1.0856751]@,$[1.0927728]@,$[0.67247035]@,$[6.0687733]@
$[0.86001433]@,$[1.3604651]@,$[0.43411947]@,$[0.61645432]@,$[2.3537816]@
$[1.1835982]@,$[0.67650568]@,$[0.91983999]@,$[1.1341221]@,$[2.8339621]@
$[1.0324724]@,$[0.84074025]@,$[1.0614011]@,$[0.94623139]@,$[4.6957284]@
$[1.2674637]@,$[0.64927257]@,$[0.94969575]@,$[1.0599255]@,$[2.4409629]@
$[1.2363181]@,$[1.9048678]@,$[0.71465332]@,$[1.797105]@,$[-1.5779148]@
$[0.99648067]@,$[1.9510214]@,$[1.5843475]@,$[2.0164276]@,$[38.106474]@
$[2.2846488]@,$[1.8310869]@,$[1.2875348]@,$[0.73027812]@,$[2.0571442]@
$[1.6111101]@,$[1.3763831]@,$[1.1419192]@,$[1.3059492]@,$[0.52528707]@
$[1.9924848]@,$[0.87442155]@,$[1.1151412]@,$[2.2625078]@,$[-24.9024]@
$[0.99357276]@,$[1.6569345]@,$[2.773457]@,$[3.0350587]@,$[681.16173]@
$[2.3605379]@,$[1.2428018]@,$[2.517298]@,$[2.6187307]@,$[236.86931]@
$[2.7509559]@,$[1.2641483]@,$[1.462275]@,$[1.4499592]@,$[-16.710015]@
$[3.3029442]@,$[2.7253159]@,$[2.3883002]@,$[1.2137829]@,$[74.305348]@

```

```

CH18B119
alpha = 0.16660729
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X2 X1 X2 X4 + beta_2 X2 X2 X1 X3 X2 + beta_3 X3 X3 X4 X3 X4
+ beta_4 X4 X3 X2 X4 X4
PARAMATER FOR POPULATION RANGE: beta_2
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@,$[2.6741464]@
$[0.18260448]@,$[0.10363938]@,$[0.18414497]@,$[0.088273521]@,$[1.6652327]@
$[0.26379425]@,$[0.23677523]@,$[0.11962281]@,$[0.38339896]@,$[1.6580077]@
$[0.57937679]@,$[0.40894336]@,$[0.55123073]@,$[0.53589966]@,$[3.4248465]@
$[0.75798568]@,$[0.24841396]@,$[0.34424167]@,$[0.25350114]@,$[1.8795425]@
$[0.76338693]@,$[0.31453418]@,$[0.92722746]@,$[0.47694718]@,$[2.7831699]@
$[0.32047407]@,$[1.0197237]@,$[0.56370438]@,$[0.47689566]@,$[4.5575799]@
$[0.64690114]@,$[0.97062836]@,$[1.313882]@,$[1.0480994]@,$[-8.4486738]@
$[0.69634648]@,$[0.69859414]@,$[0.67766638]@,$[0.85682114]@,$[1.409224]@
$[0.46870402]@,$[1.6249539]@,$[1.5584983]@,$[1.7386115]@,$[-62.934377]@
$[1.5806226]@,$[1.6364746]@,$[0.95736881]@,$[0.67015709]@,$[11.46536]@
$[1.9810079]@,$[1.9587285]@,$[1.3657278]@,$[2.0269247]@,$[26.775109]@
$[1.6461655]@,$[1.3254848]@,$[0.89590978]@,$[1.7383751]@,$[14.178638]@
$[0.6777918]@,$[1.4803627]@,$[1.2661236]@,$[1.1880782]@,$[-11.556502]@
$[1.0748576]@,$[2.2693107]@,$[2.2138152]@,$[2.5233727]@,$[-354.69554]@

```

BT2022_qiv_22_alldata
\$[0.96295822]@,\$[1.2156768]@,\$[2.1487335]@,\$[1.6461212]@,\$[-114.19567]@
\$[2.9411134]@,\$[3.1236462]@,\$[2.7062974]@,\$[0.92984151]@,\$[35.971965]@
\$[1.3075328]@,\$[2.4267391]@,\$[2.7078972]@,\$[2.8743731]@,\$[-808.30947]@
\$[2.5550117]@,\$[1.9198587]@,\$[2.2357253]@,\$[2.7956053]@,\$[-255.95344]@
\$[1.1888862]@,\$[2.9825066]@,\$[2.8622492]@,\$[2.5040059]@,\$[-727.22206]@

CH19B004

alpha = 0.11019269

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X1 X2 X3 X1 + beta_2 X2 X4 X3 X1 X2 + beta_3 X3 X2 X3 X4 X2
+ beta_4 X4 X4 X3 X3 X1

PARAMATER FOR POPULATION RANGE: beta_2

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[-0.62695389]@
\$[0.18150953]@,\$[0.054732085]@,\$[0.17971636]@,\$[0.18206442]@,\$[-0.33036253]@
\$[0.15476867]@,\$[0.32254694]@,\$[0.1873145]@,\$[0.26569911]@,\$[-0.33365081]@
\$[0.33400433]@,\$[0.45424548]@,\$[0.58284308]@,\$[0.50063839]@,\$[-0.44517113]@
\$[0.39414083]@,\$[0.30161399]@,\$[0.24849295]@,\$[0.56718615]@,\$[0.69750203]@
\$[0.34744462]@,\$[0.57539983]@,\$[0.69654603]@,\$[0.52400499]@,\$[1.3210081]@
\$[0.40411773]@,\$[0.99538461]@,\$[0.85699097]@,\$[0.56483867]@,\$[2.7794274]@
\$[0.96915836]@,\$[1.2144114]@,\$[1.2294285]@,\$[0.37143969]@,\$[9.271994]@
\$[1.4925856]@,\$[0.46281297]@,\$[1.1132019]@,\$[0.68183288]@,\$[7.5239307]@
\$[1.1745738]@,\$[1.5310618]@,\$[1.5901314]@,\$[1.4806401]@,\$[59.24409]@
\$[1.037272]@,\$[0.60319578]@,\$[1.310784]@,\$[1.499824]@,\$[13.648807]@
\$[1.4915803]@,\$[1.0304963]@,\$[0.73426116]@,\$[0.95900304]@,\$[12.422419]@
\$[1.6644369]@,\$[1.5347127]@,\$[0.76671655]@,\$[1.4265854]@,\$[34.330077]@
\$[2.2622318]@,\$[2.081009]@,\$[1.9998416]@,\$[1.0608443]@,\$[274.05289]@
\$[1.7068069]@,\$[1.9047092]@,\$[0.75630176]@,\$[0.88404544]@,\$[38.54822]@
\$[2.3914327]@,\$[2.8186201]@,\$[1.5925625]@,\$[2.7309538]@,\$[569.37683]@
\$[1.0456949]@,\$[2.9615801]@,\$[1.508219]@,\$[1.4270338]@,\$[140.80274]@
\$[2.3879827]@,\$[0.88973892]@,\$[1.8223793]@,\$[0.85665522]@,\$[99.349702]@
\$[1.4678568]@,\$[3.2782451]@,\$[2.2006555]@,\$[1.2328404]@,\$[353.44978]@
\$[1.8386392]@,\$[2.1095902]@,\$[2.2353928]@,\$[1.3664717]@,\$[258.16843]@

CH19B007

alpha = 0.15347322

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X4 X2 X4 X2 + beta_2 X2 X2 X2 X2 X2 + beta_3 X3 X4 X2 X2 X2
+ beta_4 X4 X2 X4 X2 X2

PARAMATER FOR POPULATION RANGE: beta_3

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[3.4809411]@
\$[0.18208612]@,\$[0.1947998]@,\$[0.15124598]@,\$[0.079622051]@,\$[6.3845792]@
\$[0.24984795]@,\$[0.3384218]@,\$[0.34396275]@,\$[0.39910697]@,\$[3.2036959]@
\$[0.2545292]@,\$[0.58088525]@,\$[0.53834087]@,\$[0.22502894]@,\$[4.315435]@
\$[0.72397747]@,\$[0.74982654]@,\$[0.5953685]@,\$[0.48342759]@,\$[3.0651662]@

BT2022_qiv_22_alldata

$\$[0.76168558]@, \$[0.42559114]@, \$[0.40248377]@, \$[0.72363013]@, \$[2.9174984]@$
 $\$[0.90267293]@, \$[0.31562595]@, \$[0.80504633]@, \$[0.90502986]@, \$[3.5862832]@$
 $\$[0.57267494]@, \$[0.9781141]@, \$[0.7080082]@, \$[0.46766069]@, \$[4.9591663]@$
 $\$[1.3679076]@, \$[1.1314528]@, \$[1.5616915]@, \$[0.99747807]@, \$[-1.7819113]@$
 $\$[1.1721043]@, \$[0.69958255]@, \$[0.64386094]@, \$[1.7724894]@, \$[0.76864667]@$
 $\$[0.7875652]@, \$[0.63209052]@, \$[0.93778709]@, \$[1.8280262]@, \$[2.2083204]@$
 $\$[1.3180483]@, \$[1.3295304]@, \$[1.7714253]@, \$[2.1258262]@, \$[-8.5505765]@$
 $\$[1.8165512]@, \$[1.1907871]@, \$[1.2926633]@, \$[1.5606085]@, \$[-8.3093726]@$
 $\$[2.168015]@, \$[1.8872441]@, \$[1.7131482]@, \$[1.6601323]@, \$[-37.193089]@$
 $\$[1.2693078]@, \$[2.3172172]@, \$[1.3767191]@, \$[2.027742]@, \$[26.620158]@$
 $\$[2.1346578]@, \$[2.4298658]@, \$[0.97327658]@, \$[1.0643482]@, \$[-40.712572]@$
 $\$[3.1667802]@, \$[1.1911053]@, \$[2.8528931]@, \$[1.0318007]@, \$[-16.437825]@$
 $\$[1.0992571]@, \$[2.0480409]@, \$[3.1099197]@, \$[2.8522717]@, \$[12.388683]@$
 $\$[1.8201454]@, \$[2.0179273]@, \$[3.4825779]@, \$[1.5800348]@, \$[-62.661859]@$
 $\$[1.7058098]@, \$[1.3267058]@, \$[3.4182843]@, \$[2.7149774]@, \$[-58.588491]@$

CH19B008

alpha = 0.185961

MLR FIT FUNCTION

$Y = \beta_0 + \beta_1 X_1 X_2 X_4 X_2 X_1 + \beta_2 X_2 X_1 X_3 X_4 X_4 + \beta_3 X_3 X_4 X_2 X_4 X_3$
 $+ \beta_4 X_4 X_3 X_4 X_3 X_3$

PARAMATER FOR POPULATION RANGE: beta_0

DATA COLUMNS X1 X2 X3 X4 Y

$\$[0]@, \$[0]@, \$[0]@, \$[0]@, \$[3.2091346]@$
 $\$[0.13330375]@, \$[0.065647282]@, \$[0.15522063]@, \$[0.082336831]@, \$[2.6153682]@$
 $\$[0.19237369]@, \$[0.16451199]@, \$[0.27426836]@, \$[0.39840324]@, \$[1.8110632]@$
 $\$[0.40376843]@, \$[0.57090435]@, \$[0.52454837]@, \$[0.21772257]@, \$[2.0392319]@$
 $\$[0.2761445]@, \$[0.54058203]@, \$[0.69945285]@, \$[0.37630213]@, \$[2.5887635]@$
 $\$[0.65547288]@, \$[0.55579277]@, \$[0.31033234]@, \$[0.76101135]@, \$[5.1253146]@$
 $\$[0.80359257]@, \$[0.52648385]@, \$[1.0284128]@, \$[1.0102707]@, \$[8.6912748]@$
 $\$[0.4246628]@, \$[1.08386]@, \$[0.93877629]@, \$[1.3313904]@, \$[12.53098]@$
 $\$[1.4843783]@, \$[0.59637919]@, \$[1.5574415]@, \$[1.2690096]@, \$[34.984252]@$
 $\$[0.59174222]@, \$[0.47126965]@, \$[1.3371337]@, \$[1.1558337]@, \$[15.524445]@$
 $\$[1.5238959]@, \$[1.5535545]@, \$[1.4125999]@, \$[0.50411682]@, \$[25.312909]@$
 $\$[1.0863436]@, \$[0.92999895]@, \$[0.74451416]@, \$[1.8778291]@, \$[25.35994]@$
 $\$[2.184074]@, \$[1.5460997]@, \$[1.3011849]@, \$[2.3677516]@, \$[273.4951]@$
 $\$[0.78486628]@, \$[2.4379038]@, \$[2.0154731]@, \$[1.5999393]@, \$[143.72976]@$
 $\$[1.8493645]@, \$[1.7445147]@, \$[1.3709924]@, \$[2.2943626]@, \$[257.0585]@$
 $\$[1.1906912]@, \$[2.1770228]@, \$[1.6016007]@, \$[2.2438049]@, \$[230.02333]@$
 $\$[1.3578145]@, \$[0.87331763]@, \$[1.6414563]@, \$[1.0385783]@, \$[33.54151]@$
 $\$[0.95857477]@, \$[3.1060597]@, \$[1.5217137]@, \$[1.5439436]@, \$[148.25446]@$
 $\$[3.4984446]@, \$[1.7666129]@, \$[1.3598117]@, \$[0.96549959]@, \$[248.49524]@$
 $\$[3.5106923]@, \$[1.9196745]@, \$[3.55883]@, \$[1.9254572]@, \$[1312.5162]@$

CH19B010

alpha = 0.071173532

BT2022_qiv_22_alldata

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X3 X4 X1 X3 + beta_2 X2 X2 X2 X2 + beta_3 X3 X4 X2 X4 X4
+ beta_4 X4 X1 X1 X3 X1

PARAMATER FOR POPULATION RANGE: beta_2

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[-0.10661096]@
\$[0.17010734]@,\$[0.095228422]@,\$[0.16419672]@,\$[0.14250731]@,\$[0.66245597]@
\$[0.36699665]@,\$[0.18991364]@,\$[0.3129631]@,\$[0.17187392]@,\$[0.15418868]@
\$[0.5657227]@,\$[0.45840363]@,\$[0.41296939]@,\$[0.24172773]@,\$[2.3598917]@
\$[0.37373743]@,\$[0.66413347]@,\$[0.73532926]@,\$[0.71847254]@,\$[0.61322024]@
\$[0.42906782]@,\$[0.55960521]@,\$[0.50506392]@,\$[0.35001668]@,\$[1.8266868]@
\$[0.92164497]@,\$[0.76843628]@,\$[1.039036]@,\$[0.55765992]@,\$[4.7909618]@
\$[1.2400814]@,\$[1.3393028]@,\$[0.90824269]@,\$[0.92756512]@,\$[24.750359]@
\$[0.85142559]@,\$[1.4531922]@,\$[0.688809]@,\$[0.93494168]@,\$[30.888232]@
\$[1.3308814]@,\$[0.79617739]@,\$[1.4416561]@,\$[1.752978]@,\$[17.248316]@
\$[1.0168117]@,\$[1.4860829]@,\$[1.744673]@,\$[1.359882]@,\$[36.340602]@
\$[0.70118904]@,\$[0.84117972]@,\$[0.68291286]@,\$[2.0068711]@,\$[-3.8313102]@
\$[2.2908772]@,\$[2.0167518]@,\$[0.6969557]@,\$[0.93099083]@,\$[180.53636]@
\$[2.0817785]@,\$[2.3706059]@,\$[1.4284899]@,\$[1.5608877]@,\$[404.2588]@
\$[1.3830158]@,\$[0.85873697]@,\$[2.7193423]@,\$[2.0510167]@,\$[46.050458]@
\$[2.3727613]@,\$[2.8915822]@,\$[1.5950027]@,\$[2.3615796]@,\$[1026.372]@
\$[1.0062871]@,\$[3.0318265]@,\$[3.0347115]@,\$[2.1387389]@,\$[1072.9534]@
\$[2.3270405]@,\$[1.3034318]@,\$[2.8310899]@,\$[2.1177001]@,\$[297.65413]@
\$[2.7605099]@,\$[1.6940237]@,\$[1.3963696]@,\$[1.6491528]@,\$[222.68032]@
\$[3.7341236]@,\$[3.2526342]@,\$[3.1556578]@,\$[3.3675983]@,\$[3216.2758]@

CH19B015

alpha = 0.13267367

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X1 X4 X1 X2 + beta_2 X2 X2 X2 X2 X2 + beta_3 X3 X4 X4 X1 X3
+ beta_4 X4 X3 X2 X3 X3

PARAMATER FOR POPULATION RANGE: beta_3

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[4.4024766]@
\$[0.091276269]@,\$[0.17384438]@,\$[0.16769958]@,\$[0.15152462]@,\$[2.7001045]@
\$[0.31308231]@,\$[0.1883649]@,\$[0.14930842]@,\$[0.1681762]@,\$[4.0607589]@
\$[0.23211273]@,\$[0.3441747]@,\$[0.5903745]@,\$[0.39101128]@,\$[5.2623197]@
\$[0.58467494]@,\$[0.51476848]@,\$[0.78491408]@,\$[0.3493647]@,\$[5.2562797]@
\$[0.69460926]@,\$[0.44099649]@,\$[0.73145845]@,\$[0.51147384]@,\$[5.1205583]@
\$[0.46996301]@,\$[0.37077275]@,\$[0.72542198]@,\$[0.56402422]@,\$[2.5681224]@
\$[0.87630548]@,\$[0.8936597]@,\$[1.0811823]@,\$[0.67651356]@,\$[8.696209]@
\$[0.41145782]@,\$[1.1297274]@,\$[0.69331043]@,\$[0.83425594]@,\$[10.355997]@
\$[1.7324642]@,\$[1.2818329]@,\$[1.4792121]@,\$[0.76719914]@,\$[34.084842]@
\$[1.1131187]@,\$[1.6452355]@,\$[1.8474466]@,\$[0.77617252]@,\$[58.683522]@
\$[0.57376924]@,\$[0.63340897]@,\$[0.70139462]@,\$[1.9825403]@,\$[8.5156022]@
\$[1.6858997]@,\$[0.72620285]@,\$[0.89949161]@,\$[2.2974394]@,\$[44.538071]@
\$[2.0812849]@,\$[1.9208985]@,\$[0.66329825]@,\$[0.72313615]@,\$[98.467709]@

```

BT2022_qiv_22_alldata
$[1.8342516]@,$[1.9089178]@,$[2.2269407]@,$[2.2295428]@,$[336.81823]@
$[1.5760823]@,$[0.77805174]@,$[2.3992951]@,$[0.77033429]@,$[38.717363]@
$[2.0327685]@,$[2.5151593]@,$[2.4877635]@,$[2.4135644]@,$[741.50289]@
$[3.2330799]@,$[1.9380525]@,$[1.8031474]@,$[1.2227091]@,$[287.70597]@
$[2.8413163]@,$[2.6215619]@,$[2.9062362]@,$[2.3956581]@,$[1266.4913]@
$[1.364602]@,$[3.1648017]@,$[1.9781955]@,$[3.1538497]@,$[1188.0686]@

```

CH19B019

alpha = 0.18703274

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X1 X3 X1 X4 + beta_2 X2 X4 X2 X2 X1 + beta_3 X3 X3 X2 X2 X2 X4
+ beta_4 X4 X3 X3 X4 X4

PARAMATER FOR POPULATION RANGE: beta_4

DATA COLUMNS X1 X2 X3 X4 Y

```

$[0]@,$[0]@,$[0]@,$[0]@,$[3.484915]@
$[0.18742512]@,$[0.15105865]@,$[0.082352203]@,$[0.1025284]@,$[3.2947576]@
$[0.20084386]@,$[0.38453326]@,$[0.17455348]@,$[0.22552078]@,$[2.4965042]@
$[0.42734832]@,$[0.16548832]@,$[0.28967781]@,$[0.54241087]@,$[2.7592064]@
$[0.57536372]@,$[0.70560099]@,$[0.26925827]@,$[0.22064158]@,$[3.1211154]@
$[0.615618]@,$[0.5560965]@,$[0.67837485]@,$[0.5538446]@,$[1.7607135]@
$[0.39040755]@,$[0.81212596]@,$[1.0132037]@,$[0.59164429]@,$[3.114453]@
$[1.3604355]@,$[0.42563817]@,$[0.35854162]@,$[0.53483882]@,$[1.6177907]@
$[1.3122692]@,$[1.4440915]@,$[1.1581801]@,$[0.90118784]@,$[-2.0900624]@
$[0.94745992]@,$[1.5637897]@,$[1.4187169]@,$[1.6702805]@,$[-6.8123537]@
$[1.4669693]@,$[0.86210897]@,$[1.2937503]@,$[1.1219371]@,$[-14.028724]@
$[1.4925613]@,$[1.0652006]@,$[1.1231805]@,$[0.60700489]@,$[-3.3010444]@
$[2.371834]@,$[1.2331206]@,$[0.7222565]@,$[1.7799516]@,$[-49.339527]@
$[0.92007094]@,$[1.9940446]@,$[1.6084619]@,$[2.3664686]@,$[-13.466424]@
$[1.1096576]@,$[1.396659]@,$[1.7968688]@,$[2.5362945]@,$[-58.044366]@
$[2.1789149]@,$[1.2078003]@,$[2.1074138]@,$[1.0769781]@,$[-76.997621]@
$[1.292434]@,$[2.4354791]@,$[2.1503166]@,$[2.4698194]@,$[-34.722871]@
$[0.99832125]@,$[1.8254931]@,$[1.9952428]@,$[1.3499213]@,$[-2.4614862]@
$[1.7319783]@,$[2.6713349]@,$[3.2849906]@,$[1.6631358]@,$[-54.631065]@
$[1.8640454]@,$[2.4245388]@,$[0.96190277]@,$[2.401116]@,$[11.651135]@

```

CH19B026

alpha = 0.15313506

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X1 X4 X4 X4 + beta_2 X2 X1 X3 X3 X4 + beta_3 X3 X1 X1 X1 X4
+ beta_4 X4 X3 X4 X1 X2

PARAMATER FOR POPULATION RANGE: beta_1

DATA COLUMNS X1 X2 X3 X4 Y

```

$[0]@,$[0]@,$[0]@,$[0]@,$[-0.5302687]@
$[0.061271806]@,$[0.16940646]@,$[0.058560828]@,$[0.068321395]@,$[-2.0165244]@
$[0.32580544]@,$[0.1846893]@,$[0.23860436]@,$[0.21150294]@,$[-2.6786474]@
$[0.56767603]@,$[0.30629971]@,$[0.53629117]@,$[0.21704545]@,$[-1.6355499]@

```

```

BT2022_qiv_22_alldata
$[0.62620936]@,$[0.34214389]@,$[0.49531977]@,$[0.34332493]@,$[-1.7465974]@
$[0.46438763]@,$[0.82218131]@,$[0.8484618]@,$[0.85194407]@,$[0.35240732]@
$[0.51381878]@,$[0.88231479]@,$[0.75211048]@,$[0.5862818]@,$[0.62480586]@
$[0.35135337]@,$[1.3763614]@,$[0.67866132]@,$[0.66492998]@,$[0.62881609]@
$[0.62569425]@,$[0.63788912]@,$[0.54073497]@,$[0.71399558]@,$[-0.048665435]@
$[0.89159935]@,$[0.4999213]@,$[1.5779539]@,$[1.1123605]@,$[8.8496765]@
$[1.5903645]@,$[0.92799881]@,$[1.8605877]@,$[1.3027799]@,$[71.508115]@
$[2.0561937]@,$[1.4633125]@,$[1.5235693]@,$[1.5433966]@,$[150.87303]@
$[1.2168148]@,$[1.424086]@,$[1.6514517]@,$[1.3580614]@,$[40.948364]@
$[2.4824093]@,$[2.148752]@,$[1.4008159]@,$[2.5746207]@,$[589.36623]@
$[2.6023291]@,$[2.5065647]@,$[0.99544274]@,$[0.72275982]@,$[68.940723]@
$[1.5290395]@,$[1.1580929]@,$[1.5125257]@,$[1.7627677]@,$[91.918032]@
$[1.808927]@,$[1.9766785]@,$[1.2798804]@,$[1.7545171]@,$[125.2894]@
$[1.1012]@,$[1.0997608]@,$[1.8892369]@,$[3.0835023]@,$[163.75121]@
$[3.3810203]@,$[3.1654901]@,$[1.3868887]@,$[1.6182255]@,$[557.66692]@
$[2.0193973]@,$[3.4577724]@,$[2.008994]@,$[2.9139615]@,$[638.47622]@

```

```

CH19B028
alpha = 0.19979618
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X2 X4 X2 X2 X3 + beta_2 X2 X4 X2 X1 X1 + beta_3 X3 X3 X4 X1 X1
+ beta_4 X4 X1 X1 X4 X2
PARAMATER FOR POPULATION RANGE: beta_0
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@[3.1475617]@
$[0.19556776]@,$[0.076049843]@,$[0.164643]@,$[0.06399446]@,$[1.8918872]@
$[0.25677382]@,$[0.39602462]@,$[0.25331354]@,$[0.12452533]@,$[0.017434776]@
$[0.45535865]@,$[0.449482]@,$[0.55141619]@,$[0.50554523]@,$[1.5665173]@
$[0.21766512]@,$[0.22468636]@,$[0.48936338]@,$[0.20912145]@,$[2.6920316]@
$[0.80970731]@,$[0.28250496]@,$[0.76714901]@,$[0.26264736]@,$[1.9887995]@
$[0.3163311]@,$[0.64273714]@,$[0.77072079]@,$[0.34853186]@,$[0.93853163]@
$[0.48495202]@,$[1.1049166]@,$[1.2906103]@,$[0.46551159]@,$[2.1805325]@
$[1.3974743]@,$[1.1773133]@,$[1.2065585]@,$[0.83664116]@,$[9.7916096]@
$[0.90896019]@,$[0.89980209]@,$[1.5049528]@,$[1.5174848]@,$[12.164782]@
$[1.2750746]@,$[1.7199589]@,$[0.53733558]@,$[1.5818359]@,$[26.482902]@
$[1.1359281]@,$[1.2318945]@,$[1.8294374]@,$[0.74036708]@,$[10.002598]@
$[1.842939]@,$[2.1769361]@,$[1.8824546]@,$[1.5779917]@,$[93.099189]@
$[1.0027502]@,$[2.4126397]@,$[0.97197949]@,$[0.81240043]@,$[7.0995093]@
$[2.2045915]@,$[0.81964089]@,$[2.090137]@,$[0.78143368]@,$[33.965009]@
$[1.0060928]@,$[0.8045442]@,$[2.5440639]@,$[1.1435727]@,$[18.810746]@
$[2.0074305]@,$[1.6154248]@,$[1.0533917]@,$[2.884712]@,$[235.92213]@
$[2.7358528]@,$[3.1095648]@,$[2.2661271]@,$[1.0958759]@,$[124.47234]@
$[2.8713367]@,$[2.5513233]@,$[2.7301472]@,$[1.0205283]@,$[150.74732]@
$[3.6591003]@,$[1.7869181]@,$[1.6403946]@,$[3.2668864]@,$[1179.376]@

```

CH19B034

BT2022_qiv_22_alldata

```

alpha = 0.13196679
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X4 X4 X4 X4 + beta_2 X2 X3 X4 X3 X4 + beta_3 X3 X1 X3 X2 X3
+ beta_4 X4 X4 X1 X3 X1
PARAMATER FOR POPULATION RANGE: beta_2
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@,$[-2.0484449]@
$[0.18087232]@,$[0.093694936]@,$[0.1153063]@,$[0.17810924]@,$[-0.054843293]@
$[0.26781322]@,$[0.38426419]@,$[0.28193511]@,$[0.1867358]@,$[0.0042655188]@
$[0.43583289]@,$[0.54702067]@,$[0.4474833]@,$[0.50001445]@,$[-2.0598424]@
$[0.3270389]@,$[0.72688088]@,$[0.40773909]@,$[0.36740984]@,$[-1.3863526]@
$[0.89163811]@,$[0.51783547]@,$[0.99170464]@,$[0.41409873]@,$[1.8709685]@
$[0.52608666]@,$[0.40393527]@,$[0.9402194]@,$[0.49483944]@,$[0.91099712]@
$[0.79490744]@,$[1.1390811]@,$[0.95064956]@,$[1.0684677]@,$[4.0480665]@
$[1.0199962]@,$[1.2458973]@,$[1.0362049]@,$[0.82582466]@,$[8.6902426]@
$[1.1028565]@,$[1.7050089]@,$[1.4696506]@,$[0.94298968]@,$[35.693751]@
$[1.8488231]@,$[1.6461141]@,$[1.9527531]@,$[1.4834968]@,$[159.49856]@
$[1.0555972]@,$[0.64640547]@,$[0.84017973]@,$[0.90575795]@,$[2.080846]@
$[2.2573182]@,$[1.922537]@,$[0.62009717]@,$[1.6903756]@,$[12.675687]@
$[2.5410678]@,$[1.2767005]@,$[2.4940954]@,$[1.9322346]@,$[413.92395]@
$[2.3789645]@,$[2.6971387]@,$[1.9367697]@,$[1.609525]@,$[323.87001]@
$[2.761264]@,$[1.6589461]@,$[2.3753152]@,$[1.1752773]@,$[351.70276]@
$[1.7875838]@,$[2.4917347]@,$[1.9865337]@,$[1.5672459]@,$[241.36801]@
$[1.4500646]@,$[3.3404172]@,$[1.8514921]@,$[1.6672388]@,$[228.85147]@
$[2.4942696]@,$[2.3234829]@,$[3.2048681]@,$[1.9431768]@,$[1201.7564]@
$[1.545361]@,$[2.9308646]@,$[2.333038]@,$[1.8130087]@,$[410.66036]@

```

CH19B049

```

alpha = 0.07296251
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X1 X1 X3 X1 + beta_2 X2 X4 X3 X1 X3 + beta_3 X3 X3 X4 X2 X4
+ beta_4 X4 X2 X3 X3 X3
PARAMATER FOR POPULATION RANGE: beta_0
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@,$[2.8374876]@
$[0.18469315]@,$[0.18445388]@,$[0.11099276]@,$[0.14175248]@,$[3.7066043]@
$[0.23686438]@,$[0.32720378]@,$[0.16243727]@,$[0.11618571]@,$[3.308282]@
$[0.26112395]@,$[0.33181481]@,$[0.49512596]@,$[0.472169]@,$[5.1183798]@
$[0.3933626]@,$[0.63410877]@,$[0.76036685]@,$[0.58328502]@,$[3.5343464]@
$[0.68901098]@,$[0.75325811]@,$[0.59684284]@,$[0.71877694]@,$[3.9426391]@
$[1.0685387]@,$[0.60637956]@,$[0.62063283]@,$[1.1801739]@,$[5.9250104]@
$[1.243921]@,$[0.37774785]@,$[1.0268631]@,$[1.0271168]@,$[7.2673179]@
$[0.90206753]@,$[0.75804309]@,$[1.3320751]@,$[1.4853406]@,$[21.657297]@
$[1.0967299]@,$[1.0730258]@,$[0.61162262]@,$[1.2514451]@,$[7.9863987]@
$[1.0535698]@,$[1.7503044]@,$[0.98750599]@,$[0.64709599]@,$[8.8319371]@
$[1.9433249]@,$[1.9898724]@,$[1.5803931]@,$[1.2665263]@,$[47.673006]@
$[0.81924278]@,$[1.1768399]@,$[1.7174199]@,$[2.1545472]@,$[107.26679]@

```

```

BT2022_qiv_22_alldata
$[1.7800622]@,$[1.8084484]@,$[1.4320175]@,$[1.8585002]@,$[71.804559]@
$[1.3503445]@,$[2.5085989]@,$[1.7388355]@,$[2.5867431]@,$[299.00357]@
$[1.4773877]@,$[2.1288439]@,$[2.2928159]@,$[1.0086903]@,$[93.265577]@
$[1.6580714]@,$[2.1241023]@,$[2.5189029]@,$[1.580357]@,$[240.50442]@
$[1.8148894]@,$[1.7543359]@,$[1.9920532]@,$[0.88108607]@,$[39.883633]@
$[2.5589189]@,$[2.3116946]@,$[2.3965203]@,$[3.0875557]@,$[699.29965]@
$[2.4879188]@,$[1.4159612]@,$[2.6750526]@,$[2.8012558]@,$[470.72126]@
```

CH19B051

```

alpha = 0.13577533
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X3 X4 X1 X1 + beta_2 X2 X2 X3 X1 X3 + beta_3 X3 X1 X4 X3 X3
+ beta_4 X4 X4 X4 X2 X4
PARAMATER FOR POPULATION RANGE: beta_2
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@,$[2.6225075]@
$[0.07137692]@,$[0.15151415]@,$[0.14654058]@,$[0.17643899]@,$[-0.54727375]@
$[0.11606455]@,$[0.28173731]@,$[0.3976392]@,$[0.20352954]@,$[0.82267602]@
$[0.53026598]@,$[0.50546886]@,$[0.59205396]@,$[0.43990322]@,$[-0.17119016]@
$[0.29353221]@,$[0.4987871]@,$[0.38155035]@,$[0.4755303]@,$[1.6970829]@
$[0.81448171]@,$[0.52343913]@,$[0.43693571]@,$[0.78040296]@,$[3.3653743]@
$[0.74357911]@,$[0.65787579]@,$[0.36582251]@,$[0.35159894]@,$[1.5261071]@
$[0.7317961]@,$[1.380542]@,$[1.2983656]@,$[1.1148199]@,$[20.093596]@
$[1.5252111]@,$[0.67309305]@,$[0.65079984]@,$[1.2622005]@,$[12.560391]@
$[0.86612878]@,$[1.5032467]@,$[1.0780777]@,$[1.0873814]@,$[15.970979]@
$[1.874824]@,$[1.6543094]@,$[0.5359601]@,$[0.70216385]@,$[4.3695914]@
$[1.7170028]@,$[0.78728923]@,$[1.1744051]@,$[0.63902351]@,$[6.97678]@
$[2.0690655]@,$[1.4990207]@,$[1.3823731]@,$[1.6828856]@,$[103.55727]@
$[0.83413883]@,$[2.5616973]@,$[1.1228039]@,$[0.92818957]@,$[11.40488]@
$[0.7109314]@,$[1.1381833]@,$[1.6339274]@,$[2.7902586]@,$[463.26583]@
$[2.2431665]@,$[2.0128244]@,$[1.346545]@,$[2.5054096]@,$[533.6368]@
$[2.248966]@,$[2.2199101]@,$[0.81832712]@,$[3.1246166]@,$[1328.3024]@
$[1.7697246]@,$[2.4248912]@,$[1.1963955]@,$[1.1096891]@,$[26.524993]@
$[1.9595788]@,$[2.1484282]@,$[1.3637757]@,$[1.407246]@,$[68.086246]@
$[2.1129544]@,$[3.0210194]@,$[1.0354016]@,$[1.9345861]@,$[268.73873]@
```

CH19B052

```

alpha = 0.063634796
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X2 X4 X1 X1 + beta_2 X2 X3 X2 X4 X4 + beta_3 X3 X4 X3 X2 X1
+ beta_4 X4 X2 X2 X2 X3
PARAMATER FOR POPULATION RANGE: beta_0
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@,$[0.3808987]@
$[0.17525198]@,$[0.15915379]@,$[0.078899261]@,$[0.060926155]@,$[1.6974836]@
$[0.28622004]@,$[0.15992402]@,$[0.27805318]@,$[0.21304642]@,$[-0.25359546]@
```

BT2022_qiv_22_alldata

$\$[0.45740096]@, \$[0.23367475]@, \$[0.42508431]@, \$[0.41129681]@, \$[0.14761925]@$
 $\$[0.33962593]@, \$[0.46688295]@, \$[0.4554015]@, \$[0.45790026]@, \$[-0.40349351]@$
 $\$[0.9073332]@, \$[0.59830498]@, \$[0.75364009]@, \$[0.26665466]@, \$[1.183381]@$
 $\$[0.9790671]@, \$[0.47734504]@, \$[1.065196]@, \$[1.1825905]@, \$[2.0661165]@$
 $\$[0.53365676]@, \$[0.92242895]@, \$[0.69878046]@, \$[1.2741278]@, \$[5.4139132]@$
 $\$[1.2205385]@, \$[1.3099253]@, \$[1.2402893]@, \$[0.99578049]@, \$[8.7341531]@$
 $\$[1.4627749]@, \$[1.5032249]@, \$[1.108813]@, \$[0.8490872]@, \$[4.7623057]@$
 $\$[0.97689901]@, \$[1.1171666]@, \$[0.5627876]@, \$[1.7585178]@, \$[5.3295903]@$
 $\$[2.1090951]@, \$[1.3222573]@, \$[2.1679637]@, \$[0.67601674]@, \$[4.3700915]@$
 $\$[1.1429253]@, \$[1.2360715]@, \$[2.1744759]@, \$[1.185507]@, \$[32.992374]@$
 $\$[1.6909003]@, \$[2.4732021]@, \$[1.5644662]@, \$[2.465567]@, \$[252.75546]@$
 $\$[1.4608445]@, \$[1.0612866]@, \$[0.93402923]@, \$[1.4069949]@, \$[0.035848458]@$
 $\$[1.946654]@, \$[0.88941421]@, \$[2.0762216]@, \$[2.9359807]@, \$[47.767316]@$
 $\$[2.672331]@, \$[2.5431194]@, \$[3.1587449]@, \$[1.6027995]@, \$[291.33193]@$
 $\$[0.97864526]@, \$[1.6637267]@, \$[1.4471283]@, \$[1.5478389]@, \$[52.961377]@$
 $\$[3.0561439]@, \$[2.2723145]@, \$[2.4528807]@, \$[1.4774192]@, \$[16.152095]@$
 $\$[1.7007112]@, \$[2.0788713]@, \$[3.0726481]@, \$[1.4469153]@, \$[198.78825]@$

CH19B053

alpha = 0.10022741
 MLR FIT FUNCTION
 $Y = \beta_0 + \beta_1 X_1 X_4 X_4 X_1 X_3 + \beta_2 X_2 X_3 X_2 X_3 X_3 + \beta_3 X_3 X_1 X_2 X_3 X_3$
 $+ \beta_4 X_4 X_1 X_1 X_1 X_4$
 PARAMATER FOR POPULATION RANGE: beta_1
 DATA COLUMNS X1 X2 X3 X4 Y
 $\$[0]@, \$[0]@, \$[0]@, \$[0]@, \$[1.1512685]@$
 $\$[0.19198719]@, \$[0.11543692]@, \$[0.17306081]@, \$[0.16683591]@, \$[0.76686656]@$
 $\$[0.16923411]@, \$[0.14991606]@, \$[0.35862995]@, \$[0.1912375]@, \$[0.59815443]@$
 $\$[0.54081674]@, \$[0.23082885]@, \$[0.35660456]@, \$[0.45382901]@, \$[2.3126709]@$
 $\$[0.24062695]@, \$[0.22353271]@, \$[0.57246536]@, \$[0.57540064]@, \$[0.98059447]@$
 $\$[0.75164526]@, \$[0.90698496]@, \$[0.78232168]@, \$[0.5091484]@, \$[0.79829752]@$
 $\$[0.7771889]@, \$[0.33848192]@, \$[1.0851492]@, \$[0.39367901]@, \$[0.5576447]@$
 $\$[0.45124038]@, \$[0.67413759]@, \$[0.59713873]@, \$[1.3970539]@, \$[2.887485]@$
 $\$[1.4603229]@, \$[0.56361257]@, \$[0.44325465]@, \$[0.8102772]@, \$[1.3607237]@$
 $\$[0.79985348]@, \$[0.62609338]@, \$[0.60136931]@, \$[1.3272159]@, \$[6.6251093]@$
 $\$[1.217745]@, \$[1.7810694]@, \$[1.1977516]@, \$[0.54594814]@, \$[1.5872689]@$
 $\$[1.0274078]@, \$[2.1720323]@, \$[0.63622539]@, \$[1.7175144]@, \$[8.9671304]@$
 $\$[0.89704486]@, \$[0.87130821]@, \$[1.0446165]@, \$[1.6520999]@, \$[14.225528]@$
 $\$[0.92763739]@, \$[1.1776949]@, \$[1.5455511]@, \$[2.1207382]@, \$[37.227489]@$
 $\$[2.2199288]@, \$[0.9975234]@, \$[1.051949]@, \$[1.1264027]@, \$[32.057537]@$
 $\$[2.397236]@, \$[2.3749595]@, \$[1.9608237]@, \$[1.0492896]@, \$[96.491075]@$
 $\$[1.9576796]@, \$[2.1716845]@, \$[2.464708]@, \$[1.9766812]@, \$[248.18314]@$
 $\$[2.4129714]@, \$[1.8732771]@, \$[3.3435049]@, \$[0.97769876]@, \$[293.76407]@$
 $\$[3.5131034]@, \$[3.508974]@, \$[2.5341167]@, \$[1.7143747]@, \$[614.67286]@$
 $\$[2.4075481]@, \$[2.8215577]@, \$[1.5442645]@, \$[1.223677]@, \$[75.538104]@$

BT2022_qiv_22_alldata

CH19B055
alpha = 0.062337044
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X4 X2 X1 X3 + beta_2 X2 X3 X4 X4 X1 + beta_3 X3 X4 X3 X1 X1
+ beta_4 X4 X4 X1 X4 X3
PARAMATER FOR POPULATION RANGE: beta_3
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@[0.7306525]@
\$[0.066225819]@,\$[0.060847033]@,\$[0.12531475]@,\$[0.07519588]@,\$[-1.001085]@
\$[0.20624618]@,\$[0.31662707]@,\$[0.38648686]@,\$[0.14079431]@,\$[-4.268349]@
\$[0.17189254]@,\$[0.54904628]@,\$[0.34039319]@,\$[0.42985422]@,\$[0.46789118]@
\$[0.2230036]@,\$[0.2665899]@,\$[0.66247451]@,\$[0.48668349]@,\$[-0.95302916]@
\$[0.62412024]@,\$[0.40376931]@,\$[0.33538013]@,\$[0.33885899]@,\$[-1.6190107]@
\$[0.49919605]@,\$[0.89869516]@,\$[0.75461144]@,\$[0.84659924]@,\$[1.4280981]@
\$[0.88210952]@,\$[0.83135848]@,\$[0.36872116]@,\$[1.0700944]@,\$[-0.6246905]@
\$[0.53927875]@,\$[1.3640151]@,\$[1.1349257]@,\$[1.0102528]@,\$[4.990335]@
\$[1.1005657]@,\$[1.2869193]@,\$[1.1944066]@,\$[1.4761258]@,\$[24.729994]@
\$[0.72876939]@,\$[0.68116336]@,\$[1.1172735]@,\$[1.7903926]@,\$[3.8286135]@
\$[0.72981513]@,\$[1.0728019]@,\$[0.56016155]@,\$[1.6893189]@,\$[2.2121336]@
\$[2.320208]@,\$[0.89798418]@,\$[1.7490498]@,\$[1.412634]@,\$[125.61246]@
\$[1.6815931]@,\$[2.5658743]@,\$[2.0196305]@,\$[2.4923636]@,\$[357.35117]@
\$[1.9172825]@,\$[1.3368218]@,\$[2.1128904]@,\$[0.89792022]@,\$[87.576749]@
\$[1.3929954]@,\$[1.9439069]@,\$[1.7199179]@,\$[2.8850791]@,\$[187.81874]@
\$[1.0086665]@,\$[1.2397605]@,\$[1.3493884]@,\$[2.701523]@,\$[39.985607]@
\$[1.0541278]@,\$[2.9593373]@,\$[1.9101626]@,\$[2.8412858]@,\$[241.41543]@
\$[3.4200808]@,\$[0.90796558]@,\$[0.99655996]@,\$[1.1505799]@,\$[82.464966]@
\$[2.882153]@,\$[2.850421]@,\$[3.1383823]@,\$[2.8312219]@,\$[1946.8633]@

CH19B056
alpha = 0.069647941
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X2 X2 X2 X1 + beta_2 X2 X4 X2 X1 X2 + beta_3 X3 X2 X3 X1 X3
+ beta_4 X4 X1 X3 X4 X3
PARAMATER FOR POPULATION RANGE: beta_3
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@[1.1838511]@
\$[0.19499788]@,\$[0.19493755]@,\$[0.13937863]@,\$[0.10608472]@,\$[1.3289355]@
\$[0.12021765]@,\$[0.12060396]@,\$[0.14864621]@,\$[0.18642295]@,\$[1.7427649]@
\$[0.34444685]@,\$[0.22457718]@,\$[0.54273247]@,\$[0.3104257]@,\$[2.2374939]@
\$[0.59382591]@,\$[0.75543612]@,\$[0.54913022]@,\$[0.27667998]@,\$[3.3357517]@
\$[0.30329299]@,\$[0.55656675]@,\$[0.98568474]@,\$[0.54075473]@,\$[3.4697011]@
\$[1.0821647]@,\$[0.74487357]@,\$[1.1936306]@,\$[0.72253385]@,\$[9.2405156]@
\$[0.82029497]@,\$[0.90261284]@,\$[0.89770695]@,\$[0.55122718]@,\$[7.4202797]@
\$[1.4622332]@,\$[1.1763165]@,\$[1.1935624]@,\$[1.0784262]@,\$[29.420272]@
\$[1.1114787]@,\$[1.1378502]@,\$[1.6938687]@,\$[0.74791789]@,\$[27.130439]@
\$[0.66990809]@,\$[0.99808471]@,\$[1.8157127]@,\$[1.5025132]@,\$[27.878704]@
\$[0.72434816]@,\$[1.4153652]@,\$[1.7762238]@,\$[1.4067661]@,\$[34.002909]@

```

BT2022_qiv_22_alldata
$[1.4753281]@,$[1.6232204]@,$[0.94736538]@,$[1.7339195]@,$[52.728373]@
$[1.2880453]@,$[1.4694504]@,$[2.077231]@,$[1.673487]@,$[105.41941]@
$[0.72384196]@,$[1.2721437]@,$[2.3653737]@,$[1.8171207]@,$[69.88596]@
$[2.740677]@,$[1.8830223]@,$[2.0539973]@,$[2.817067]@,$[530.7731]@
$[1.7563365]@,$[1.8890989]@,$[2.6333201]@,$[1.9533959]@,$[354.24622]@
$[3.2293255]@,$[3.2145309]@,$[3.3243126]@,$[1.7862212]@,$[2522.5442]@
$[1.099282]@,$[3.0201144]@,$[2.2349081]@,$[2.3121507]@,$[307.26343]@
$[3.7053973]@,$[2.0274214]@,$[3.797644]@,$[1.6560621]@,$[1843.336]@

```

CH19B057

```

alpha = 0.098709173
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X2 X3 X4 X1 + beta_2 X2 X3 X1 X3 X4 + beta_3 X3 X2 X3 X1 X1
+ beta_4 X4 X2 X2 X1 X4
PARAMATER FOR POPULATION RANGE: beta_0
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@,$[-0.27134022]@
$[0.051669197]@,$[0.090600489]@,$[0.12393375]@,$[0.1119936]@,$[1.3840092]@
$[0.18606372]@,$[0.3188353]@,$[0.28478013]@,$[0.2290263]@,$[0.91291514]@
$[0.27732235]@,$[0.22118836]@,$[0.30493255]@,$[0.4186536]@,$[2.0058528]@
$[0.50000822]@,$[0.21080793]@,$[0.38102765]@,$[0.27401587]@,$[1.6237012]@
$[0.89824541]@,$[0.96394438]@,$[0.4180683]@,$[0.37295568]@,$[2.1674568]@
$[0.57099984]@,$[0.86570304]@,$[0.94516093]@,$[0.4721922]@,$[2.9413904]@
$[1.1788233]@,$[0.63682835]@,$[1.1294384]@,$[1.3930415]@,$[4.8260757]@
$[0.57147466]@,$[0.82408748]@,$[0.67423838]@,$[0.67555101]@,$[2.5361577]@
$[1.1760665]@,$[1.7740835]@,$[1.0883492]@,$[1.4692206]@,$[18.236773]@
$[1.4707399]@,$[0.58502938]@,$[0.77136484]@,$[1.3565482]@,$[4.03541]@
$[1.0518135]@,$[1.8502383]@,$[0.63616244]@,$[1.2909278]@,$[10.708808]@
$[1.5120881]@,$[1.6808237]@,$[1.4655962]@,$[0.99891154]@,$[15.727137]@
$[0.79475308]@,$[0.70800969]@,$[1.5197184]@,$[2.1177591]@,$[8.1518958]@
$[1.3009623]@,$[1.6956255]@,$[2.1884216]@,$[1.2277706]@,$[25.964965]@
$[1.521991]@,$[2.6170233]@,$[2.6317614]@,$[1.766295]@,$[119.69271]@
$[0.81089677]@,$[1.7473309]@,$[1.2947834]@,$[2.6531708]@,$[36.939545]@
$[1.6648218]@,$[0.93215925]@,$[2.9213775]@,$[3.039172]@,$[94.978315]@
$[1.0401038]@,$[1.0810828]@,$[2.9875792]@,$[3.0210056]@,$[71.059895]@
$[2.524361]@,$[3.7452092]@,$[2.1612261]@,$[1.8341934]@,$[300.91628]@

```

CH19B059

```

alpha = 0.17587054
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X1 X2 X2 X2 + beta_2 X2 X2 X3 X2 X4 + beta_3 X3 X2 X3 X4 X2
+ beta_4 X4 X4 X4 X2 X3
PARAMATER FOR POPULATION RANGE: beta_4
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@,$[7.8561607]@
$[0.16028844]@,$[0.098768226]@,$[0.17679741]@,$[0.051718905]@,$[7.547681]@

```

```

BT2022_qiv_22_alldata
$[0.34057252]@,$[0.34568217]@,$[0.29706806]@,$[0.36521117]@,$[5.3395657]@
$[0.4704681]@,$[0.53387388]@,$[0.22596486]@,$[0.4124082]@,$[6.364593]@
$[0.6723243]@,$[0.21954971]@,$[0.23218203]@,$[0.4892515]@,$[4.5493411]@
$[0.88145284]@,$[0.49489835]@,$[0.42564524]@,$[0.42956958]@,$[6.8277341]@
$[1.1968867]@,$[0.37171518]@,$[1.0910166]@,$[0.34711352]@,$[7.30995]@
$[1.1103399]@,$[0.37968632]@,$[0.41221706]@,$[1.1191595]@,$[6.0064385]@
$[1.5974311]@,$[1.3515223]@,$[1.4580912]@,$[0.82823031]@,$[35.46823]@
$[1.3071251]@,$[1.4819946]@,$[1.2558117]@,$[1.3399866]@,$[43.417253]@
$[1.2650125]@,$[1.8857688]@,$[1.0659674]@,$[1.2616595]@,$[58.650023]@
$[2.1677336]@,$[1.691597]@,$[2.1159642]@,$[1.7501403]@,$[175.0805]@
$[1.8736415]@,$[1.8181378]@,$[1.8451758]@,$[1.2439973]@,$[121.44123]@
$[1.7214818]@,$[2.5446008]@,$[1.6721281]@,$[0.90659407]@,$[190.31723]@
$[2.2130198]@,$[1.1754133]@,$[1.4297266]@,$[1.1581932]@,$[39.553013]@
$[0.90033484]@,$[2.5154053]@,$[2.6935629]@,$[2.9574831]@,$[832.52706]@
$[1.9930401]@,$[1.8540955]@,$[2.2867035]@,$[1.9489486]@,$[249.31818]@
$[1.1054237]@,$[1.533628]@,$[1.1716046]@,$[1.8653464]@,$[56.08195]@
$[3.4881942]@,$[3.1715936]@,$[3.4370436]@,$[2.966995]@,$[2718.108]@
$[2.8458737]@,$[1.1168939]@,$[3.0021511]@,$[1.4481087]@,$[112.05082]@

```

```

CH19B064
alpha = 0.08697694
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X2 X3 X2 X2 + beta_2 X2 X3 X1 X4 X3 + beta_3 X3 X3 X2 X3 X3
+ beta_4 X4 X3 X3 X3 X2
PARAMATER FOR POPULATION RANGE: beta_1
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@,$[-2.1729251]@
$[0.18101848]@,$[0.1913451]@,$[0.11495314]@,$[0.09998173]@,$[-0.92401654]@
$[0.26447178]@,$[0.27904146]@,$[0.39904916]@,$[0.21334697]@,$[-0.036059712]@
$[0.37134737]@,$[0.47857058]@,$[0.56303098]@,$[0.36715231]@,$[-0.116728]@
$[0.38655274]@,$[0.68203276]@,$[0.77184773]@,$[0.76973025]@,$[3.4386816]@
$[0.73334301]@,$[0.39972159]@,$[0.59840231]@,$[0.80670662]@,$[-0.79767657]@
$[0.5198791]@,$[1.1828443]@,$[0.54966016]@,$[0.49361814]@,$[1.9830631]@
$[0.60160933]@,$[0.57455026]@,$[0.40033193]@,$[0.67921646]@,$[0.7307384]@
$[0.56332031]@,$[0.71197276]@,$[1.4741461]@,$[0.8773164]@,$[35.869203]@
$[0.57633512]@,$[1.7065156]@,$[0.67582859]@,$[1.0158221]@,$[12.504403]@
$[1.4868424]@,$[1.112974]@,$[1.1720967]@,$[1.4858113]@,$[49.848877]@
$[1.5342574]@,$[0.75137919]@,$[1.0944954]@,$[1.5064432]@,$[24.155261]@
$[2.1854395]@,$[1.0669896]@,$[0.81855265]@,$[0.73768482]@,$[18.084569]@
$[1.4783689]@,$[1.7812549]@,$[2.54595]@,$[2.2765268]@,$[1065.1741]@
$[2.2780241]@,$[2.3827707]@,$[0.93676026]@,$[2.030437]@,$[168.4911]@
$[2.0135729]@,$[1.6880873]@,$[1.2680373]@,$[1.4604839]@,$[125.28583]@
$[2.395166]@,$[1.0247909]@,$[2.8896228]@,$[2.8301771]@,$[1086.4278]@
$[1.9439768]@,$[0.87088568]@,$[2.3132171]@,$[2.9387924]@,$[441.65181]@
$[1.9670874]@,$[1.911256]@,$[2.948809]@,$[1.34108]@,$[1607.9026]@
$[1.805715]@,$[1.575956]@,$[1.3341205]@,$[3.7650615]@,$[210.39289]@

```

BT2022_qiv_22_alldata

CH19B068
alpha = 0.1185891
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X2 X3 X1 X1 + beta_2 X2 X4 X2 X3 X1 + beta_3 X3 X4 X3 X1 X2
+ beta_4 X4 X1 X1 X4 X4
PARAMATER FOR POPULATION RANGE: beta_0
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[6.5065087]@
\$[0.17828438]@,\$[0.15801023]@,\$[0.084896374]@,\$[0.14168726]@,\$[6.4244503]@
\$[0.33222796]@,\$[0.11430748]@,\$[0.38672578]@,\$[0.38996099]@,\$[6.9291712]@
\$[0.21326169]@,\$[0.23689173]@,\$[0.31690274]@,\$[0.51917661]@,\$[4.3420961]@
\$[0.289907]@,\$[0.20742271]@,\$[0.52637417]@,\$[0.72971977]@,\$[4.2514188]@
\$[0.46609012]@,\$[0.92140498]@,\$[0.75979125]@,\$[0.39073893]@,\$[6.070251]@
\$[0.60270678]@,\$[0.46550192]@,\$[0.94053403]@,\$[0.98105553]@,\$[2.9259632]@
\$[0.4631575]@,\$[0.61708439]@,\$[1.2363175]@,\$[0.72201144]@,\$[5.6661606]@
\$[1.5323594]@,\$[0.47311015]@,\$[1.2044844]@,\$[0.71587258]@,\$[11.748432]@
\$[1.4225445]@,\$[0.50979353]@,\$[1.4597117]@,\$[1.0305283]@,\$[8.688073]@
\$[1.5878548]@,\$[0.65776858]@,\$[1.4824148]@,\$[1.1431755]@,\$[13.893393]@
\$[1.6026699]@,\$[1.6706702]@,\$[0.87522981]@,\$[1.2445617]@,\$[22.738058]@
\$[1.0157824]@,\$[1.3202925]@,\$[1.1497724]@,\$[0.61214422]@,\$[12.518152]@
\$[0.86319169]@,\$[1.189013]@,\$[0.85970812]@,\$[1.0869169]@,\$[7.7086064]@
\$[1.0972725]@,\$[1.2610998]@,\$[0.73594292]@,\$[0.93859931]@,\$[7.383828]@
\$[2.9291394]@,\$[2.5371506]@,\$[2.5127682]@,\$[0.87682964]@,\$[450.55163]@
\$[1.1454407]@,\$[1.2047575]@,\$[0.83990276]@,\$[2.7275623]@,\$[-7.9231461]@
\$[1.764836]@,\$[2.0248545]@,\$[2.8261767]@,\$[1.8616025]@,\$[139.64188]@
\$[1.2175481]@,\$[2.4669076]@,\$[0.92555826]@,\$[2.7660716]@,\$[19.557017]@
\$[2.5733401]@,\$[1.7309998]@,\$[3.0778455]@,\$[2.6199946]@,\$[250.08339]@

CH19B071
alpha = 0.075107049
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X4 X3 X2 X3 + beta_2 X2 X1 X3 X1 X1 + beta_3 X3 X3 X1 X1 X1
+ beta_4 X4 X4 X1 X4 X2
PARAMATER FOR POPULATION RANGE: beta_2
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[4.7283313]@
\$[0.092134425]@,\$[0.092140426]@,\$[0.082756909]@,\$[0.058678428]@,\$[5.8999682]@
\$[0.1632469]@,\$[0.34253788]@,\$[0.22594872]@,\$[0.25095419]@,\$[5.7883735]@
\$[0.23873979]@,\$[0.49619247]@,\$[0.24273899]@,\$[0.18106361]@,\$[5.8857625]@
\$[0.47379572]@,\$[0.37303049]@,\$[0.62044075]@,\$[0.77151399]@,\$[6.2896849]@
\$[0.78849935]@,\$[0.79714914]@,\$[0.6054455]@,\$[0.39140579]@,\$[7.3890004]@
\$[0.35506975]@,\$[1.185991]@,\$[0.72610108]@,\$[1.1172129]@,\$[8.730114]@
\$[1.2849494]@,\$[0.38900911]@,\$[1.3506559]@,\$[0.84082062]@,\$[16.162062]@
\$[0.77564857]@,\$[0.92935888]@,\$[0.73951174]@,\$[0.95296751]@,\$[9.8680004]@
\$[0.71230292]@,\$[1.0255753]@,\$[1.0192162]@,\$[0.59107853]@,\$[7.785941]@
\$[1.8403945]@,\$[1.5170968]@,\$[1.5144874]@,\$[1.6787987]@,\$[116.45841]@

BT2022_qiv_22_alldata

\$[1.1063782]@,\$[1.377219]@,\$[1.255065]@,\$[1.6154385]@,\$[44.722608]@
 \$[1.0856377]@,\$[1.6696625]@,\$[1.7808355]@,\$[2.3385868]@,\$[134.93271]@
 \$[1.3646875]@,\$[2.5441059]@,\$[2.0731276]@,\$[1.2986069]@,\$[101.67169]@
 \$[2.1114063]@,\$[1.3750764]@,\$[1.6058704]@,\$[1.5793235]@,\$[132.46358]@
 \$[1.3616945]@,\$[2.4410032]@,\$[2.2795385]@,\$[2.714716]@,\$[393.83972]@
 \$[3.0362998]@,\$[2.5503476]@,\$[2.9177412]@,\$[1.9536263]@,\$[1072.6034]@
 \$[1.9269563]@,\$[1.4044222]@,\$[1.0023467]@,\$[1.6645944]@,\$[85.062021]@
 \$[3.4851941]@,\$[2.6046113]@,\$[1.6096091]@,\$[1.2891143]@,\$[487.40037]@
 \$[2.9006181]@,\$[2.5921785]@,\$[1.5549469]@,\$[3.6000938]@,\$[1731.2834]@

CH19B073

alpha = 0.11042216

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X1 X3 X2 X1 + beta_2 X2 X3 X1 X1 X4 + beta_3 X3 X3 X1 X3 X1
 + beta_4 X4 X3 X2 X1 X2

PARAMATER FOR POPULATION RANGE: beta_1

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[0.081840983]@
 \$[0.19194118]@,\$[0.10715074]@,\$[0.1476939]@,\$[0.14719252]@,\$[0.51295968]@
 \$[0.20625741]@,\$[0.38671511]@,\$[0.33502762]@,\$[0.16733763]@,\$[-0.763174]@
 \$[0.176846]@,\$[0.30685212]@,\$[0.24975627]@,\$[0.29237971]@,\$[-1.1249135]@
 \$[0.61714443]@,\$[0.37134522]@,\$[0.30293175]@,\$[0.64566291]@,\$[-0.29541708]@
 \$[0.55260033]@,\$[0.60626428]@,\$[0.8703974]@,\$[0.51592943]@,\$[1.288659]@
 \$[1.1372365]@,\$[1.1798037]@,\$[0.42900906]@,\$[0.92677619]@,\$[5.1072317]@
 \$[1.1513652]@,\$[0.8701652]@,\$[0.93088042]@,\$[1.3326312]@,\$[13.707314]@
 \$[1.2385341]@,\$[0.80856016]@,\$[1.1839187]@,\$[0.61447974]@,\$[11.449973]@
 \$[0.53130367]@,\$[1.2673022]@,\$[0.53331028]@,\$[1.6297171]@,\$[5.3485844]@
 \$[1.6125944]@,\$[1.7644399]@,\$[1.7343864]@,\$[0.77199234]@,\$[77.146462]@
 \$[1.9259331]@,\$[1.988842]@,\$[1.4625812]@,\$[1.5705669]@,\$[187.55074]@
 \$[1.0069787]@,\$[0.96199785]@,\$[1.2245845]@,\$[1.3820591]@,\$[20.510757]@
 \$[1.3424976]@,\$[1.0238581]@,\$[0.76699776]@,\$[2.539541]@,\$[36.904534]@
 \$[0.99897341]@,\$[2.1749418]@,\$[1.654993]@,\$[2.6870757]@,\$[149.84299]@
 \$[2.5697239]@,\$[1.7304015]@,\$[2.507702]@,\$[0.81085233]@,\$[337.70047]@
 \$[1.1880857]@,\$[2.7786981]@,\$[2.9197525]@,\$[2.1905258]@,\$[448.85004]@
 \$[2.3614576]@,\$[1.6539098]@,\$[2.8795366]@,\$[1.2113737]@,\$[507.85232]@
 \$[2.3677148]@,\$[3.1907105]@,\$[1.0507526]@,\$[3.3366964]@,\$[734.61067]@
 \$[1.0410367]@,\$[1.745592]@,\$[3.2928576]@,\$[3.2745229]@,\$[347.03561]@

CH19B074

alpha = 0.13692152

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X1 X4 X3 X4 + beta_2 X2 X1 X1 X3 X4 + beta_3 X3 X1 X3 X1 X4
 + beta_4 X4 X1 X3 X4 X4

PARAMATER FOR POPULATION RANGE: beta_2

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[3.3086381]@

```

BT2022_qiv_22_alldata
$[0.11265724]@,$[0.1960908]@,$[0.089280991]@,$[0.10559365]@,$[1.6953244]@
$[0.1672431]@,$[0.26450134]@,$[0.21614188]@,$[0.22706671]@,$[1.806351]@
$[0.36697509]@,$[0.5754298]@,$[0.29970792]@,$[0.45906479]@,$[3.2211014]@
$[0.66905]@,$[0.38707232]@,$[0.73795255]@,$[0.30463266]@,$[0.93566147]@
$[0.95288577]@,$[0.38087558]@,$[0.69857328]@,$[0.7502399]@,$[4.968986]@
$[0.94422834]@,$[0.56280349]@,$[0.62734353]@,$[0.88491975]@,$[5.2083174]@
$[0.93131128]@,$[1.2482091]@,$[0.51691675]@,$[1.1216755]@,$[5.4496656]@
$[1.0648278]@,$[1.03182]@,$[0.68932322]@,$[1.4058223]@,$[8.0698095]@
$[1.7163851]@,$[1.5215523]@,$[0.88803609]@,$[0.95551192]@,$[24.181031]@
$[1.5643574]@,$[1.763745]@,$[0.82067135]@,$[1.1171179]@,$[23.852526]@
$[1.4024464]@,$[1.9065319]@,$[1.1861881]@,$[0.74248154]@,$[21.701257]@
$[1.0932395]@,$[1.6804871]@,$[0.93267209]@,$[1.00114]@,$[10.550092]@
$[2.0501995]@,$[2.2696394]@,$[2.3931604]@,$[0.82500767]@,$[137.93498]@
$[2.5559274]@,$[2.6780958]@,$[0.94476866]@,$[1.6401973]@,$[138.40956]@
$[2.5069404]@,$[1.3775193]@,$[0.94038371]@,$[1.9948389]@,$[90.939723]@
$[1.2037988]@,$[1.2583615]@,$[1.6452822]@,$[2.8667729]@,$[-1.5495239]@
$[3.2722685]@,$[1.0509705]@,$[2.7981502]@,$[1.4117979]@,$[567.14226]@
$[2.255474]@,$[2.2397663]@,$[3.2907914]@,$[3.0133996]@,$[721.00673]@
$[3.259096]@,$[1.1170759]@,$[2.323677]@,$[3.6363373]@,$[714.56353]@

```

CH19B076

alpha = 0.13691419

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X4 X4 X3 X1 + beta_2 X2 X3 X3 X3 X3 + beta_3 X3 X2 X2 X2 X4
+ beta_4 X4 X1 X4 X4 X3

PARAMATER FOR POPULATION RANGE: beta_2

DATA COLUMNS X1 X2 X3 X4 Y

```

$[0]@,$[0]@,$[0]@,$[0]@,$[8.1026695]@
$[0.11039758]@,$[0.083509533]@,$[0.090277242]@,$[0.12864213]@,$[5.7867773]@
$[0.34673032]@,$[0.10160949]@,$[0.22028308]@,$[0.11316688]@,$[5.2114398]@
$[0.3416521]@,$[0.42050059]@,$[0.25720986]@,$[0.21211442]@,$[4.9337773]@
$[0.58290587]@,$[0.58834687]@,$[0.3073284]@,$[0.47218994]@,$[8.2400248]@
$[0.84109153]@,$[0.30648894]@,$[0.26239889]@,$[0.39202039]@,$[6.5073745]@
$[1.0118952]@,$[0.94847257]@,$[1.075257]@,$[0.92086561]@,$[15.313129]@
$[0.94695456]@,$[1.12162]@,$[0.43714503]@,$[0.89409778]@,$[10.008207]@
$[1.5328358]@,$[1.273332]@,$[1.1155165]@,$[1.1231692]@,$[30.91835]@
$[1.2478446]@,$[1.0379386]@,$[1.1066096]@,$[1.618545]@,$[38.910021]@
$[1.7294812]@,$[0.87689194]@,$[0.67473119]@,$[0.81132475]@,$[9.7977796]@
$[0.68529596]@,$[0.57938367]@,$[0.71498259]@,$[1.0765011]@,$[9.5045002]@
$[2.0203442]@,$[0.82178063]@,$[0.88675269]@,$[2.3890269]@,$[90.04132]@
$[1.8021588]@,$[1.4420756]@,$[1.1863066]@,$[2.4912089]@,$[162.90503]@
$[2.5449793]@,$[2.7813966]@,$[2.4407113]@,$[1.0678763]@,$[509.85063]@
$[2.4004514]@,$[2.5587486]@,$[1.7207321]@,$[2.6488]@,$[700.16142]@
$[1.6696087]@,$[1.0177544]@,$[1.4965778]@,$[2.2799928]@,$[129.52239]@
$[3.3563601]@,$[2.475771]@,$[3.0566706]@,$[1.6563856]@,$[966.24372]@
$[3.0264678]@,$[1.6732434]@,$[1.3894038]@,$[1.0501175]@,$[70.734718]@
$[3.4089511]@,$[1.824005]@,$[3.6105504]@,$[1.8031182]@,$[1020.3699]@

```

BT2022_qiv_22_alldata

CH19B080
alpha = 0.12645549
MLR FIT FUNCTION
$$Y = \beta_0 + \beta_1 X_1 X_4 X_4 X_2 X_1 + \beta_2 X_2 X_1 X_4 X_1 X_1 + \beta_3 X_3 X_1 X_1 X_2 X_4 + \beta_4 X_4 X_4 X_1 X_2 X_3$$

PARAMATER FOR POPULATION RANGE: beta_2
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[3.0070604]@
\$[0.19885904]@,\$[0.12392566]@,\$[0.11855575]@,\$[0.19990852]@,\$[0.61627182]@
\$[0.34235375]@,\$[0.24496765]@,\$[0.1430152]@,\$[0.21024891]@,\$[2.6940081]@
\$[0.19018729]@,\$[0.16002825]@,\$[0.23130807]@,\$[0.57582032]@,\$[1.8721916]@
\$[0.32060308]@,\$[0.31756463]@,\$[0.60685561]@,\$[0.79456387]@,\$[1.983922]@
\$[0.68974384]@,\$[0.33984175]@,\$[0.38091353]@,\$[0.78267492]@,\$[1.5153653]@
\$[0.70805211]@,\$[1.0858504]@,\$[1.0507523]@,\$[0.3679432]@,\$[3.6479201]@
\$[0.795297]@,\$[0.98965478]@,\$[0.51621036]@,\$[1.3132891]@,\$[2.4401194]@
\$[1.0056189]@,\$[1.5479296]@,\$[0.48558562]@,\$[0.99907663]@,\$[2.5300435]@
\$[1.739229]@,\$[0.67588802]@,\$[1.5907208]@,\$[1.3151931]@,\$[13.469163]@
\$[1.5062137]@,\$[0.90970754]@,\$[1.3968797]@,\$[0.8108409]@,\$[7.3805762]@
\$[0.99908523]@,\$[1.0796099]@,\$[1.6711376]@,\$[1.3306105]@,\$[9.6908077]@
\$[0.77146077]@,\$[1.9183076]@,\$[1.9321729]@,\$[1.0154421]@,\$[6.3771043]@
\$[2.4828544]@,\$[2.5082922]@,\$[2.4244088]@,\$[1.5565064]@,\$[155.79152]@
\$[1.7696929]@,\$[2.1907618]@,\$[2.2484484]@,\$[2.3996439]@,\$[113.15513]@
\$[0.891342]@,\$[0.98658757]@,\$[1.1031323]@,\$[0.80736746]@,\$[4.0165219]@
\$[2.2545607]@,\$[2.4350965]@,\$[2.728695]@,\$[2.0786051]@,\$[194.21447]@
\$[1.4296546]@,\$[0.88582892]@,\$[2.4638554]@,\$[1.8481348]@,\$[25.309429]@
\$[1.4037259]@,\$[3.2730086]@,\$[1.1756664]@,\$[1.0203846]@,\$[24.163524]@
\$[3.1267175]@,\$[2.7720823]@,\$[1.8146154]@,\$[1.136848]@,\$[141.66259]@

CH19B083
alpha = 0.065417876
MLR FIT FUNCTION
$$Y = \beta_0 + \beta_1 X_1 X_1 X_4 X_3 X_2 + \beta_2 X_2 X_2 X_4 X_2 X_1 + \beta_3 X_3 X_4 X_3 X_3 X_3 + \beta_4 X_4 X_2 X_4 X_3 X_1$$

PARAMATER FOR POPULATION RANGE: beta_1
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[5.071357]@
\$[0.11875986]@,\$[0.067149387]@,\$[0.12163112]@,\$[0.12429151]@,\$[3.6422007]@
\$[0.37920923]@,\$[0.11238957]@,\$[0.36288685]@,\$[0.27340791]@,\$[4.6022814]@
\$[0.58100809]@,\$[0.52350903]@,\$[0.43888151]@,\$[0.53002403]@,\$[7.246034]@
\$[0.38512198]@,\$[0.4186383]@,\$[0.71338126]@,\$[0.59658144]@,\$[6.8548726]@
\$[0.28862832]@,\$[0.39947611]@,\$[0.39656623]@,\$[0.45709718]@,\$[4.4591201]@
\$[0.79651599]@,\$[0.59424302]@,\$[1.0773766]@,\$[0.67494458]@,\$[6.3574787]@
\$[0.76612401]@,\$[0.65639752]@,\$[1.1950289]@,\$[1.2629433]@,\$[14.264392]@
\$[0.99409486]@,\$[0.92804697]@,\$[0.91347105]@,\$[1.5174669]@,\$[13.105227]@
\$[1.0229977]@,\$[1.6640953]@,\$[1.674177]@,\$[0.68855256]@,\$[19.202505]@

```

BT2022_qiv_22_alldata
$[1.7002775]@,$[0.57874207]@,$[1.5187031]@,$[1.3937846]@,$[35.63398]@
$[1.402155]@,$[1.8603731]@,$[0.64349992]@,$[1.7942665]@,$[4.6583866]@
$[1.6947894]@,$[1.8402728]@,$[1.6286276]@,$[1.1991524]@,$[38.817981]@
$[2.3973918]@,$[1.7157354]@,$[2.3197851]@,$[1.6384213]@,$[203.73193]@
$[2.6549834]@,$[1.6834361]@,$[1.1176399]@,$[2.2082066]@,$[82.315426]@
$[2.2091218]@,$[1.2830122]@,$[1.9171364]@,$[1.5381401]@,$[101.14192]@
$[2.4568623]@,$[2.5128933]@,$[0.98807461]@,$[1.1746586]@,$[-19.352244]@
$[1.2320402]@,$[2.1961804]@,$[2.7527179]@,$[1.9164972]@,$[336.43034]@
$[3.5155554]@,$[1.5708741]@,$[1.3309009]@,$[1.0056309]@,$[33.067926]@
$[2.5603503]@,$[2.5827988]@,$[3.6107984]@,$[1.8552044]@,$[985.89294]@

```

CH19B084

alpha = 0.11511656

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X2 X2 X1 X3 + beta_2 X2 X4 X1 X2 X3 + beta_3 X3 X2 X1 X1 X1
+ beta_4 X4 X1 X3 X4 X2

PARAMATER FOR POPULATION RANGE: beta_4

DATA COLUMNS X1 X2 X3 X4 Y

```

$[0]@,$[0]@,$[0]@,$[0]@,$[3.701546]@
$[0.1173272]@,$[0.18525517]@,$[0.072920049]@,$[0.17616288]@,$[4.4317487]@
$[0.35882242]@,$[0.32922315]@,$[0.3357722]@,$[0.31535555]@,$[3.9200554]@
$[0.43480055]@,$[0.30982808]@,$[0.40854913]@,$[0.51346641]@,$[5.085143]@
$[0.33041554]@,$[0.60614511]@,$[0.69621614]@,$[0.31813981]@,$[3.6829845]@
$[0.6067693]@,$[0.46919937]@,$[0.54290125]@,$[0.41282081]@,$[3.6285472]@
$[1.1154962]@,$[0.58875223]@,$[0.9197924]@,$[0.38358255]@,$[5.9527758]@
$[0.82187328]@,$[1.0457514]@,$[0.70175958]@,$[0.8956413]@,$[9.6879759]@
$[0.67610853]@,$[0.65580129]@,$[1.4136234]@,$[0.57781926]@,$[7.7199267]@
$[1.305205]@,$[1.1704332]@,$[0.80703972]@,$[1.6467416]@,$[31.110214]@
$[0.95855637]@,$[1.1726098]@,$[1.75041]@,$[1.7762215]@,$[46.048223]@
$[2.1171183]@,$[1.0536671]@,$[1.7655264]@,$[1.1714479]@,$[94.662651]@
$[1.7669333]@,$[1.2297734]@,$[1.0323257]@,$[1.9951666]@,$[77.661336]@
$[2.0669741]@,$[1.3585144]@,$[1.2363484]@,$[2.0821099]@,$[139.55718]@
$[2.5783474]@,$[1.9398108]@,$[2.5743527]@,$[0.93445906]@,$[512.52656]@
$[0.79203022]@,$[1.3699388]@,$[2.6022502]@,$[2.3551509]@,$[92.962338]@
$[0.95001129]@,$[2.707955]@,$[1.65531]@,$[2.4860764]@,$[210.0296]@
$[2.9503964]@,$[2.8939133]@,$[2.2655967]@,$[2.4665901]@,$[1707.871]@
$[3.0073046]@,$[3.421353]@,$[2.6802631]@,$[1.5920611]@,$[2277.5608]@
$[1.1959961]@,$[3.2687619]@,$[3.7077239]@,$[2.0577179]@,$[724.10538]@

```

CH19B088

alpha = 0.1659429

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X4 X1 X1 X3 + beta_2 X2 X2 X2 X2 X3 + beta_3 X3 X4 X2 X2 X4
+ beta_4 X4 X3 X1 X4 X1

PARAMATER FOR POPULATION RANGE: beta_1

DATA COLUMNS X1 X2 X3 X4 Y

BT2022_qiv_22_alldata

$\$[0]@, \$[0]@, \$[0]@, \$[0]@, \$[1.1523072]@$
 $\$[0.14095952]@, \$[0.065076916]@, \$[0.15669598]@, \$[0.063930172]@, \$[1.2482753]@$
 $\$[0.157265]@, \$[0.36285914]@, \$[0.23407178]@, \$[0.33251296]@, \$[3.2696137]@$
 $\$[0.3915896]@, \$[0.53708968]@, \$[0.21782395]@, \$[0.4578154]@, \$[1.13344]@$
 $\$[0.44616129]@, \$[0.51516101]@, \$[0.28650631]@, \$[0.56135582]@, \$[0.40736587]@$
 $\$[0.72427626]@, \$[0.60165599]@, \$[0.5779211]@, \$[0.49223188]@, \$[0.82948409]@$
 $\$[0.73049605]@, \$[0.9110393]@, \$[0.49353059]@, \$[0.86277014]@, \$[2.3652912]@$
 $\$[0.78130582]@, \$[0.84359872]@, \$[1.3882051]@, \$[0.4110716]@, \$[2.7963268]@$
 $\$[1.1419258]@, \$[0.65276965]@, \$[0.95899894]@, \$[0.80306838]@, \$[1.6351331]@$
 $\$[0.5868306]@, \$[0.99240419]@, \$[1.6910514]@, \$[1.2438252]@, \$[11.70697]@$
 $\$[0.68573225]@, \$[1.8400706]@, \$[1.7847332]@, \$[1.0181911]@, \$[77.565559]@$
 $\$[1.7004777]@, \$[0.66036677]@, \$[1.4541539]@, \$[1.9313417]@, \$[7.8377266]@$
 $\$[1.0417399]@, \$[1.7684412]@, \$[1.5664891]@, \$[2.015464]@, \$[92.149955]@$
 $\$[2.0043474]@, \$[0.98829467]@, \$[1.0527077]@, \$[1.7971706]@, \$[3.178029]@$
 $\$[2.5105681]@, \$[2.7121808]@, \$[2.2460906]@, \$[1.889537]@, \$[457.94138]@$
 $\$[0.88079709]@, \$[1.9037705]@, \$[2.5455192]@, \$[1.1453631]@, \$[132.55231]@$
 $\$[0.94249027]@, \$[1.3037669]@, \$[1.7497661]@, \$[3.0044001]@, \$[83.093249]@$
 $\$[1.7672708]@, \$[2.8573087]@, \$[2.0150365]@, \$[2.8635063]@, \$[707.96153]@$
 $\$[3.1164955]@, \$[0.96958491]@, \$[2.3046954]@, \$[1.8462671]@, \$[-94.120143]@$
 $\$[2.5788797]@, \$[3.0978451]@, \$[1.179693]@, \$[1.9940269]@, \$[406.80953]@$

CH19B091

alpha = 0.057009289
MLR FIT FUNCTION
 $Y = \beta_0 + \beta_1 X_1 X_3 X_1 X_3 X_2 + \beta_2 X_2 X_4 X_1 X_4 X_2 + \beta_3 X_3 X_4 X_1 X_3 X_4$
 $+ \beta_4 X_4 X_3 X_1 X_1$
PARAMATER FOR POPULATION RANGE: beta_2
DATA COLUMNS X1 X2 X3 X4 Y
 $\$[0]@, \$[0]@, \$[0]@, \$[0]@, \$[6.7635599]@$
 $\$[0.12086202]@, \$[0.10098636]@, \$[0.10988945]@, \$[0.081327794]@, \$[6.0894874]@$
 $\$[0.31924207]@, \$[0.12528535]@, \$[0.21602881]@, \$[0.11110367]@, \$[5.6991176]@$
 $\$[0.21802608]@, \$[0.59190914]@, \$[0.35441394]@, \$[0.29005586]@, \$[7.1689307]@$
 $\$[0.29170336]@, \$[0.35083861]@, \$[0.46454725]@, \$[0.35640843]@, \$[6.7221984]@$
 $\$[0.9130141]@, \$[0.91894071]@, \$[0.69564151]@, \$[0.40466093]@, \$[7.5516348]@$
 $\$[0.8842616]@, \$[0.54897896]@, \$[0.76364688]@, \$[0.9565169]@, \$[11.100217]@$
 $\$[0.93667516]@, \$[1.2591598]@, \$[0.99913747]@, \$[0.54750714]@, \$[10.785025]@$
 $\$[0.84174063]@, \$[1.4959392]@, \$[1.3373613]@, \$[0.98090454]@, \$[20.581529]@$
 $\$[1.3493286]@, \$[0.97919352]@, \$[1.3047466]@, \$[0.52445092]@, \$[18.890269]@$
 $\$[1.3507823]@, \$[1.504266]@, \$[1.9436691]@, \$[0.9412003]@, \$[52.165343]@$
 $\$[0.56094664]@, \$[1.7645373]@, \$[1.1294241]@, \$[2.1766472]@, \$[40.699892]@$
 $\$[1.3304133]@, \$[2.1659333]@, \$[1.2035578]@, \$[1.452615]@, \$[72.950736]@$
 $\$[1.6785058]@, \$[1.8433768]@, \$[1.7517655]@, \$[1.2063195]@, \$[98.223176]@$
 $\$[1.5571701]@, \$[1.321885]@, \$[1.8169227]@, \$[2.0446878]@, \$[170.51757]@$
 $\$[1.6840291]@, \$[1.4081706]@, \$[2.3233788]@, \$[1.5866803]@, \$[184.4374]@$
 $\$[2.028583]@, \$[2.6673441]@, \$[1.0972717]@, \$[1.0547188]@, \$[99.728167]@$
 $\$[2.6995814]@, \$[2.4068235]@, \$[2.1499106]@, \$[3.3005345]@, \$[1487.9524]@$
 $\$[2.53388]@, \$[3.201863]@, \$[1.2368898]@, \$[1.5360372]@, \$[326.44528]@$

BT2022_qiv_22_alldata
\$[1.1510645]@,\$[1.4834651]@,\$[1.5380133]@,\$[1.2840114]@,\$[45.183328]@

CH19B092
alpha = 0.11419582
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X3 X1 X1 X3 + beta_2 X2 X4 X4 X4 X2 + beta_3 X3 X3 X4 X3 X2
+ beta_4 X4 X3 X2 X4 X1
PARAMATER FOR POPULATION RANGE: beta_4
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@[1.2610721]@
\$[0.13028591]@,\$[0.14170012]@,\$[0.11223613]@,\$[0.17094058]@,\$[1.9898441]@
\$[0.26359141]@,\$[0.39203619]@,\$[0.17082485]@,\$[0.15621349]@,\$[1.0340989]@
\$[0.56806845]@,\$[0.37184042]@,\$[0.38211233]@,\$[0.38185199]@,\$[0.13892083]@
\$[0.3431268]@,\$[0.5364337]@,\$[0.33467067]@,\$[0.47607652]@,\$[1.8500715]@
\$[0.64872247]@,\$[0.55839874]@,\$[0.92226915]@,\$[0.64901628]@,\$[2.3439218]@
\$[0.51141045]@,\$[0.62234655]@,\$[0.45569002]@,\$[1.000863]@,\$[4.8028715]@
\$[0.48580587]@,\$[1.1162046]@,\$[1.1378125]@,\$[0.41542021]@,\$[1.5797534]@
\$[0.65511264]@,\$[0.98400229]@,\$[1.3305715]@,\$[0.83328791]@,\$[5.6949666]@
\$[1.0590479]@,\$[1.7466021]@,\$[1.5534672]@,\$[0.87640251]@,\$[16.22922]@
\$[1.3466731]@,\$[1.5322381]@,\$[0.72702381]@,\$[1.6681423]@,\$[36.068067]@
\$[1.9974231]@,\$[1.3350903]@,\$[1.1339607]@,\$[1.0243676]@,\$[22.678608]@
\$[1.0861636]@,\$[1.6045776]@,\$[1.8592945]@,\$[1.1964902]@,\$[26.845248]@
\$[1.3970314]@,\$[2.5366796]@,\$[2.0188269]@,\$[1.6119138]@,\$[115.3536]@
\$[1.6303777]@,\$[0.70334431]@,\$[2.2817251]@,\$[1.980585]@,\$[54.261314]@
\$[2.7629678]@,\$[2.9197116]@,\$[2.6104173]@,\$[2.7669655]@,\$[847.72662]@
\$[1.6452204]@,\$[2.0091486]@,\$[1.7723425]@,\$[2.1631403]@,\$[157.7232]@
\$[3.2944957]@,\$[3.0065962]@,\$[1.1064977]@,\$[3.3737521]@,\$[1113.9058]@
\$[2.2521227]@,\$[3.0856907]@,\$[2.1717374]@,\$[3.2842904]@,\$[1154.189]@
\$[1.5190284]@,\$[3.0057074]@,\$[3.1657395]@,\$[2.1257379]@,\$[402.84175]@

CH19B093
alpha = 0.19332747
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X1 X2 X3 X3 + beta_2 X2 X3 X4 X4 X4 + beta_3 X3 X2 X2 X1 X2
+ beta_4 X4 X4 X1 X3 X3
PARAMATER FOR POPULATION RANGE: beta_2
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[-1.0839843]@
\$[0.1608544]@,\$[0.075090573]@,\$[0.14224082]@,\$[0.079661653]@,\$[-1.9194622]@
\$[0.10983871]@,\$[0.13344776]@,\$[0.31386161]@,\$[0.25871466]@,\$[-0.67029134]@
\$[0.28890899]@,\$[0.42175846]@,\$[0.25374665]@,\$[0.41834551]@,\$[-1.2968825]@
\$[0.2824145]@,\$[0.78820647]@,\$[0.72446618]@,\$[0.57015459]@,\$[0.1791499]@
\$[0.34113474]@,\$[0.82479009]@,\$[0.6478484]@,\$[0.70772111]@,\$[-1.3418867]@
\$[1.1109733]@,\$[0.52632043]@,\$[1.1639553]@,\$[0.50824541]@,\$[5.7827159]@
\$[1.3182918]@,\$[1.3795914]@,\$[1.3546188]@,\$[0.64505386]@,\$[41.963162]@
\$[0.99978672]@,\$[1.079732]@,\$[0.69404761]@,\$[1.3997144]@,\$[3.1627366]@

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\$[0.57802876]@,\$[1.4236322]@,\$[0.53074577]@,\$[0.567972]@,\$[4.1270257]@
 \$[1.4069564]@,\$[0.56897942]@,\$[1.3461089]@,\$[1.4744966]@,\$[6.7711488]@
 \$[1.4578995]@,\$[1.9384222]@,\$[1.9514749]@,\$[1.7216315]@,\$[147.3367]@
 \$[2.3508165]@,\$[0.70377056]@,\$[2.0120021]@,\$[2.2243438]@,\$[53.92084]@
 \$[2.5871546]@,\$[1.8100399]@,\$[1.4626647]@,\$[2.0197524]@,\$[204.44838]@
 \$[1.0828953]@,\$[0.87220219]@,\$[2.1745127]@,\$[1.5636287]@,\$[20.597675]@
 \$[1.9973156]@,\$[2.7356144]@,\$[2.3071928]@,\$[2.6779069]@,\$[581.9693]@
 \$[2.5573221]@,\$[1.3977821]@,\$[1.1420816]@,\$[0.95314252]@,\$[91.586115]@
 \$[1.2760988]@,\$[3.1720895]@,\$[1.0021715]@,\$[2.5379413]@,\$[159.76882]@
 \$[2.1750093]@,\$[1.3891235]@,\$[3.0124638]@,\$[1.4583242]@,\$[357.52811]@
 \$[3.2993184]@,\$[3.3249103]@,\$[1.340406]@,\$[2.6162983]@,\$[953.80337]@

CH19B098

alpha = 0.077353157

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X1 X4 X4 X1 + beta_2 X2 X3 X1 X1 X1 + beta_3 X3 X1 X3 X2 X4
 + beta_4 X4 X3 X2 X2 X2
 PARAMATER FOR POPULATION RANGE: beta_2
 DATA COLUMNS X1 X2 X3 X4 Y
 \$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[2.4248299]@
 \$[0.17741267]@,\$[0.17597028]@,\$[0.14065377]@,\$[0.15169052]@,\$[3.2927224]@
 \$[0.33883287]@,\$[0.23627457]@,\$[0.3227415]@,\$[0.20560487]@,\$[2.3441863]@
 \$[0.1785552]@,\$[0.47894003]@,\$[0.36581698]@,\$[0.27656634]@,\$[0.98099391]@
 \$[0.32381684]@,\$[0.4569474]@,\$[0.59938816]@,\$[0.46566707]@,\$[1.3366975]@
 \$[0.98378642]@,\$[0.75976597]@,\$[0.71469291]@,\$[0.85902651]@,\$[7.4534813]@
 \$[0.95535251]@,\$[0.62888621]@,\$[0.69216309]@,\$[0.45491351]@,\$[4.422301]@
 \$[0.8802963]@,\$[1.2653372]@,\$[1.2512948]@,\$[0.36073446]@,\$[12.405103]@
 \$[0.45589809]@,\$[1.1252262]@,\$[1.0489745]@,\$[1.0647487]@,\$[8.4401257]@
 \$[0.96250192]@,\$[0.7911424]@,\$[1.6746065]@,\$[1.2042053]@,\$[21.092648]@
 \$[0.87884983]@,\$[1.9649564]@,\$[1.0806384]@,\$[1.6172693]@,\$[53.985482]@
 \$[0.77731502]@,\$[1.3432886]@,\$[1.3387335]@,\$[1.1615526]@,\$[24.788701]@
 \$[2.1146665]@,\$[0.8216922]@,\$[2.1062767]@,\$[1.3691457]@,\$[157.45366]@
 \$[0.74447984]@,\$[2.0266925]@,\$[1.6919237]@,\$[2.4012628]@,\$[124.46318]@
 \$[0.90864019]@,\$[1.1784534]@,\$[1.8926679]@,\$[2.362058]@,\$[64.255262]@
 \$[2.2219164]@,\$[2.4894319]@,\$[2.3725742]@,\$[0.9631871]@,\$[518.75109]@
 \$[2.8235629]@,\$[1.3781458]@,\$[1.0103992]@,\$[2.6284705]@,\$[547.42914]@
 \$[1.2166974]@,\$[1.6800156]@,\$[2.2986013]@,\$[2.663972]@,\$[214.06803]@
 \$[2.0866742]@,\$[1.6032985]@,\$[3.117075]@,\$[2.2743532]@,\$[608.62241]@
 \$[2.8499737]@,\$[2.472473]@,\$[3.6391862]@,\$[0.98301718]@,\$[1484.2532]@

CH20B005

alpha = 0.14876505

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X3 X4 X2 X4 + beta_2 X2 X1 X4 X1 X1 + beta_3 X3 X1 X1 X2 X2
 + beta_4 X4 X4 X1 X3 X4
 PARAMATER FOR POPULATION RANGE: beta_3

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DATA COLUMNS X1 X2 X3 X4 Y
 \$[0]@[0]@[0]@[0]@[0]@[0.38204872]@
 \$[0.15966328]@[0.083032597]@[0.10220652]@[0.1608206]@[0.92569816]@
 \$[0.39359134]@[0.36944842]@[0.37802437]@[0.32267206]@[0.69234761]@
 \$[0.47037189]@[0.38035196]@[0.43594978]@[0.43277655]@[0.-0.2048162]@
 \$[0.709712]@[0.68395945]@[0.21369746]@[0.53158236]@[2.5640475]@
 \$[0.46558354]@[0.28229242]@[0.32320553]@[0.40694567]@[0.33831936]@
 \$[0.44244929]@[0.32959164]@[1.1444701]@[0.45760144]@[1.3603641]@
 \$[1.2429682]@[1.2234692]@[1.3269497]@[0.76966417]@[18.928481]@
 \$[1.1448419]@[1.0291934]@[1.391756]@[0.80921381]@[13.897424]@
 \$[1.0616477]@[1.116473]@[1.3340109]@[1.2538016]@[23.327193]@
 \$[1.8157722]@[1.4160044]@[0.76984955]@[0.57606307]@[36.571371]@
 \$[1.8093657]@[1.6998084]@[0.87772438]@[0.65169288]@[51.68788]@
 \$[0.65880783]@[1.0252693]@[1.9302607]@[1.4202062]@[21.45823]@
 \$[0.93880682]@[1.1115288]@[1.5178593]@[0.95195994]@[15.287223]@
 \$[1.276075]@[1.8219255]@[1.1925658]@[0.80103906]@[29.222058]@
 \$[0.87662268]@[2.2351119]@[1.3216166]@[2.7497184]@[132.04686]@
 \$[1.3970687]@[1.6085871]@[0.83533886]@[1.3597646]@[51.766758]@
 \$[1.7107292]@[2.1351984]@[1.3216736]@[2.6610742]@[358.8855]@
 \$[1.3375989]@[2.9398107]@[3.4461142]@[1.6512617]@[223.05057]@
 \$[2.9902657]@[2.2503912]@[1.5951634]@[2.3689473]@[1148.6304]@

CH20B013
 alpha = 0.17664355
 MLR FIT FUNCTION
 Y = beta_0 + beta_1 X1 X2 X4 X1 X1 + beta_2 X2 X1 X2 X4 X1 + beta_3 X3 X4 X1 X2 X4
 + beta_4 X4 X3 X1 X2 X3
 PARAMATER FOR POPULATION RANGE: beta_2
 DATA COLUMNS X1 X2 X3 X4 Y
 \$[0]@[0]@[0]@[0]@[5.1213911]@
 \$[0.12404893]@[0.092606891]@[0.18137482]@[0.19322146]@[6.9286046]@
 \$[0.30867738]@[0.33270082]@[0.33351201]@[0.2640563]@[3.9046905]@
 \$[0.3379786]@[0.2788871]@[0.32483525]@[0.59542875]@[6.1763619]@
 \$[0.44746416]@[0.45454285]@[0.62541546]@[0.27850138]@[3.934275]@
 \$[0.66499844]@[0.92567736]@[0.58394714]@[0.82593485]@[7.0364069]@
 \$[0.62062891]@[0.92115262]@[0.86141485]@[0.71511754]@[8.4391612]@
 \$[0.38017464]@[0.77471843]@[0.51709802]@[0.68947539]@[5.2010693]@
 \$[0.49385638]@[0.73048083]@[1.2043718]@[1.0012366]@[9.0831819]@
 \$[0.95187168]@[1.7664627]@[1.3988384]@[0.74436578]@[23.643198]@
 \$[1.2734908]@[0.85623975]@[0.64186466]@[1.5285359]@[24.945252]@
 \$[1.758223]@[1.7248965]@[1.6428813]@[1.2306856]@[118.15616]@
 \$[2.2457144]@[0.84152977]@[1.1062336]@[1.1846259]@[73.262087]@
 \$[2.3991468]@[2.1146965]@[2.1488186]@[2.4741775]@[747.51324]@
 \$[1.592326]@[2.5656471]@[2.2871657]@[1.6102952]@[268.8479]@
 \$[1.095092]@[2.9752476]@[1.0872186]@[1.0434169]@[65.361836]@
 \$[1.1746737]@[1.6953195]@[2.5270247]@[2.0536222]@[158.04027]@
 \$[2.0254861]@[1.0648977]@[3.1886493]@[1.3969008]@[163.94843]@

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\$[0.93895572]@,\$[2.7489484]@,\$[1.7401396]@,\$[3.3149719]@,\$[279.82149]@
\$[1.2536478]@,\$[3.0129155]@,\$[1.0417461]@,\$[3.1519595]@,\$[324.74547]@

CH20B032

alpha = 0.17162757

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X1 X4 X1 X3 + beta_2 X2 X3 X2 X1 X1 + beta_3 X3 X3 X2 X2 X4 X2
+ beta_4 X4 X4 X4 X1 X4

PARAMATER FOR POPULATION RANGE: beta_4

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[-0.42563429]@
\$[0.17766642]@,\$[0.11600104]@,\$[0.073713525]@,\$[0.15621854]@,\$[0.46101123]@
\$[0.23704991]@,\$[0.19022847]@,\$[0.21301066]@,\$[0.10718243]@,\$[0.30914285]@
\$[0.18145709]@,\$[0.35585375]@,\$[0.49073261]@,\$[0.41321688]@,\$[0.11558299]@
\$[0.27351291]@,\$[0.54653942]@,\$[0.373018]@,\$[0.71127029]@,\$[0.92379097]@
\$[0.88147896]@,\$[0.31137872]@,\$[0.76730469]@,\$[0.91060521]@,\$[5.2369734]@
\$[1.1420123]@,\$[0.52709765]@,\$[0.96196632]@,\$[0.72595041]@,\$[3.7022306]@
\$[1.0940289]@,\$[1.1519053]@,\$[1.1631127]@,\$[1.1038075]@,\$[13.205769]@
\$[0.44416177]@,\$[0.81387425]@,\$[0.6820188]@,\$[1.0063584]@,\$[0.28897975]@
\$[0.68689365]@,\$[0.94024274]@,\$[1.381452]@,\$[1.7894594]@,\$[21.438476]@
\$[1.2878006]@,\$[0.99788108]@,\$[1.3016591]@,\$[0.50133817]@,\$[10.728745]@
\$[1.8522589]@,\$[1.518055]@,\$[0.61215786]@,\$[2.1120566]@,\$[132.98322]@
\$[1.6299286]@,\$[2.3354646]@,\$[1.8062312]@,\$[2.1612806]@,\$[214.63473]@
\$[0.80491986]@,\$[2.1467585]@,\$[2.4472269]@,\$[1.4752275]@,\$[25.448661]@
\$[1.2111732]@,\$[1.7688655]@,\$[2.0037147]@,\$[1.8068964]@,\$[74.867068]@
\$[2.3372633]@,\$[0.7599634]@,\$[2.0331806]@,\$[2.1775799]@,\$[256.26872]@
\$[0.90546247]@,\$[1.034745]@,\$[1.7546614]@,\$[2.458128]@,\$[100.5771]@
\$[3.2137142]@,\$[1.5039505]@,\$[2.5314124]@,\$[2.4509554]@,\$[879.8178]@
\$[3.4847305]@,\$[3.3323358]@,\$[2.6472291]@,\$[2.1198617]@,\$[2019.6261]@
\$[2.1500519]@,\$[3.7027333]@,\$[2.2943081]@,\$[3.0292635]@,\$[1062.7063]@

CH20B046

alpha = 0.096076451

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X3 X1 X2 X1 + beta_2 X2 X2 X2 X1 X1 + beta_3 X3 X3 X4 X2 X2
+ beta_4 X4 X4 X4 X2 X3

PARAMATER FOR POPULATION RANGE: beta_4

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[0.46269452]@
\$[0.15768198]@,\$[0.17985606]@,\$[0.18629738]@,\$[0.073795343]@,\$[2.3629525]@
\$[0.34485301]@,\$[0.32973503]@,\$[0.39332991]@,\$[0.1378084]@,\$[2.1224715]@
\$[0.59849287]@,\$[0.1668028]@,\$[0.56592446]@,\$[0.49968829]@,\$[1.0004856]@
\$[0.60979593]@,\$[0.34174639]@,\$[0.2437923]@,\$[0.46514606]@,\$[2.2993872]@
\$[0.70886853]@,\$[0.86625069]@,\$[0.99792258]@,\$[0.6833065]@,\$[5.8529877]@
\$[0.78454659]@,\$[0.95193563]@,\$[0.66888701]@,\$[0.31190836]@,\$[4.4742139]@
\$[1.3161421]@,\$[1.028225]@,\$[1.3416938]@,\$[1.2094193]@,\$[37.073081]@

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$\$[0.99291148]@, \$[1.5015183]@, \$[0.98825017]@, \$[1.4496315]@, \$[46.205126]@$
 $\$[1.6336752]@, \$[1.5522004]@, \$[1.7116605]@, \$[1.6256431]@, \$[167.252]@$
 $\$[1.322608]@, \$[1.5310847]@, \$[1.1471507]@, \$[1.527514]@, \$[85.11768]@$
 $\$[1.7515558]@, \$[0.78287658]@, \$[2.1263563]@, \$[1.3897731]@, \$[67.421105]@$
 $\$[2.2605688]@, \$[2.0990047]@, \$[0.93980894]@, \$[1.9822507]@, \$[441.21466]@$
 $\$[2.0033943]@, \$[2.2497492]@, \$[2.5856445]@, \$[1.1538063]@, \$[590.86645]@$
 $\$[1.700123]@, \$[2.7522007]@, \$[2.2402339]@, \$[1.1742316]@, \$[626.51578]@$
 $\$[1.3258878]@, \$[1.6093397]@, \$[1.5431472]@, \$[2.5495381]@, \$[213.22834]@$
 $\$[3.0174301]@, \$[2.4206068]@, \$[2.0569656]@, \$[0.86632401]@, \$[1423.4457]@$
 $\$[1.8924412]@, \$[1.2446688]@, \$[2.3827893]@, \$[3.2169923]@, \$[444.49484]@$
 $\$[0.94602229]@, \$[3.4803183]@, \$[2.138872]@, \$[3.4276336]@, \$[1461.6398]@$
 $\$[2.6203789]@, \$[1.9265771]@, \$[2.5025486]@, \$[2.2946433]@, \$[938.77577]@$

CH20B070

alpha = 0.17774995
 MLR FIT FUNCTION
 $Y = \beta_0 + \beta_1 X_1 X_4 X_1 X_1 X_2 + \beta_2 X_2 X_4 X_2 X_2 X_2 + \beta_3 X_3 X_2 X_1 X_4 X_3$
 $+ \beta_4 X_4 X_3 X_4 X_2 X_4$
 PARAMATER FOR POPULATION RANGE: beta_1
 DATA COLUMNS X1 X2 X3 X4 Y
 $\$[0]@, \$[0]@, \$[0]@, \$[0]@, \$[2.7289094]@$
 $\$[0.1154828]@, \$[0.18563495]@, \$[0.090414866]@, \$[0.15779649]@, \$[-0.57095427]@$
 $\$[0.21717751]@, \$[0.36062686]@, \$[0.13338439]@, \$[0.33363356]@, \$[0.29748323]@$
 $\$[0.51523314]@, \$[0.50684734]@, \$[0.31246304]@, \$[0.3355228]@, \$[-0.70707757]@$
 $\$[0.47886642]@, \$[0.78224592]@, \$[0.61760839]@, \$[0.46643665]@, \$[1.4873235]@$
 $\$[0.90796726]@, \$[0.54266497]@, \$[0.68965959]@, \$[0.73316694]@, \$[-0.026426491]@$
 $\$[0.59160857]@, \$[0.69865833]@, \$[0.81840554]@, \$[1.0152772]@, \$[2.9480389]@$
 $\$[0.94375753]@, \$[0.90430255]@, \$[0.84988087]@, \$[1.1783604]@, \$[10.140214]@$
 $\$[1.018093]@, \$[0.72531286]@, \$[0.73815697]@, \$[1.2840625]@, \$[6.9086736]@$
 $\$[1.4322547]@, \$[0.78142862]@, \$[0.57876195]@, \$[0.64323887]@, \$[4.7722145]@$
 $\$[0.75040994]@, \$[0.87329384]@, \$[0.84979375]@, \$[0.93277747]@, \$[8.2282954]@$
 $\$[2.0615449]@, \$[1.9839916]@, \$[2.0720862]@, \$[1.701531]@, \$[328.24782]@$
 $\$[2.12922]@, \$[1.1584391]@, \$[2.2096968]@, \$[2.2696104]@, \$[200.76267]@$
 $\$[2.5904679]@, \$[1.6280578]@, \$[1.1913237]@, \$[0.66897143]@, \$[68.721115]@$
 $\$[1.5937927]@, \$[1.548262]@, \$[1.8885831]@, \$[1.8804053]@, \$[172.98906]@$
 $\$[2.343309]@, \$[1.2843856]@, \$[1.657613]@, \$[2.947688]@, \$[320.41774]@$
 $\$[2.8517607]@, \$[0.85899003]@, \$[1.1501107]@, \$[0.8534422]@, \$[34.373736]@$
 $\$[3.2035698]@, \$[1.6255056]@, \$[0.99329524]@, \$[0.9055751]@, \$[124.45292]@$
 $\$[1.8817473]@, \$[1.5622535]@, \$[3.2908923]@, \$[1.4230949]@, \$[210.8071]@$
 $\$[3.0867543]@, \$[2.5297596]@, \$[3.3984829]@, \$[3.0844586]@, \$[2410.1302]@$

CH20B073

alpha = 0.11999278
 MLR FIT FUNCTION
 $Y = \beta_0 + \beta_1 X_1 X_3 X_1 X_2 X_4 + \beta_2 X_2 X_1 X_2 X_2 X_3 + \beta_3 X_3 X_2 X_1 X_4 X_3$
 $+ \beta_4 X_4 X_4 X_2 X_1 X_4$

BT2022_qiv_22_alldata

PARAMATER FOR POPULATION RANGE: beta_0

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@[2.8578016]@
\$[0.13729695]@,\$[0.053448891]@,\$[0.050503747]@,\$[0.060771803]@,\$[1.1924511]@
\$[0.15303102]@,\$[0.38933509]@,\$[0.17909988]@,\$[0.2973704]@,\$[1.3676727]@
\$[0.18545677]@,\$[0.28363198]@,\$[0.42471138]@,\$[0.41967157]@,\$[2.7154755]@
\$[0.47576682]@,\$[0.51375689]@,\$[0.53721864]@,\$[0.36845224]@,\$[4.7796173]@
\$[0.46961758]@,\$[0.78485025]@,\$[0.63549867]@,\$[0.78509307]@,\$[2.3385837]@
\$[0.87492691]@,\$[1.1110737]@,\$[0.4763191]@,\$[0.50141019]@,\$[4.6809847]@
\$[0.6978696]@,\$[0.83370357]@,\$[1.0025397]@,\$[0.79412929]@,\$[3.4985671]@
\$[1.3881474]@,\$[0.70028679]@,\$[0.45291262]@,\$[0.62570555]@,\$[3.4952244]@
\$[1.5983288]@,\$[0.81755221]@,\$[1.0145152]@,\$[1.5621026]@,\$[20.435581]@
\$[1.826936]@,\$[1.2843439]@,\$[1.0830975]@,\$[0.89006743]@,\$[17.966066]@
\$[1.5630648]@,\$[0.65570234]@,\$[1.2167447]@,\$[1.951024]@,\$[27.884564]@
\$[1.4393034]@,\$[0.94941381]@,\$[2.3074961]@,\$[0.65994282]@,\$[-0.23674541]@
\$[2.0498755]@,\$[2.5112883]@,\$[1.7659725]@,\$[1.9871816]@,\$[330.78848]@
\$[1.7336741]@,\$[2.4494029]@,\$[0.96798101]@,\$[1.5492425]@,\$[166.37168]@
\$[0.91314177]@,\$[0.81235848]@,\$[1.1593387]@,\$[2.8711845]@,\$[79.969951]@
\$[1.0905825]@,\$[2.7150599]@,\$[1.2736204]@,\$[1.4988338]@,\$[163.44835]@
\$[3.3954137]@,\$[1.9615941]@,\$[1.2232034]@,\$[2.8582356]@,\$[671.7424]@
\$[2.9738495]@,\$[2.4686446]@,\$[2.3570012]@,\$[2.2948961]@,\$[475.56552]@
\$[1.6412241]@,\$[2.864289]@,\$[1.7969142]@,\$[3.7037091]@,\$[1290.7115]@

CH20B080

alpha = 0.11445375

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X4 X1 X1 X3 + beta_2 X2 X1 X1 X2 X1 + beta_3 X3 X4 X3 X4 X4
+ beta_4 X4 X4 X4 X1 X2

PARAMATER FOR POPULATION RANGE: beta_2

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@[1.9314014]@
\$[0.059873253]@,\$[0.18844155]@,\$[0.17254507]@,\$[0.064887377]@,\$[1.0111086]@
\$[0.3575198]@,\$[0.32439811]@,\$[0.34341175]@,\$[0.3792979]@,\$[3.1827645]@
\$[0.29672919]@,\$[0.2681782]@,\$[0.21798142]@,\$[0.47855168]@,\$[-0.051666465]@
\$[0.765589]@,\$[0.79389709]@,\$[0.51148121]@,\$[0.28884611]@,\$[2.4649973]@
\$[0.84208123]@,\$[0.25519338]@,\$[0.27417768]@,\$[0.68400397]@,\$[0.81164203]@
\$[0.99559231]@,\$[0.57946481]@,\$[0.72405548]@,\$[0.63983237]@,\$[3.7789215]@
\$[1.1414309]@,\$[0.90410533]@,\$[1.0542471]@,\$[0.85563379]@,\$[7.9591677]@
\$[1.2890071]@,\$[1.1544971]@,\$[0.46485973]@,\$[1.138446]@,\$[15.907686]@
\$[0.66945657]@,\$[1.514352]@,\$[0.72058212]@,\$[1.6004577]@,\$[42.218538]@
\$[0.6405259]@,\$[1.2646853]@,\$[0.68809396]@,\$[1.2537638]@,\$[17.972792]@
\$[1.7677911]@,\$[1.4418934]@,\$[0.58157787]@,\$[1.293503]@,\$[39.494029]@
\$[1.6025824]@,\$[1.601735]@,\$[1.1469954]@,\$[2.2760019]@,\$[291.47497]@
\$[2.2418261]@,\$[1.7981911]@,\$[1.8666774]@,\$[1.2782867]@,\$[99.185364]@
\$[2.0898093]@,\$[1.528451]@,\$[2.2643996]@,\$[2.5808916]@,\$[926.77969]@
\$[1.2781897]@,\$[1.2515826]@,\$[0.87797419]@,\$[1.3136588]@,\$[34.340969]@
\$[0.81643524]@,\$[2.9566941]@,\$[2.1548338]@,\$[2.9080643]@,\$[1128.0632]@

BT2022_qiv_22_alldata
\$[2.7521448]@,\$[1.9893916]@,\$[1.7307497]@,\$[1.5831947]@,\$[211.07372]@
\$[3.4747784]@,\$[1.7597379]@,\$[3.5395269]@,\$[1.4070844]@,\$[337.16407]@
\$[1.1411075]@,\$[2.8891516]@,\$[2.0244968]@,\$[3.1112468]@,\$[1438.6477]@

CH208116
alpha = 0.081160575
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X3 X2 X1 X2 + beta_2 X2 X3 X1 X1 X3 + beta_3 X3 X1 X1 X3 X2
+ beta_4 X4 X1 X4 X2 X3
PARAMATER FOR POPULATION RANGE: beta_1
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[1.0300869]@
\$[0.089541996]@,\$[0.17687925]@,\$[0.073521346]@,\$[0.088032971]@,\$[2.3972542]@
\$[0.23182363]@,\$[0.2953803]@,\$[0.16780405]@,\$[0.35605618]@,\$[2.1371826]@
\$[0.28572555]@,\$[0.19651479]@,\$[0.17930756]@,\$[0.55407767]@,\$[2.0232352]@
\$[0.37479473]@,\$[0.61535576]@,\$[0.74411436]@,\$[0.68329921]@,\$[1.7962746]@
\$[0.48495054]@,\$[0.95309209]@,\$[0.91577824]@,\$[0.41674916]@,\$[1.1976365]@
\$[0.99234879]@,\$[0.93370111]@,\$[0.63705615]@,\$[0.5547828]@,\$[1.8132754]@
\$[1.2721667]@,\$[0.92553796]@,\$[0.91743552]@,\$[0.4316763]@,\$[-3.3618756]@
\$[1.3198318]@,\$[1.4515459]@,\$[0.77209122]@,\$[1.5114734]@,\$[-0.5999988]@
\$[0.96391843]@,\$[0.97619672]@,\$[0.77132674]@,\$[0.61876355]@,\$[-1.164528]@
\$[1.0248154]@,\$[0.95728807]@,\$[1.1998189]@,\$[1.271485]@,\$[-1.9142979]@
\$[0.5640594]@,\$[1.0678881]@,\$[1.1877903]@,\$[1.6855016]@,\$[1.5692456]@
\$[1.4634275]@,\$[1.5604565]@,\$[1.0103551]@,\$[2.0620168]@,\$[-2.8033465]@
\$[2.0195958]@,\$[1.3288468]@,\$[1.321855]@,\$[1.4980867]@,\$[-22.973651]@
\$[0.94010003]@,\$[2.0665633]@,\$[1.2947472]@,\$[1.9607648]@,\$[-2.6051637]@
\$[2.9550546]@,\$[1.6581024]@,\$[2.8994767]@,\$[2.2318163]@,\$[-310.20417]@
\$[2.9498784]@,\$[1.0967941]@,\$[3.0875429]@,\$[2.2716631]@,\$[-215.47793]@
\$[3.1298793]@,\$[3.3476853]@,\$[2.3047489]@,\$[1.995875]@,\$[-557.25618]@
\$[1.5954218]@,\$[2.105049]@,\$[0.97537679]@,\$[2.0988327]@,\$[-8.169044]@
\$[1.1798975]@,\$[0.99950034]@,\$[3.195879]@,\$[3.6881631]@,\$[2.5686217]@

CS178115
alpha = 0.15833308
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X1 X2 X2 X4 + beta_2 X2 X3 X3 X1 X1 + beta_3 X3 X3 X2 X4 X4
+ beta_4 X4 X3 X2 X3 X1
PARAMATER FOR POPULATION RANGE: beta_0
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[1.6941295]@
\$[0.10624103]@,\$[0.15987074]@,\$[0.1492255]@,\$[0.12501587]@,\$[-1.3233895]@
\$[0.23981995]@,\$[0.13008024]@,\$[0.37890299]@,\$[0.28903718]@,\$[1.7849889]@
\$[0.25139256]@,\$[0.55432237]@,\$[0.39701064]@,\$[0.16108845]@,\$[0.33970071]@
\$[0.5433613]@,\$[0.49040398]@,\$[0.57247395]@,\$[0.31667626]@,\$[0.93882991]@
\$[0.53883483]@,\$[0.81222658]@,\$[0.33957106]@,\$[0.39790322]@,\$[0.085079472]@
\$[0.83867144]@,\$[1.0285335]@,\$[0.34312359]@,\$[0.90957024]@,\$[6.1282764]@

```

BT2022_qiv_22_alldata
$[0.98439965]@,$[0.74625822]@,$[0.6039019]@,$[1.128954]@,$[6.7187305]@
$[0.85943514]@,$[1.3948206]@,$[0.7006698]@,$[1.5399454]@,$[20.196675]@
$[0.6669045]@,$[0.88217097]@,$[0.88633524]@,$[1.0193708]@,$[6.3737577]@
$[0.6556522]@,$[1.6789879]@,$[1.3498826]@,$[1.7928575]@,$[36.711277]@
$[0.71397521]@,$[0.71178901]@,$[1.3941292]@,$[1.056313]@,$[6.2984132]@
$[0.81604365]@,$[1.718995]@,$[1.9268702]@,$[1.0190825]@,$[37.259824]@
$[2.3972972]@,$[1.3717722]@,$[1.4755012]@,$[1.1926439]@,$[134.97889]@
$[0.72610579]@,$[1.2736793]@,$[0.94461254]@,$[1.6759657]@,$[16.68999]@
$[2.4236897]@,$[1.7679796]@,$[2.7534493]@,$[1.6857576]@,$[461.59574]@
$[2.9138259]@,$[1.6361856]@,$[2.0145989]@,$[1.1778182]@,$[330.9669]@
$[1.7285516]@,$[1.4077044]@,$[2.8988519]@,$[2.2425633]@,$[279.72609]@
$[1.035849]@,$[2.4689246]@,$[2.7419642]@,$[2.4924896]@,$[369.48059]@
$[2.0062065]@,$[3.7708638]@,$[2.3738276]@,$[1.2957065]@,$[782.5663]@

```

```

CS18B027
alpha = 0.10128026
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X1 X1 X1 X3 X1 + beta_2 X2 X4 X4 X1 X3 + beta_3 X3 X2 X1 X2 X3
+ beta_4 X4 X2 X2 X3 X3
PARAMATER FOR POPULATION RANGE: beta_2
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@,$[0.95968729]@
$[0.10138923]@,$[0.18026412]@,$[0.13782701]@,$[0.081334632]@,$[-0.96292458]@
$[0.39948595]@,$[0.15484168]@,$[0.35888135]@,$[0.34412492]@,$[1.2720567]@
$[0.42609555]@,$[0.32253432]@,$[0.50021713]@,$[0.28533312]@,$[0.98601495]@
$[0.72659633]@,$[0.47307181]@,$[0.70391928]@,$[0.2111542]@,$[0.84719035]@
$[0.99759295]@,$[0.60399627]@,$[0.7930619]@,$[0.45718723]@,$[2.4825222]@
$[0.78937163]@,$[0.33429513]@,$[0.68098039]@,$[0.3208142]@,$[-1.1933165]@
$[0.39448407]@,$[0.56403201]@,$[0.51283299]@,$[0.45249941]@,$[-0.71935593]@
$[0.40112111]@,$[0.72996823]@,$[1.1632735]@,$[1.3565377]@,$[-1.9314511]@
$[0.48359865]@,$[0.72102789]@,$[0.71841384]@,$[1.4773456]@,$[-2.3105561]@
$[1.3929624]@,$[1.5313468]@,$[1.1290482]@,$[1.9533575]@,$[31.65]@
$[2.0332086]@,$[0.85374106]@,$[1.0635342]@,$[1.7012863]@,$[74.775219]@
$[1.509879]@,$[1.6361833]@,$[1.5414571]@,$[1.4696034]@,$[55.009901]@
$[2.1425144]@,$[1.7252227]@,$[2.322038]@,$[1.0962176]@,$[270.34042]@
$[0.75952548]@,$[2.5674221]@,$[1.2752096]@,$[2.5730293]@,$[1.921398]@
$[0.84755161]@,$[2.4350715]@,$[2.9234882]@,$[1.877393]@,$[-16.07707]@
$[0.85715432]@,$[1.1600267]@,$[2.3352105]@,$[1.6578265]@,$[10.467169]@
$[1.6166046]@,$[2.9481756]@,$[1.7074183]@,$[3.1778757]@,$[159.49196]@
$[3.2942352]@,$[2.5882566]@,$[1.297007]@,$[1.5922807]@,$[679.94841]@
$[2.6448044]@,$[3.7236298]@,$[2.2639194]@,$[1.8734116]@,$[879.91534]@

```

```

CS18B028
alpha = 0.097855039
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X1 X4 X1 X4 + beta_2 X2 X1 X4 X4 X4 + beta_3 X3 X2 X3 X1

```

```

BT2022_qiv_22_alldata
+ beta_4 X4 X3 X4 X4 X3
PARAMATER FOR POPULATION RANGE: beta_4
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@[0.71253518]@
$[0.16422827]@,$[0.15406213]@,$[0.065063502]@,$[0.051695926]@,$[2.3627757]@
$[0.18539134]@,$[0.29343824]@,$[0.26897136]@,$[0.29273933]@,$[0.65643573]@
$[0.48588588]@,$[0.48121352]@,$[0.41581678]@,$[0.48282006]@,$[1.2375608]@
$[0.47969086]@,$[0.55290478]@,$[0.78822022]@,$[0.75308301]@,$[4.1072828]@
$[0.62567813]@,$[0.8056784]@,$[0.41145208]@,$[0.35848874]@,$[1.2121003]@
$[0.36496348]@,$[0.36265023]@,$[0.87382841]@,$[1.1048254]@,$[9.2973715]@
$[0.47711779]@,$[1.1785913]@,$[0.89487891]@,$[1.2924758]@,$[20.33868]@
$[1.3496235]@,$[1.304897]@,$[1.4929231]@,$[0.65974251]@,$[36.583052]@
$[0.72488796]@,$[0.95076428]@,$[0.81946711]@,$[0.88189886]@,$[9.9168547]@
$[1.4875417]@,$[0.91712336]@,$[0.88329852]@,$[1.779122]@,$[97.816376]@
$[0.56981746]@,$[0.66634397]@,$[1.4469179]@,$[0.6889101]@,$[7.7441296]@
$[1.0312642]@,$[0.8365442]@,$[1.3770583]@,$[1.678252]@,$[88.732604]@
$[1.904379]@,$[0.98196222]@,$[1.1536426]@,$[1.2551776]@,$[80.803301]@
$[2.1160726]@,$[1.1140916]@,$[0.76879238]@,$[2.4895161]@,$[403.67026]@
$[1.09505]@,$[1.9030369]@,$[2.2927132]@,$[1.2807749]@,$[198.65024]@
$[2.7172579]@,$[0.84379046]@,$[2.5777036]@,$[1.902978]@,$[630.75738]@
$[2.2648093]@,$[2.3034031]@,$[2.5092906]@,$[2.6429757]@,$[1739.765]@
$[3.457547]@,$[2.0636717]@,$[1.5392268]@,$[2.2230883]@,$[1315.3693]@
$[3.3874189]@,$[2.4871757]@,$[2.9925724]@,$[2.7510831]@,$[3743.0591]@

```

```

CS18B038
alpha = 0.095428904
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X1 X4 X1 X2 + beta_2 X2 X2 X1 X1 X4 + beta_3 X3 X2 X1 X4 X3
+ beta_4 X4 X2 X4 X4 X1
PARAMATER FOR POPULATION RANGE: beta_1
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@[0.70526303]@
$[0.052116118]@,$[0.054139294]@,$[0.075010305]@,$[0.085671008]@,$[2.0660548]@
$[0.35000458]@,$[0.20183577]@,$[0.22224359]@,$[0.16185526]@,$[3.3514491]@
$[0.28568965]@,$[0.30588711]@,$[0.29129628]@,$[0.43869548]@,$[-1.1151452]@
$[0.64071147]@,$[0.67034274]@,$[0.29354608]@,$[0.386566]@,$[3.5354508]@
$[0.73540893]@,$[0.45806272]@,$[0.55765787]@,$[0.38930298]@,$[0.29527286]@
$[1.0341252]@,$[0.63956799]@,$[0.93383039]@,$[0.99178233]@,$[8.6033288]@
$[0.98395366]@,$[0.83903503]@,$[0.5819331]@,$[0.46026523]@,$[3.2067973]@
$[0.53310679]@,$[0.86367505]@,$[0.47535575]@,$[0.73539673]@,$[2.8895983]@
$[1.3927317]@,$[1.4364537]@,$[1.0722014]@,$[1.034456]@,$[26.56577]@
$[0.79877415]@,$[1.8611766]@,$[0.89180611]@,$[1.9882083]@,$[72.810881]@
$[0.75411524]@,$[1.3128607]@,$[1.6049452]@,$[0.73161477]@,$[2.5969103]@
$[1.625846]@,$[1.3960365]@,$[1.9537342]@,$[0.61881186]@,$[10.536095]@
$[0.7816594]@,$[1.6092173]@,$[2.3085948]@,$[1.3270191]@,$[8.110212]@
$[2.4967493]@,$[1.5815189]@,$[2.696358]@,$[2.531397]@,$[483.21304]@
$[0.98228867]@,$[2.9705392]@,$[2.2647201]@,$[1.2043909]@,$[21.255912]@

```

BT2022_qiv_22_alldata

\$[2.2909974]@,\$[2.4749782]@,\$[1.2465209]@,\$[1.4174015]@,\$[230.58719]@
\$[1.5351202]@,\$[2.229628]@,\$[2.3853864]@,\$[0.89901307]@,\$[18.55817]@
\$[2.1990802]@,\$[2.5687258]@,\$[3.1525993]@,\$[1.7264304]@,\$[204.77323]@
\$[3.2824467]@,\$[1.4816954]@,\$[2.6441805]@,\$[3.4704865]@,\$[1621.4305]@

CS18B043

alpha = 0.16230608
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X3 X3 X4 X3 + beta_2 X2 X4 X2 X3 X2 + beta_3 X3 X2 X1 X1 X4
+ beta_4 X4 X1 X2 X3 X3
PARAMATER FOR POPULATION RANGE: beta_2
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@[3.7910044]@
\$[0.13195985]@,\$[0.13433739]@,\$[0.14806361]@,\$[0.09145723]@,\$[1.3732942]@
\$[0.1692885]@,\$[0.1100839]@,\$[0.29119837]@,\$[0.10408096]@,\$[3.843393]@
\$[0.22854482]@,\$[0.45799535]@,\$[0.40640989]@,\$[0.42711521]@,\$[5.319938]@
\$[0.46833564]@,\$[0.67437991]@,\$[0.48253236]@,\$[0.79813084]@,\$[3.9016673]@
\$[0.31130938]@,\$[0.30285957]@,\$[0.33521087]@,\$[0.2680015]@,\$[3.444598]@
\$[0.38524828]@,\$[0.52242569]@,\$[1.0962881]@,\$[0.87097713]@,\$[6.1364603]@
\$[1.0923252]@,\$[0.94046416]@,\$[0.63039379]@,\$[1.3539453]@,\$[11.637339]@
\$[1.1842764]@,\$[0.80339492]@,\$[0.82673626]@,\$[0.60410469]@,\$[9.6231166]@
\$[1.661494]@,\$[1.768159]@,\$[1.0746522]@,\$[1.7462118]@,\$[90.877294]@
\$[1.3952017]@,\$[1.6782533]@,\$[1.9722945]@,\$[1.7837399]@,\$[197.91489]@
\$[1.3617854]@,\$[2.144971]@,\$[2.0274841]@,\$[0.95028757]@,\$[131.48422]@
\$[1.9029873]@,\$[1.2287278]@,\$[1.5388761]@,\$[1.546364]@,\$[132.53786]@
\$[2.2275065]@,\$[0.96468699]@,\$[0.73016411]@,\$[1.2512189]@,\$[38.221858]@
\$[1.2582151]@,\$[2.0650741]@,\$[2.778271]@,\$[1.6509924]@,\$[380.9089]@
\$[0.88063356]@,\$[2.3682425]@,\$[1.9401985]@,\$[2.1739952]@,\$[185.29097]@
\$[2.2660144]@,\$[1.8284447]@,\$[1.3583592]@,\$[0.8281552]@,\$[102.27737]@
\$[3.376555]@,\$[2.3820529]@,\$[1.6224851]@,\$[1.4791577]@,\$[562.77213]@
\$[1.3705888]@,\$[3.1834968]@,\$[2.3460328]@,\$[1.0937798]@,\$[290.87494]@
\$[1.3081644]@,\$[1.0486335]@,\$[1.3358691]@,\$[3.7147787]@,\$[127.4135]@

CS18B046

alpha = 0.06078786
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X1 X1 X1 X4 + beta_2 X2 X3 X2 X4 X2 + beta_3 X3 X4 X4 X1 X3
+ beta_4 X4 X3 X2 X3 X4
PARAMATER FOR POPULATION RANGE: beta_3
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@[0.92967173]@
\$[0.12978615]@,\$[0.14270226]@,\$[0.075972943]@,\$[0.096317946]@,\$[2.4619056]@
\$[0.13872849]@,\$[0.26230033]@,\$[0.29382199]@,\$[0.3149555]@,\$[3.7091357]@
\$[0.51195266]@,\$[0.54385986]@,\$[0.19398779]@,\$[0.5954612]@,\$[1.3731931]@
\$[0.57767647]@,\$[0.78974413]@,\$[0.6120364]@,\$[0.70594345]@,\$[1.1713581]@
\$[0.64933956]@,\$[0.41430014]@,\$[0.44440924]@,\$[0.37375326]@,\$[0.87493587]@

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$\$[0.6529592]@, \$[0.76301408]@, \$[0.72986826]@, \$[0.52572402]@, \$[3.1965058]@$
 $\$[0.65556728]@, \$[0.43235925]@, \$[0.58396406]@, \$[0.9863982]@, \$[1.8205619]@$
 $\$[0.84092413]@, \$[1.3766867]@, \$[0.75538274]@, \$[1.0519981]@, \$[12.381598]@$
 $\$[0.96624348]@, \$[0.63231165]@, \$[1.7223374]@, \$[0.60515759]@, \$[8.9993663]@$
 $\$[0.78333906]@, \$[0.74846243]@, \$[1.6999606]@, \$[1.8903635]@, \$[62.409715]@$
 $\$[1.2474562]@, \$[1.9333403]@, \$[0.92533581]@, \$[1.9139885]@, \$[79.497098]@$
 $\$[2.2765509]@, \$[2.3110819]@, \$[2.1648158]@, \$[2.1288421]@, \$[588.46049]@$
 $\$[1.6652335]@, \$[1.3755073]@, \$[2.5685194]@, \$[1.81614]@, \$[299.77531]@$
 $\$[0.994734]@, \$[0.89517775]@, \$[1.2124012]@, \$[2.6185883]@, \$[81.428261]@$
 $\$[2.9804544]@, \$[2.1003997]@, \$[2.4195139]@, \$[1.2937873]@, \$[401.93796]@$
 $\$[1.8798034]@, \$[2.2964005]@, \$[1.7649371]@, \$[1.4284585]@, \$[208.65172]@$
 $\$[3.019104]@, \$[3.317117]@, \$[1.5197779]@, \$[3.3221499]@, \$[1461.3516]@$
 $\$[1.5058258]@, \$[0.99207333]@, \$[3.1106178]@, \$[1.8542461]@, \$[351.3539]@$
 $\$[1.4412409]@, \$[0.98131293]@, \$[1.4679855]@, \$[3.4872165]@, \$[278.62693]@$

CS18B048

alpha = 0.052329058

MLR FIT FUNCTION

$Y = \beta_0 + \beta_1 X_1 X_1 X_1 X_4 X_3 + \beta_2 X_2 X_2 X_4 X_1 X_2 + \beta_3 X_3 X_4 X_4 X_2 X_2$
 $+ \beta_4 X_4 X_1 X_4 X_4$
 PARAMATER FOR POPULATION RANGE: beta_1
 DATA COLUMNS X1 X2 X3 X4 Y
 $\$[0]@, \$[0]@, \$[0]@, \$[0]@, \$[1.4564982]@$
 $\$[0.19599232]@, \$[0.10655085]@, \$[0.14283079]@, \$[0.12748508]@, \$[0.91087961]@$
 $\$[0.22091662]@, \$[0.16849287]@, \$[0.32045736]@, \$[0.17277425]@, \$[1.4013613]@$
 $\$[0.19956092]@, \$[0.52609625]@, \$[0.28515989]@, \$[0.56486782]@, \$[4.1551082]@$
 $\$[0.54925386]@, \$[0.29030291]@, \$[0.34193494]@, \$[0.55495254]@, \$[0.29655318]@$
 $\$[0.74495522]@, \$[0.30789203]@, \$[0.3310876]@, \$[0.89793082]@, \$[2.7279103]@$
 $\$[0.40325368]@, \$[0.93317764]@, \$[0.64382334]@, \$[0.51214399]@, \$[1.8699758]@$
 $\$[0.61255775]@, \$[0.7663403]@, \$[0.4461382]@, \$[1.2737295]@, \$[9.3716183]@$
 $\$[0.65781987]@, \$[1.5230734]@, \$[0.89508976]@, \$[1.4122438]@, \$[32.218124]@$
 $\$[0.93703395]@, \$[0.80438561]@, \$[0.49159233]@, \$[0.68518359]@, \$[5.0469659]@$
 $\$[0.75587649]@, \$[0.60023633]@, \$[0.58508803]@, \$[1.541561]@, \$[16.589576]@$
 $\$[1.7592521]@, \$[0.70862727]@, \$[0.90769742]@, \$[1.0020818]@, \$[24.097254]@$
 $\$[1.1105897]@, \$[1.4370606]@, \$[0.64887998]@, \$[1.2402109]@, \$[30.647845]@$
 $\$[1.110336]@, \$[2.5303105]@, \$[2.3912313]@, \$[1.0937976]@, \$[131.00515]@$
 $\$[1.0359098]@, \$[2.7433811]@, \$[1.5414873]@, \$[1.886514]@, \$[291.82022]@$
 $\$[2.9819227]@, \$[1.7271383]@, \$[0.85625478]@, \$[1.083361]@, \$[155.86308]@$
 $\$[1.0191509]@, \$[0.91285079]@, \$[1.4521031]@, \$[2.146596]@, \$[99.040463]@$
 $\$[3.2169205]@, \$[1.3889575]@, \$[2.5312335]@, \$[2.3695017]@, \$[1087.5177]@$
 $\$[2.7728457]@, \$[3.0280117]@, \$[1.1168037]@, \$[2.8348698]@, \$[1693.3093]@$
 $\$[2.9771665]@, \$[2.1410966]@, \$[2.1889461]@, \$[2.9056563]@, \$[1683.4553]@$

CS18B053

alpha = 0.083833918

MLR FIT FUNCTION

BT2022_qiv_22_alldata

$Y = \beta_0 + \beta_1 X_1 X_2 X_4 X_1 X_1 + \beta_2 X_2 X_2 X_2 X_4 X_3 + \beta_3 X_3 X_4 X_1 X_1 X_1 + \beta_4 X_4 X_2 X_2 X_1 X_2$

PARAMATER FOR POPULATION RANGE: β_3

DATA COLUMNS $X_1 X_2 X_3 X_4 Y$

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[5.2443161]@
\$[0.10977397]@,\$[0.073263612]@,\$[0.055860784]@,\$[0.15879686]@,\$[4.1726301]@
\$[0.18832468]@,\$[0.16984648]@,\$[0.25396197]@,\$[0.38894944]@,\$[2.903694]@
\$[0.24209868]@,\$[0.52637861]@,\$[0.3645138]@,\$[0.26427101]@,\$[4.5478854]@
\$[0.68368811]@,\$[0.35068996]@,\$[0.50324752]@,\$[0.71066535]@,\$[5.3270731]@
\$[0.32082326]@,\$[0.51290057]@,\$[0.53336239]@,\$[0.45622072]@,\$[3.8933012]@
\$[0.68525072]@,\$[0.916515]@,\$[0.54974725]@,\$[0.63154973]@,\$[3.9061473]@
\$[1.0525759]@,\$[1.2832433]@,\$[0.79210674]@,\$[1.2227369]@,\$[13.091032]@
\$[1.0050108]@,\$[0.89961695]@,\$[0.93615494]@,\$[1.0543599]@,\$[10.37355]@
\$[0.48505693]@,\$[1.4410778]@,\$[0.48329041]@,\$[1.5771354]@,\$[7.5957447]@
\$[1.9889029]@,\$[0.70418725]@,\$[1.6714245]@,\$[1.0087929]@,\$[65.650185]@
\$[1.7398094]@,\$[1.3510672]@,\$[1.5239117]@,\$[0.69066315]@,\$[37.015123]@
\$[1.4371356]@,\$[1.254005]@,\$[1.2231105]@,\$[1.2816941]@,\$[32.632271]@
\$[2.0595507]@,\$[1.516631]@,\$[0.76381142]@,\$[1.9645479]@,\$[100.15586]@
\$[2.5883335]@,\$[1.8921418]@,\$[1.3352508]@,\$[1.20842]@,\$[185.66304]@
\$[2.810401]@,\$[2.6630373]@,\$[2.5585663]@,\$[2.7026472]@,\$[955.49682]@
\$[1.5058355]@,\$[2.2540599]@,\$[2.1825013]@,\$[1.6366222]@,\$[101.47734]@
\$[1.1989049]@,\$[1.2795765]@,\$[2.3092876]@,\$[1.7176368]@,\$[41.323778]@
\$[2.1133652]@,\$[1.5720143]@,\$[3.2116864]@,\$[2.6222781]@,\$[395.57233]@
\$[1.6395641]@,\$[1.2179958]@,\$[2.5623182]@,\$[2.8048169]@,\$[158.19108]@

CS18B055

$\alpha = 0.18027736$

MLR FIT FUNCTION

$Y = \beta_0 + \beta_1 X_1 X_4 X_1 X_1 X_3 + \beta_2 X_2 X_4 X_2 X_2 X_3 + \beta_3 X_3 X_1 X_4 X_1 X_2 + \beta_4 X_4 X_2 X_1 X_3 X_4$

PARAMATER FOR POPULATION RANGE: β_1

DATA COLUMNS $X_1 X_2 X_3 X_4 Y$

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[3.4070263]@
\$[0.16395333]@,\$[0.17640505]@,\$[0.085634689]@,\$[0.096126823]@,\$[0.83483862]@
\$[0.39680235]@,\$[0.21869601]@,\$[0.22330999]@,\$[0.38667492]@,\$[4.6791384]@
\$[0.19965594]@,\$[0.36549684]@,\$[0.5702281]@,\$[0.54698356]@,\$[1.9470941]@
\$[0.57454577]@,\$[0.37912346]@,\$[0.7932671]@,\$[0.73232705]@,\$[4.525583]@
\$[0.61214379]@,\$[0.67065727]@,\$[0.92210691]@,\$[0.90409249]@,\$[5.7556879]@
\$[0.8723206]@,\$[0.80480554]@,\$[1.0541548]@,\$[0.56063843]@,\$[5.8098583]@
\$[1.0034131]@,\$[1.3852556]@,\$[0.41595844]@,\$[0.83976915]@,\$[10.55987]@
\$[1.0442161]@,\$[0.79306324]@,\$[0.51126893]@,\$[1.5165231]@,\$[8.1533629]@
\$[1.1356962]@,\$[1.0837422]@,\$[0.57218785]@,\$[1.5749425]@,\$[15.481427]@
\$[1.4323527]@,\$[1.5028735]@,\$[1.0147965]@,\$[1.8808096]@,\$[62.802814]@
\$[2.0676932]@,\$[1.6040914]@,\$[2.1762996]@,\$[1.1366368]@,\$[175.75644]@
\$[2.2976397]@,\$[1.5107029]@,\$[2.1357653]@,\$[0.87543093]@,\$[159.80878]@
\$[1.7826247]@,\$[1.0292911]@,\$[2.1543115]@,\$[1.809042]@,\$[133.02754]@
\$[2.6952719]@,\$[1.2478057]@,\$[1.8240138]@,\$[2.400787]@,\$[476.41375]@

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\$[2.1113736]@,\$[2.3271676]@,\$[2.9738063]@,\$[2.1995983]@,\$[753.68926]@
\$[2.1668766]@,\$[1.8175425]@,\$[1.2962116]@,\$[1.6571818]@,\$[185.52184]@
\$[2.8065842]@,\$[3.0151956]@,\$[0.86409727]@,\$[1.1967905]@,\$[293.69959]@
\$[2.1809331]@,\$[1.0859976]@,\$[2.6423469]@,\$[3.0232285]@,\$[441.47769]@
\$[1.1886975]@,\$[1.7391873]@,\$[3.0531867]@,\$[2.4179442]@,\$[250.18044]@

CS19B025

alpha = 0.068352226

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X1 X1 X4 X3 + beta_2 X2 X2 X4 X1 X4 + beta_3 X3 X3 X1 X1 X2
+ beta_4 X4 X4 X3 X1 X1

PARAMATER FOR POPULATION RANGE: beta_2

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[2.0778386]@
\$[0.16810504]@,\$[0.098210367]@,\$[0.12044883]@,\$[0.19838792]@,\$[4.3484548]@
\$[0.20970711]@,\$[0.15252058]@,\$[0.12471753]@,\$[0.37874274]@,\$[1.879786]@
\$[0.18596271]@,\$[0.59483638]@,\$[0.24944176]@,\$[0.47423902]@,\$[3.2282666]@
\$[0.71542243]@,\$[0.27458878]@,\$[0.5913388]@,\$[0.76520087]@,\$[5.396866]@
\$[0.57356902]@,\$[0.71427881]@,\$[0.40378693]@,\$[0.27946714]@,\$[3.7155749]@
\$[0.56561206]@,\$[0.90533579]@,\$[0.37378987]@,\$[0.32535136]@,\$[3.7448881]@
\$[0.7457323]@,\$[1.1842122]@,\$[0.88231904]@,\$[0.95299361]@,\$[7.0435199]@
\$[0.60390086]@,\$[1.2077576]@,\$[1.2657228]@,\$[1.1904983]@,\$[11.472267]@
\$[0.58449474]@,\$[0.72032137]@,\$[1.2212423]@,\$[0.9898439]@,\$[5.8439261]@
\$[0.84097821]@,\$[1.5817351]@,\$[1.3922923]@,\$[1.3847228]@,\$[28.402044]@
\$[1.3813736]@,\$[2.1084167]@,\$[1.3576591]@,\$[1.0556844]@,\$[49.540797]@
\$[1.1032359]@,\$[1.0943607]@,\$[1.7587647]@,\$[1.6927381]@,\$[45.393152]@
\$[2.4065675]@,\$[1.4433026]@,\$[1.443517]@,\$[2.4382012]@,\$[423.32498]@
\$[2.7413823]@,\$[2.3125403]@,\$[2.7732767]@,\$[1.2812232]@,\$[453.5691]@
\$[0.85124729]@,\$[1.2495729]@,\$[2.8598668]@,\$[1.192861]@,\$[23.516843]@
\$[2.5772596]@,\$[1.9625557]@,\$[2.937003]@,\$[1.7239534]@,\$[580.67099]@
\$[2.5675419]@,\$[1.2125502]@,\$[3.0728358]@,\$[1.7984558]@,\$[564.6394]@
\$[1.9750745]@,\$[1.6095188]@,\$[2.4185885]@,\$[3.0108705]@,\$[581.27098]@
\$[1.897768]@,\$[3.7608851]@,\$[3.2880532]@,\$[1.5532444]@,\$[431.79738]@

CS19B072

alpha = 0.19780502

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X2 X1 X3 X2 + beta_2 X2 X1 X1 X4 X4 + beta_3 X3 X3 X2 X1 X3
+ beta_4 X4 X2 X4 X2 X3

PARAMATER FOR POPULATION RANGE: beta_3

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[-2.5132291]@
\$[0.13491247]@,\$[0.12342091]@,\$[0.13161493]@,\$[0.19634496]@,\$[1.4712619]@
\$[0.26986431]@,\$[0.1433792]@,\$[0.38428409]@,\$[0.27510498]@,\$[0.054413741]@
\$[0.29061341]@,\$[0.22207768]@,\$[0.52762689]@,\$[0.28145876]@,\$[0.096678082]@
\$[0.33504098]@,\$[0.45029395]@,\$[0.67219739]@,\$[0.42921741]@,\$[1.1957168]@

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$\$[0.57540859]@, \$[0.87906531]@, \$[0.51457323]@, \$[0.3416027]@, \$[1.0890368]@$
 $\$[0.98313118]@, \$[0.80143292]@, \$[0.85679119]@, \$[0.61678246]@, \$[4.1179459]@$
 $\$[0.35968113]@, \$[1.0977324]@, \$[1.3180789]@, \$[0.43472909]@, \$[7.2546585]@$
 $\$[0.55760194]@, \$[1.4543997]@, \$[0.81812013]@, \$[0.76562138]@, \$[8.2142641]@$
 $\$[1.0252814]@, \$[1.4143416]@, \$[0.68854747]@, \$[1.5630981]@, \$[35.012919]@$
 $\$[1.740219]@, \$[1.3797346]@, \$[1.6411981]@, \$[0.96133112]@, \$[94.96589]@$
 $\$[0.64044314]@, \$[0.68758816]@, \$[0.80273889]@, \$[0.78703959]@, \$[4.0371806]@$
 $\$[0.72755337]@, \$[2.0773475]@, \$[2.3867028]@, \$[2.0895904]@, \$[375.6148]@$
 $\$[1.663417]@, \$[1.1504117]@, \$[1.4632464]@, \$[1.4421708]@, \$[83.091997]@$
 $\$[1.30945]@, \$[0.78812646]@, \$[1.8209]@, \$[1.9138174]@, \$[74.316646]@$
 $\$[1.0266112]@, \$[2.2268013]@, \$[1.4691426]@, \$[1.0397208]@, \$[96.256412]@$
 $\$[0.8931472]@, \$[1.6008666]@, \$[3.0952784]@, \$[2.7783461]@, \$[605.97227]@$
 $\$[2.6805007]@, \$[1.2233095]@, \$[1.1966672]@, \$[1.9922794]@, \$[202.32556]@$
 $\$[1.2274444]@, \$[2.1411834]@, \$[0.99238379]@, \$[3.0293385]@, \$[344.08735]@$
 $\$[3.3649638]@, \$[1.4292199]@, \$[2.2319319]@, \$[3.4204105]@, \$[1288.648]@$

ED17B016

alpha = 0.13132048

MLR FIT FUNCTION

$Y = \beta_0 + \beta_1 X_1 X_1 X_3 X_3 X_2 + \beta_2 X_2 X_4 X_4 X_2 X_1 + \beta_3 X_3 X_2 X_3 X_1 X_1$
 $+ \beta_4 X_4 X_2 X_2 X_4 X_2$

PARAMATER FOR POPULATION RANGE: beta_2

DATA COLUMNS X1 X2 X3 X4 Y

$\$[0]@, \$[0]@, \$[0]@, \$[0]@, \$[3.0239485]@$
 $\$[0.094664216]@, \$[0.17685095]@, \$[0.089958875]@, \$[0.063134749]@, \$[3.5260073]@$
 $\$[0.25197768]@, \$[0.16943217]@, \$[0.37044745]@, \$[0.32680612]@, \$[-1.0475871]@$
 $\$[0.54186815]@, \$[0.52907322]@, \$[0.17629954]@, \$[0.58979573]@, \$[1.9484365]@$
 $\$[0.70786251]@, \$[0.53808194]@, \$[0.62663382]@, \$[0.65742595]@, \$[1.6715982]@$
 $\$[0.66191355]@, \$[0.68290921]@, \$[0.93162598]@, \$[0.89233442]@, \$[3.8907349]@$
 $\$[0.39646203]@, \$[0.70781136]@, \$[0.55856657]@, \$[0.889015]@, \$[3.8910245]@$
 $\$[1.3052375]@, \$[1.0053718]@, \$[0.81095925]@, \$[0.37400315]@, \$[10.760244]@$
 $\$[1.1593976]@, \$[1.2906312]@, \$[1.3030637]@, \$[1.5545104]@, \$[38.038196]@$
 $\$[0.8467459]@, \$[0.77139841]@, \$[0.53797076]@, \$[1.7501439]@, \$[9.0279685]@$
 $\$[1.9998597]@, \$[1.6475354]@, \$[1.5075872]@, \$[1.1447095]@, \$[129.2566]@$
 $\$[0.81768283]@, \$[1.2745852]@, \$[1.9594882]@, \$[0.76502717]@, \$[31.545377]@$
 $\$[2.0859383]@, \$[2.1218485]@, \$[0.78996147]@, \$[1.7758383]@, \$[115.45003]@$
 $\$[1.9805794]@, \$[2.3439418]@, \$[2.3277033]@, \$[2.2988237]@, \$[556.80446]@$
 $\$[2.4750828]@, \$[1.4110313]@, \$[2.3539072]@, \$[2.3539276]@, \$[388.48846]@$
 $\$[2.8326705]@, \$[2.4198271]@, \$[2.2959723]@, \$[2.1761646]@, \$[926.61018]@$
 $\$[1.0108229]@, \$[2.2863141]@, \$[2.2182174]@, \$[3.1517]@, \$[457.7091]@$
 $\$[1.0270795]@, \$[1.8094361]@, \$[2.7049505]@, \$[1.4137257]@, \$[142.65146]@$
 $\$[2.0888233]@, \$[0.98090141]@, \$[1.036087]@, \$[1.4281508]@, \$[39.668497]@$
 $\$[1.7501058]@, \$[1.2148946]@, \$[1.1394952]@, \$[3.0133003]@, \$[63.910078]@$

ED17B019

alpha = 0.16236258

BT2022_qiv_22_alldata

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X2 X2 X3 X2 + beta_2 X2 X2 X3 X1 X3 + beta_3 X3 X3 X4 X4 X2
+ beta_4 X4 X3 X2 X4 X1

PARAMATER FOR POPULATION RANGE: beta_2

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[-0.30193747]@
\$[0.14383068]@,\$[0.079720885]@,\$[0.13911949]@,\$[0.17242017]@,\$[0.41831605]@
\$[0.19130649]@,\$[0.35306879]@,\$[0.29332077]@,\$[0.17282878]@,\$[-0.001050391]@
\$[0.22346208]@,\$[0.55062413]@,\$[0.5588287]@,\$[0.15123552]@,\$[1.6541055]@
\$[0.35561823]@,\$[0.42480211]@,\$[0.40863383]@,\$[0.56468624]@,\$[1.4747758]@
\$[0.57925421]@,\$[0.78484684]@,\$[0.42539096]@,\$[0.38908808]@,\$[1.4746989]@
\$[0.9918038]@,\$[0.9066453]@,\$[0.93121199]@,\$[0.6425144]@,\$[9.1290733]@
\$[1.2775974]@,\$[1.0116324]@,\$[1.3613742]@,\$[0.60002376]@,\$[25.246863]@
\$[1.2838673]@,\$[0.78941361]@,\$[1.0432296]@,\$[1.1450033]@,\$[14.037203]@
\$[1.7435667]@,\$[1.239017]@,\$[1.3582266]@,\$[0.76836768]@,\$[55.028671]@
\$[0.60876703]@,\$[1.8948398]@,\$[0.84175443]@,\$[1.9759558]@,\$[37.583509]@
\$[1.8705655]@,\$[1.8330716]@,\$[1.829287]@,\$[1.9613036]@,\$[315.66217]@
\$[0.61531074]@,\$[2.0420142]@,\$[0.84415537]@,\$[2.138034]@,\$[50.095296]@
\$[2.001701]@,\$[0.82362912]@,\$[2.5104631]@,\$[2.4585607]@,\$[203.98877]@
\$[2.4859018]@,\$[1.3837448]@,\$[2.3898163]@,\$[1.5433564]@,\$[339.0298]@
\$[1.080187]@,\$[1.534921]@,\$[1.9439154]@,\$[2.2389899]@,\$[196.78862]@
\$[1.7774168]@,\$[3.0300313]@,\$[1.8493369]@,\$[1.370523]@,\$[695.80516]@
\$[1.8302562]@,\$[1.7716024]@,\$[1.2432882]@,\$[1.6641564]@,\$[136.46744]@
\$[2.5263357]@,\$[3.3956212]@,\$[3.3877501]@,\$[1.1240498]@,\$[3506.1849]@
\$[3.4992267]@,\$[1.2216249]@,\$[3.6336019]@,\$[1.6757325]@,\$[811.31886]@

ED17B022

alpha = 0.063580491

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X3 X1 X2 X4 + beta_2 X2 X1 X4 X4 X1 + beta_3 X3 X2 X3 X1 X4
+ beta_4 X4 X1 X1 X2 X2

PARAMATER FOR POPULATION RANGE: beta_2

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[-0.05890092]@
\$[0.11712732]@,\$[0.16402254]@,\$[0.083949943]@,\$[0.1317197]@,\$[0.81131671]@
\$[0.12250171]@,\$[0.30687651]@,\$[0.28597568]@,\$[0.15299414]@,\$[1.0382966]@
\$[0.44106498]@,\$[0.49678464]@,\$[0.33460275]@,\$[0.45582556]@,\$[0.99505718]@
\$[0.7936944]@,\$[0.28169857]@,\$[0.77619771]@,\$[0.69413259]@,\$[1.3851735]@
\$[0.76827964]@,\$[0.92330783]@,\$[0.25456809]@,\$[0.41060458]@,\$[0.79075277]@
\$[0.97305254]@,\$[1.132528]@,\$[1.182446]@,\$[1.1759053]@,\$[-0.56828205]@
\$[0.95172068]@,\$[0.83953479]@,\$[0.45568269]@,\$[0.59606011]@,\$[-0.17064249]@
\$[0.66870417]@,\$[0.66860402]@,\$[0.79979837]@,\$[1.1525298]@,\$[-0.79592445]@
\$[1.6741861]@,\$[0.5633837]@,\$[0.54795549]@,\$[1.4541588]@,\$[-0.7121418]@
\$[1.5378917]@,\$[1.5522248]@,\$[1.8824474]@,\$[0.98089925]@,\$[5.8910584]@
\$[2.0912191]@,\$[1.1454886]@,\$[2.0721068]@,\$[2.0531145]@,\$[-4.9704198]@
\$[2.1828528]@,\$[1.4452969]@,\$[0.90327649]@,\$[1.3296669]@,\$[13.196073]@
\$[2.2674075]@,\$[2.3202134]@,\$[2.1699657]@,\$[1.3292203]@,\$[46.995689]@

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\$[2.2027639]@,\$[1.4947302]@,\$[2.7144675]@,\$[1.4184015]@,\$[7.9318447]@
 \$[2.26356]@,\$[1.5933391]@,\$[1.3065363]@,\$[1.9016029]@,\$[12.954913]@
 \$[2.2270102]@,\$[1.6836178]@,\$[2.1378337]@,\$[1.9266104]@,\$[13.328854]@
 \$[1.8608434]@,\$[2.2877701]@,\$[1.0642274]@,\$[2.4359597]@,\$[22.765189]@
 \$[2.9422947]@,\$[2.3075143]@,\$[2.8037882]@,\$[1.5373301]@,\$[80.646154]@
 \$[1.8093996]@,\$[2.6099277]@,\$[3.4658377]@,\$[0.95924838]@,\$[10.888202]@

ED17B026

alpha = 0.083298458

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X1 X1 X2 X2 + beta_2 X2 X3 X3 X3 X3 + beta_3 X3 X3 X3 X3 X3
 + beta_4 X4 X4 X1 X3 X4

PARAMATER FOR POPULATION RANGE: beta_0

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[-0.24853669]@
 \$[0.058870051]@,\$[0.14237522]@,\$[0.053464682]@,\$[0.1614369]@,\$[-1.9897131]@
 \$[0.26884356]@,\$[0.10558922]@,\$[0.3718024]@,\$[0.10153062]@,\$[1.4847428]@
 \$[0.2941509]@,\$[0.35823519]@,\$[0.37067685]@,\$[0.27337198]@,\$[1.2565902]@
 \$[0.372241]@,\$[0.44885407]@,\$[0.57981131]@,\$[0.79691582]@,\$[-0.56985397]@
 \$[0.4540718]@,\$[0.46062577]@,\$[0.33204758]@,\$[0.37076692]@,\$[0.65449443]@
 \$[0.65988699]@,\$[0.78802882]@,\$[0.63461891]@,\$[0.94043939]@,\$[0.68426288]@
 \$[1.3168988]@,\$[0.51841196]@,\$[0.92846465]@,\$[1.1321571]@,\$[7.0943379]@
 \$[1.3202326]@,\$[1.3028812]@,\$[0.83476333]@,\$[1.3341295]@,\$[22.272104]@
 \$[0.93628457]@,\$[1.6278623]@,\$[1.2735375]@,\$[0.75191197]@,\$[24.181157]@
 \$[1.2005217]@,\$[0.87021728]@,\$[0.55411242]@,\$[1.8766104]@,\$[14.495006]@
 \$[1.145588]@,\$[1.0203956]@,\$[2.1581093]@,\$[2.0192564]@,\$[162.38847]@
 \$[1.9407075]@,\$[1.3748417]@,\$[2.3510241]@,\$[1.458753]@,\$[271.80045]@
 \$[1.7769184]@,\$[1.2978745]@,\$[1.9345249]@,\$[1.8593428]@,\$[156.24159]@
 \$[2.5362371]@,\$[2.4984906]@,\$[0.77098889]@,\$[1.0260686]@,\$[400.67517]@
 \$[0.89417344]@,\$[1.6809976]@,\$[2.9308129]@,\$[2.1323104]@,\$[626.19384]@
 \$[1.9345784]@,\$[3.0000085]@,\$[2.2260093]@,\$[1.0239942]@,\$[469.88894]@
 \$[2.7071952]@,\$[1.8428556]@,\$[0.87257724]@,\$[3.0670312]@,\$[400.92028]@
 \$[1.2132641]@,\$[2.7046345]@,\$[1.9066633]@,\$[1.7201208]@,\$[171.59335]@
 \$[2.4460477]@,\$[1.7449049]@,\$[2.8588776]@,\$[1.1102875]@,\$[705.49995]@

ED17B035

alpha = 0.17477109

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X1 X2 X3 X2 + beta_2 X2 X3 X1 X3 X4 + beta_3 X3 X2 X4 X3 X3
 + beta_4 X4 X3 X3 X3 X1

PARAMATER FOR POPULATION RANGE: beta_0

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[3.5177014]@
 \$[0.084518201]@,\$[0.15958843]@,\$[0.17254113]@,\$[0.18240856]@,\$[3.0474093]@
 \$[0.19453549]@,\$[0.21344696]@,\$[0.29218349]@,\$[0.23290841]@,\$[1.5361987]@
 \$[0.20257652]@,\$[0.26387618]@,\$[0.30173661]@,\$[0.43192175]@,\$[2.1242801]@

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\$[0.56208554]@,\$[0.22002444]@,\$[0.22269062]@,\$[0.63767282]@,\$[2.2795204]@
 \$[0.52127107]@,\$[0.86664985]@,\$[0.69174822]@,\$[0.77676244]@,\$[4.7898404]@
 \$[0.37517799]@,\$[0.6499616]@,\$[0.71934496]@,\$[0.45952654]@,\$[2.1890251]@
 \$[1.2940825]@,\$[1.057734]@,\$[0.56696487]@,\$[0.40177935]@,\$[7.3987197]@
 \$[0.9336965]@,\$[1.4706285]@,\$[0.5899529]@,\$[0.88857437]@,\$[10.61508]@
 \$[1.5566291]@,\$[1.4747878]@,\$[1.6718471]@,\$[1.2248145]@,\$[123.56275]@
 \$[1.171088]@,\$[1.3582525]@,\$[0.99310963]@,\$[1.4012171]@,\$[30.880295]@
 \$[1.6418543]@,\$[1.3147898]@,\$[0.75520374]@,\$[1.9311917]@,\$[30.7169]@
 \$[2.2857213]@,\$[1.6051062]@,\$[1.7720428]@,\$[1.9672166]@,\$[299.61178]@
 \$[2.5349699]@,\$[1.1569203]@,\$[1.2195167]@,\$[1.1489889]@,\$[78.234963]@
 \$[1.7902381]@,\$[1.2651726]@,\$[2.5170749]@,\$[0.88345156]@,\$[238.36504]@
 \$[1.6309273]@,\$[2.0645715]@,\$[2.1861402]@,\$[1.7591522]@,\$[465.78695]@
 \$[0.98517779]@,\$[2.5798009]@,\$[1.1321141]@,\$[2.6574115]@,\$[123.15965]@
 \$[2.4234778]@,\$[1.6430007]@,\$[1.0078556]@,\$[1.0278597]@,\$[87.473736]@
 \$[1.3700684]@,\$[1.4806871]@,\$[1.9588457]@,\$[3.2520942]@,\$[388.49427]@
 \$[3.0756464]@,\$[2.5400613]@,\$[2.3860654]@,\$[1.2861855]@,\$[1056.1918]@

ED17B036

alpha = 0.18902541

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X3 X2 X4 X2 + beta_2 X2 X1 X3 X1 X3 + beta_3 X3 X3 X2 X4 X3
 + beta_4 X4 X2 X1 X1 X1
 PARAMATER FOR POPULATION RANGE: beta_1
 DATA COLUMNS X1 X2 X3 X4 Y
 \$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[3.4482723]@
 \$[0.1255418]@,\$[0.068667225]@,\$[0.088850878]@,\$[0.13153963]@,\$[2.0772834]@
 \$[0.13283563]@,\$[0.30039218]@,\$[0.26661787]@,\$[0.30695025]@,\$[0.8975585]@
 \$[0.47855831]@,\$[0.58561251]@,\$[0.48818586]@,\$[0.41393565]@,\$[1.951845]@
 \$[0.73050623]@,\$[0.79735301]@,\$[0.76556129]@,\$[0.2596304]@,\$[2.467707]@
 \$[0.56767685]@,\$[0.53254691]@,\$[0.85715748]@,\$[0.54223322]@,\$[2.2184105]@
 \$[0.67294226]@,\$[1.0545399]@,\$[0.90631162]@,\$[1.1528104]@,\$[8.1450869]@
 \$[1.3425125]@,\$[0.62058021]@,\$[1.0803262]@,\$[0.72303654]@,\$[1.3017248]@
 \$[1.1928085]@,\$[1.0629204]@,\$[1.3454089]@,\$[0.89724714]@,\$[10.932409]@
 \$[0.91478635]@,\$[1.590474]@,\$[1.2999005]@,\$[1.4168663]@,\$[32.549546]@
 \$[0.60563987]@,\$[0.50786383]@,\$[1.9314666]@,\$[1.1867231]@,\$[13.027656]@
 \$[1.3530779]@,\$[1.0425858]@,\$[1.8941823]@,\$[1.0121693]@,\$[18.642541]@
 \$[1.3429382]@,\$[2.0227783]@,\$[1.459583]@,\$[1.6572632]@,\$[77.814544]@
 \$[2.1746341]@,\$[1.8654695]@,\$[2.089783]@,\$[1.1603878]@,\$[53.505922]@
 \$[0.79309454]@,\$[2.135867]@,\$[2.5223735]@,\$[1.4342704]@,\$[183.60908]@
 \$[2.4489687]@,\$[1.9213158]@,\$[1.8019161]@,\$[1.5763152]@,\$[49.22851]@
 \$[1.7930463]@,\$[2.4344195]@,\$[1.5551565]@,\$[1.0466794]@,\$[71.03813]@
 \$[2.6613209]@,\$[1.8912347]@,\$[3.344722]@,\$[1.3440504]@,\$[147.57422]@
 \$[1.4658318]@,\$[2.6959493]@,\$[1.5894722]@,\$[3.0982375]@,\$[324.18021]@
 \$[1.2110538]@,\$[3.799295]@,\$[1.4943267]@,\$[3.2909739]@,\$[558.11683]@

ED17B039

BT2022_qiv_22_alldata

```

alpha = 0.090170696
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X3 X1 X2 X4 + beta_2 X2 X4 X3 X2 X1 + beta_3 X3 X2 X2 X3 X3
+ beta_4 X4 X2 X2 X4 X4
PARAMATER FOR POPULATION RANGE: beta_4
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@[3.6637791]@
$[0.15493998]@,$[0.13202761]@,$[0.083229825]@,$[0.10680674]@,$[4.6151469]@
$[0.28742455]@,$[0.28112106]@,$[0.29970971]@,$[0.24513886]@,$[3.7979052]@
$[0.58660108]@,$[0.30412711]@,$[0.43604072]@,$[0.51560755]@,$[6.0933935]@
$[0.47300263]@,$[0.61872581]@,$[0.52080495]@,$[0.28835691]@,$[5.2834643]@
$[0.95181887]@,$[0.54183543]@,$[0.33004351]@,$[0.61384379]@,$[4.1631973]@
$[0.41443998]@,$[1.1793094]@,$[0.36379725]@,$[1.1239389]@,$[13.91122]@
$[1.3611594]@,$[0.80468869]@,$[1.1864838]@,$[0.68105207]@,$[7.7648746]@
$[1.035495]@,$[1.0211802]@,$[0.714249]@,$[0.89059106]@,$[10.513325]@
$[1.3738001]@,$[1.2791289]@,$[0.67856564]@,$[1.2001523]@,$[22.391556]@
$[0.85622593]@,$[1.3380374]@,$[1.4274938]@,$[1.8372872]@,$[64.887629]@
$[0.56740206]@,$[1.8791763]@,$[1.7697321]@,$[2.0487534]@,$[150.71894]@
$[1.478192]@,$[1.889778]@,$[0.93417581]@,$[1.5615956]@,$[87.519932]@
$[1.2502334]@,$[1.5138716]@,$[1.2269672]@,$[1.0148534]@,$[25.903968]@
$[1.0349752]@,$[2.6007879]@,$[0.80026644]@,$[0.72935964]@,$[25.066892]@
$[0.79062606]@,$[1.1104883]@,$[2.0945679]@,$[1.7874332]@,$[45.801273]@
$[2.5028918]@,$[2.9325623]@,$[1.5711363]@,$[2.9905877]@,$[1334.0516]@
$[1.5019596]@,$[2.7089758]@,$[3.0438854]@,$[2.2621964]@,$[569.09041]@
$[0.97797651]@,$[0.93090345]@,$[2.5757296]@,$[2.0748106]@,$[54.831183]@
$[2.3228432]@,$[2.4081043]@,$[3.5746052]@,$[3.6811384]@,$[1886.1917]@

```

ED17B041

```

alpha = 0.15516303
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X2 X4 X4 X3 + beta_2 X2 X2 X1 X1 X2 + beta_3 X3 X4 X4 X3 X1
+ beta_4 X4 X3 X2 X2 X3
PARAMATER FOR POPULATION RANGE: beta_0
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@[4.4736955]@
$[0.15805415]@,$[0.073300507]@,$[0.099199251]@,$[0.12297073]@,$[2.9237603]@
$[0.22086857]@,$[0.39044982]@,$[0.38276868]@,$[0.32146111]@,$[3.7616359]@
$[0.26556974]@,$[0.35665193]@,$[0.1626594]@,$[0.23315648]@,$[5.1470383]@
$[0.52227085]@,$[0.54114952]@,$[0.52182288]@,$[0.22426281]@,$[4.2637988]@
$[0.64235496]@,$[0.96426963]@,$[0.82071578]@,$[0.65151747]@,$[7.3705087]@
$[0.79130921]@,$[0.65233388]@,$[1.0329429]@,$[0.84276052]@,$[7.4436838]@
$[1.1585816]@,$[1.2293845]@,$[1.0229426]@,$[1.223893]@,$[20.655853]@
$[1.0351202]@,$[1.0167422]@,$[1.4430025]@,$[0.49264403]@,$[10.970809]@
$[0.74506306]@,$[0.54967385]@,$[0.89096424]@,$[1.5955464]@,$[8.9168358]@
$[1.5730596]@,$[1.4745615]@,$[1.848751]@,$[0.92804774]@,$[58.023629]@
$[0.72843539]@,$[0.55283061]@,$[2.0398984]@,$[1.2378428]@,$[22.584901]@
$[1.5119218]@,$[0.6472788]@,$[0.61796703]@,$[1.579486]@,$[10.820663]@

```

BT2022_qiv_22_alldata

```

$[1.3772037]@,$[1.9156505]@,$[2.0105387]@,$[1.5502662]@,$[153.69906]@
$[2.6723367]@,$[1.2950976]@,$[2.1366671]@,$[0.77333034]@,$[71.318544]@
$[1.3688764]@,$[2.3181822]@,$[2.0106421]@,$[2.4809877]@,$[351.92906]@
$[1.8318795]@,$[2.4713326]@,$[2.0595358]@,$[2.0993929]@,$[390.96422]@
$[1.5864966]@,$[1.85237]@,$[2.0692096]@,$[1.5248829]@,$[161.13]@
$[1.3476851]@,$[1.8692584]@,$[1.7949084]@,$[0.90761573]@,$[71.879317]@
$[1.1663325]@,$[3.614851]@,$[3.6868669]@,$[3.2726273]@,$[2895.4338]@

```

ED17B047

```

alpha = 0.11137175
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X2 X1 X3 X3 + beta_2 X2 X2 X4 X1 X1 + beta_3 X3 X3 X1 X3 X1
+ beta_4 X4 X2 X2 X4 X2
PARAMATER FOR POPULATION RANGE: beta_4
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@,$[3.322274]@
$[0.12735281]@,$[0.11247243]@,$[0.15949042]@,$[0.1211261]@,$[3.9344511]@
$[0.35153901]@,$[0.1642783]@,$[0.32341703]@,$[0.13784404]@,$[5.5755438]@
$[0.3133003]@,$[0.42865466]@,$[0.5196995]@,$[0.22325977]@,$[5.5124214]@
$[0.73654255]@,$[0.351496]@,$[0.58696669]@,$[0.51517857]@,$[6.3152089]@
$[0.9531287]@,$[0.72140688]@,$[0.74311271]@,$[0.63715596]@,$[7.7866938]@
$[0.75585028]@,$[0.94246989]@,$[0.53200921]@,$[0.81486087]@,$[8.3052101]@
$[0.40885978]@,$[1.2210882]@,$[1.2382522]@,$[0.6369497]@,$[6.7049137]@
$[1.3232013]@,$[1.2128264]@,$[0.77160312]@,$[0.99013098]@,$[24.152302]@
$[0.9574672]@,$[1.1335233]@,$[0.58844944]@,$[0.564819]@,$[10.306439]@
$[0.73707152]@,$[1.4848958]@,$[1.8932328]@,$[1.5602456]@,$[20.668823]@
$[1.389147]@,$[1.05868]@,$[1.1808251]@,$[0.93542282]@,$[30.95015]@
$[1.9704073]@,$[1.1331619]@,$[0.65396563]@,$[1.5356239]@,$[60.224651]@
$[0.71154442]@,$[1.2052108]@,$[1.4368891]@,$[2.5732706]@,$[7.5778736]@
$[1.8401819]@,$[2.2642924]@,$[0.82700858]@,$[1.967042]@,$[197.9446]@
$[2.584001]@,$[1.4702056]@,$[0.89902064]@,$[1.7949957]@,$[203.54208]@
$[0.80981429]@,$[2.4980524]@,$[1.0285861]@,$[1.384824]@,$[13.144376]@
$[2.0313468]@,$[3.194033]@,$[2.6968011]@,$[3.0809664]@,$[951.547]@
$[2.2598136]@,$[1.292932]@,$[1.8849519]@,$[3.5474679]@,$[293.52003]@
$[1.8485765]@,$[3.5780774]@,$[2.5443497]@,$[2.1012442]@,$[753.9478]@

```

ED17B053

```

alpha = 0.15073604
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X1 X1 X1 X1 + beta_2 X2 X1 X2 X2 X2 + beta_3 X3 X2 X4 X4 X1
+ beta_4 X4 X3 X3 X2 X2
PARAMATER FOR POPULATION RANGE: beta_2
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@,$[1.419514]@
$[0.094943299]@,$[0.16069973]@,$[0.094117745]@,$[0.11241597]@,$[0.68777627]@
$[0.16923946]@,$[0.27162918]@,$[0.32902063]@,$[0.24563609]@,$[0.29776056]@

```

BT2022_qiv_22_alldata

\$[0.35686671]@,\$[0.23935209]@,\$[0.26264906]@,\$[0.26896109]@,\$[1.688664]@
 \$[0.48014573]@,\$[0.70302766]@,\$[0.69903371]@,\$[0.5227447]@,\$[2.5442684]@
 \$[0.33156131]@,\$[0.34856702]@,\$[0.62769463]@,\$[0.52277088]@,\$[2.42617]@
 \$[0.90252267]@,\$[0.54122151]@,\$[1.1174879]@,\$[0.4951819]@,\$[4.3853892]@
 \$[1.3918951]@,\$[1.1755866]@,\$[0.66305701]@,\$[0.79615474]@,\$[20.347403]@
 \$[1.5042]@,\$[0.40373973]@,\$[0.85873748]@,\$[0.66844365]@,\$[26.667945]@
 \$[1.0018771]@,\$[0.87416866]@,\$[1.7794878]@,\$[1.7244562]@,\$[27.607442]@
 \$[0.9977606]@,\$[1.6828524]@,\$[1.5205708]@,\$[0.97354014]@,\$[42.949839]@
 \$[0.968694]@,\$[2.1725827]@,\$[1.7214128]@,\$[0.57515883]@,\$[57.394124]@
 \$[1.1148628]@,\$[0.84957265]@,\$[1.8294297]@,\$[1.7389891]@,\$[29.722151]@
 \$[1.3462747]@,\$[0.86576784]@,\$[2.3786127]@,\$[1.2321724]@,\$[43.253953]@
 \$[2.2894401]@,\$[2.7753813]@,\$[2.1320622]@,\$[1.4009143]@,\$[528.8838]@
 \$[2.2227112]@,\$[2.6880056]@,\$[2.0803861]@,\$[1.7277279]@,\$[521.08029]@
 \$[1.7039727]@,\$[2.879686]@,\$[2.7638235]@,\$[1.1969435]@,\$[504.62367]@
 \$[2.8435738]@,\$[1.0683562]@,\$[2.1270973]@,\$[2.2610205]@,\$[654.99669]@
 \$[3.0624736]@,\$[0.97307059]@,\$[2.8337685]@,\$[3.3746005]@,\$[1007.2483]@
 \$[1.6364981]@,\$[1.6378662]@,\$[2.2940134]@,\$[2.5947908]@,\$[245.86488]@

ED17B056

alpha = 0.19456354

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X2 X2 X1 X2 + beta_2 X2 X2 X2 X2 X4 + beta_3 X3 X4 X2 X2 X3
 + beta_4 X4 X1 X1 X1 X4
 PARAMATER FOR POPULATION RANGE: beta_3
 DATA COLUMNS X1 X2 X3 X4 Y
 \$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[0.82588892]@
 \$[0.081034681]@,\$[0.13963741]@,\$[0.13968908]@,\$[0.087579349]@,\$[2.1171027]@
 \$[0.31702884]@,\$[0.33067415]@,\$[0.27011426]@,\$[0.3406196]@,\$[2.8908786]@
 \$[0.28295508]@,\$[0.15329945]@,\$[0.56737534]@,\$[0.34684418]@,\$[1.0349943]@
 \$[0.72200618]@,\$[0.68166505]@,\$[0.28621609]@,\$[0.40732242]@,\$[3.9698035]@
 \$[0.4373477]@,\$[0.40630611]@,\$[0.30810201]@,\$[0.33103854]@,\$[1.4509629]@
 \$[0.68203954]@,\$[0.63754242]@,\$[0.79782761]@,\$[0.88307297]@,\$[5.9754285]@
 \$[0.83730961]@,\$[1.3921185]@,\$[1.3419002]@,\$[1.2152654]@,\$[39.863063]@
 \$[1.0463411]@,\$[0.92833344]@,\$[0.58039878]@,\$[1.4799714]@,\$[24.607522]@
 \$[0.53249563]@,\$[1.4139786]@,\$[0.64669158]@,\$[0.78475412]@,\$[13.284835]@
 \$[1.1275525]@,\$[1.911296]@,\$[1.1303407]@,\$[0.50159869]@,\$[55.568151]@
 \$[0.93736547]@,\$[1.871804]@,\$[1.2041009]@,\$[1.4031908]@,\$[85.602998]@
 \$[1.4757333]@,\$[1.56941]@,\$[1.1459048]@,\$[1.1950018]@,\$[87.473776]@
 \$[2.4161547]@,\$[1.4404976]@,\$[2.0152754]@,\$[2.1669666]@,\$[609.92111]@
 \$[1.2512764]@,\$[1.5830451]@,\$[1.0783534]@,\$[2.3863658]@,\$[141.03272]@
 \$[2.9240168]@,\$[2.3890664]@,\$[1.1541002]@,\$[1.3410084]@,\$[834.3883]@
 \$[3.0601831]@,\$[1.6226425]@,\$[3.0224543]@,\$[0.80526761]@,\$[447.78212]@
 \$[3.1987949]@,\$[2.3066159]@,\$[1.2985095]@,\$[1.1937229]@,\$[871.86778]@
 \$[1.4030611]@,\$[3.2002355]@,\$[2.9134874]@,\$[2.650439]@,\$[1788.5447]@
 \$[2.8941277]@,\$[1.2224657]@,\$[3.2369446]@,\$[1.9175738]@,\$[981.0452]@

BT2022_qiv_22_alldata

EE17B112
alpha = 0.17617017
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X2 X4 X4 X4 + beta_2 X2 X2 X2 X3 X2 + beta_3 X3 X1 X4 X3 X2
+ beta_4 X4 X3 X1 X1 X2
PARAMATER FOR POPULATION RANGE: beta_4
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@[6.4432233]@
\$[0.05271767]@,\$[0.1484458]@,\$[0.114864]@,\$[0.17015016]@,\$[7.5035202]@
\$[0.11330615]@,\$[0.39544068]@,\$[0.25836384]@,\$[0.1576862]@,\$[7.1130729]@
\$[0.21461868]@,\$[0.25983541]@,\$[0.15167636]@,\$[0.59351928]@,\$[6.7963563]@
\$[0.59053111]@,\$[0.21641897]@,\$[0.70189509]@,\$[0.48901178]@,\$[7.0894518]@
\$[0.26948075]@,\$[0.49983954]@,\$[0.26280044]@,\$[0.51461263]@,\$[6.3461413]@
\$[0.58079581]@,\$[0.61719986]@,\$[1.0511673]@,\$[1.0072078]@,\$[10.190667]@
\$[1.3109154]@,\$[1.3486192]@,\$[0.86981651]@,\$[1.0919139]@,\$[18.205157]@
\$[1.4900018]@,\$[1.1549761]@,\$[0.82040855]@,\$[1.3848124]@,\$[33.739328]@
\$[0.8074695]@,\$[1.4962749]@,\$[1.2739082]@,\$[0.88078879]@,\$[4.1120018]@
\$[1.6807412]@,\$[1.8563143]@,\$[1.8531994]@,\$[1.8604454]@,\$[132.42273]@
\$[0.88628268]@,\$[2.0164707]@,\$[2.0828962]@,\$[1.4266935]@,\$[2.2959991]@
\$[2.1205419]@,\$[1.2260313]@,\$[0.93069825]@,\$[1.1512789]@,\$[31.917399]@
\$[0.7375221]@,\$[0.98163519]@,\$[0.93578091]@,\$[0.80880444]@,\$[9.1288262]@
\$[1.7671473]@,\$[1.1570388]@,\$[2.0016345]@,\$[2.1920381]@,\$[168.08315]@
\$[2.7280483]@,\$[2.7268306]@,\$[2.3359494]@,\$[0.84311937]@,\$[-117.35045]@
\$[1.8415966]@,\$[1.3988257]@,\$[2.928162]@,\$[1.9066155]@,\$[201.82879]@
\$[1.5357385]@,\$[1.6545695]@,\$[2.7353963]@,\$[2.7046037]@,\$[388.43075]@
\$[0.94978159]@,\$[2.9510428]@,\$[3.2735045]@,\$[1.4687061]@,\$[-285.29719]@
\$[3.2475123]@,\$[1.5289257]@,\$[1.6437999]@,\$[3.6300164]@,\$[1409.9893]@

EE17B115

alpha = 0.1407721
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X3 X1 X1 X2 + beta_2 X2 X3 X3 X3 X2 + beta_3 X3 X4 X1 X4 X1
+ beta_4 X4 X2 X4 X1 X2
PARAMATER FOR POPULATION RANGE: beta_2
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@[0.99306355]@
\$[0.17896414]@,\$[0.12377548]@,\$[0.097943721]@,\$[0.14213851]@,\$[0.11806549]@
\$[0.1019227]@,\$[0.32558458]@,\$[0.36095657]@,\$[0.26423102]@,\$[1.4416258]@
\$[0.32257897]@,\$[0.21777641]@,\$[0.54173485]@,\$[0.52975574]@,\$[2.8521402]@
\$[0.63006084]@,\$[0.5993401]@,\$[0.36466416]@,\$[0.36688104]@,\$[-0.41394563]@
\$[0.84089712]@,\$[0.30591633]@,\$[0.83181352]@,\$[0.90053678]@,\$[2.2212244]@
\$[0.50855045]@,\$[0.46232034]@,\$[1.102833]@,\$[0.8798911]@,\$[3.2767731]@
\$[0.90654048]@,\$[1.0966729]@,\$[1.379019]@,\$[0.70466581]@,\$[12.977018]@
\$[0.54581959]@,\$[0.83889382]@,\$[1.1725378]@,\$[0.43227341]@,\$[0.64198396]@
\$[1.5666438]@,\$[1.0932156]@,\$[0.91335858]@,\$[0.82638423]@,\$[10.958894]@
\$[1.049558]@,\$[0.6492325]@,\$[1.2748979]@,\$[0.61079588]@,\$[4.8277233]@
\$[1.9458489]@,\$[1.4545717]@,\$[1.6507755]@,\$[2.1996632]@,\$[178.63697]@

```

BT2022_qiv_22_alldata
$[2.0451751]@,$[1.5195722]@,$[1.9387812]@,$[1.5608814]@,$[133.11896]@
$[1.4970928]@,$[2.0694925]@,$[1.3217277]@,$[1.9086681]@,$[176.01978]@
$[1.6087814]@,$[1.0119029]@,$[1.0145469]@,$[1.288847]@,$[24.496931]@
$[1.454373]@,$[2.087192]@,$[1.2440095]@,$[2.2357131]@,$[223.67906]@
$[1.8485583]@,$[3.0979743]@,$[3.1179496]@,$[2.5811125]@,$[1614.3966]@
$[1.208937]@,$[2.6882053]@,$[2.9117137]@,$[1.1797578]@,$[598.35617]@
$[1.9239705]@,$[1.5478025]@,$[0.97123289]@,$[1.1126314]@,$[42.912674]@
$[3.1073388]@,$[1.7197391]@,$[2.4094105]@,$[1.300521]@,$[235.46453]@
```

EE17B130

alpha = 0.19051184

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X3 X2 X1 X1 + beta_2 X2 X4 X3 X1 X1 + beta_3 X3 X4 X4 X4
+ beta_4 X4 X1 X2 X2 X3

PARAMATER FOR POPULATION RANGE: beta_2

DATA COLUMNS X1 X2 X3 X4 Y

```

$[0]@,$[0]@,$[0]@,$[0]@,$[3.6889244]@
$[0.080933121]@,$[0.1499418]@,$[0.10275353]@,$[0.16172318]@,$[4.4900738]@
$[0.27432528]@,$[0.23399953]@,$[0.31023566]@,$[0.1528608]@,$[4.2624109]@
$[0.24011951]@,$[0.52291831]@,$[0.2358486]@,$[0.5390674]@,$[4.5668232]@
$[0.33743977]@,$[0.76679937]@,$[0.2052185]@,$[0.72297214]@,$[5.8578289]@
$[0.6067412]@,$[0.7133044]@,$[0.85722702]@,$[0.585688]@,$[3.307811]@
$[1.0561538]@,$[0.96724978]@,$[0.91757302]@,$[0.90089042]@,$[4.5035947]@
$[1.1538186]@,$[1.2073283]@,$[1.0604369]@,$[0.65786441]@,$[8.1611458]@
$[0.63381632]@,$[0.41190081]@,$[0.58443017]@,$[0.98125336]@,$[0.61216257]@
$[0.74563454]@,$[1.6355803]@,$[1.7326376]@,$[0.67183632]@,$[10.971036]@
$[1.1643158]@,$[0.83589511]@,$[1.5125683]@,$[1.1443203]@,$[-1.6225978]@
$[0.75783277]@,$[1.1712105]@,$[1.5981948]@,$[1.2235015]@,$[-0.54520789]@
$[1.5200174]@,$[1.5704226]@,$[0.70874502]@,$[1.8852694]@,$[-10.434266]@
$[1.1121496]@,$[1.5602886]@,$[2.387648]@,$[0.72144735]@,$[19.954736]@
$[1.9571665]@,$[0.78145819]@,$[2.0531201]@,$[1.0713098]@,$[4.9760044]@
$[2.5874656]@,$[2.2513357]@,$[2.8103652]@,$[2.6710049]@,$[-156.89861]@
$[0.89745544]@,$[2.5257374]@,$[0.93765433]@,$[1.4202908]@,$[18.732409]@
$[2.4327406]@,$[3.2195622]@,$[2.8233283]@,$[2.6502485]@,$[189.39917]@
$[1.6937345]@,$[3.0565365]@,$[3.0649352]@,$[1.8907034]@,$[197.34316]@
$[3.444429]@,$[1.1731308]@,$[0.98822834]@,$[1.1175625]@,$[21.635335]@
```

EE17B131

alpha = 0.088021954

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X3 X3 X3 X1 + beta_2 X2 X1 X1 X4 X3 + beta_3 X3 X4 X1 X4 X4
+ beta_4 X4 X4 X1 X1 X2

PARAMATER FOR POPULATION RANGE: beta_2

DATA COLUMNS X1 X2 X3 X4 Y

```

$[0]@,$[0]@,$[0]@,$[0]@,$[5.1075391]@
$[0.11403398]@,$[0.16612761]@,$[0.15992373]@,$[0.066338498]@,$[2.1895921]@
```

```

BT2022_qiv_22_alldata
$[0.28126503]@,$[0.33414428]@,$[0.38073869]@,$[0.28030476]@,$[5.9293401]@
$[0.17534708]@,$[0.32123651]@,$[0.21591937]@,$[0.37901864]@,$[6.0843867]@
$[0.220471]@,$[0.57599299]@,$[0.34822704]@,$[0.3298043]@,$[4.3671387]@
$[0.61344852]@,$[0.56019734]@,$[0.62898729]@,$[0.39630677]@,$[3.8417042]@
$[0.58267229]@,$[0.54162799]@,$[0.91539887]@,$[0.40340148]@,$[3.3149009]@
$[0.54372332]@,$[0.47501338]@,$[1.1807682]@,$[0.84471443]@,$[5.498434]@
$[1.080989]@,$[1.3888301]@,$[0.83577412]@,$[0.70594253]@,$[10.163055]@
$[0.49536138]@,$[0.53850898]@,$[1.4553557]@,$[1.62355583]@,$[14.491494]@
$[0.57315184]@,$[0.54808723]@,$[0.88972273]@,$[1.0458663]@,$[8.3655408]@
$[0.88283127]@,$[0.68741816]@,$[1.7955568]@,$[1.6264636]@,$[34.47591]@
$[0.78805634]@,$[1.0480539]@,$[1.340517]@,$[0.66715687]@,$[5.8345607]@
$[2.1982779]@,$[1.2332891]@,$[1.4183836]@,$[1.9316575]@,$[197.42247]@
$[1.0109642]@,$[0.75040843]@,$[1.74925]@,$[0.95384671]@,$[15.126083]@
$[0.96569555]@,$[2.9707358]@,$[2.165269]@,$[2.2801056]@,$[153.76626]@
$[2.8603842]@,$[2.5432603]@,$[1.9470579]@,$[0.91430137]@,$[110.57043]@
$[2.3473715]@,$[1.3728152]@,$[3.1078511]@,$[1.8366105]@,$[313.7019]@
$[2.9140699]@,$[3.5903845]@,$[1.5546163]@,$[1.7333874]@,$[577.0225]@
$[3.1356639]@,$[3.3097592]@,$[3.6918883]@,$[1.7926674]@,$[819.48722]@

```

```

EE18B017
alpha = 0.054052926
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X1 X2 X3 X2 + beta_2 X2 X3 X4 X1 X3 + beta_3 X3 X1 X3 X2 X3
+ beta_4 X4 X4 X4 X4 X2
PARAMATER FOR POPULATION RANGE: beta_4
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@,$[4.7629238]@
$[0.17219936]@,$[0.15330682]@,$[0.19321342]@,$[0.061505987]@,$[4.7044944]@
$[0.25961597]@,$[0.27828275]@,$[0.18935704]@,$[0.26484716]@,$[7.1561857]@
$[0.21228626]@,$[0.16674929]@,$[0.4271225]@,$[0.41340536]@,$[3.6124498]@
$[0.62365355]@,$[0.27783851]@,$[0.71853753]@,$[0.79397426]@,$[3.3736395]@
$[0.43735875]@,$[0.79629535]@,$[0.3488016]@,$[0.97807003]@,$[3.2584001]@
$[0.42933901]@,$[0.46069913]@,$[1.1351422]@,$[0.82319753]@,$[5.4771609]@
$[0.39719153]@,$[0.48735473]@,$[0.39114979]@,$[1.3006137]@,$[4.7486337]@
$[0.78025663]@,$[0.83552196]@,$[1.5949166]@,$[0.74984888]@,$[19.715235]@
$[1.4325532]@,$[1.5654514]@,$[1.4855002]@,$[0.90330797]@,$[49.957962]@
$[1.2161377]@,$[0.9042478]@,$[0.95874827]@,$[0.7768908]@,$[10.984315]@
$[0.72686054]@,$[2.0474826]@,$[0.82085755]@,$[0.62083925]@,$[9.8121062]@
$[1.3284308]@,$[1.8879515]@,$[0.75036121]@,$[0.93043889]@,$[12.511972]@
$[1.0693771]@,$[1.9243073]@,$[2.3413233]@,$[1.5107248]@,$[168.45728]@
$[2.2841761]@,$[1.0735797]@,$[0.99427542]@,$[2.7178023]@,$[0.46062309]@
$[2.9481195]@,$[2.6439279]@,$[2.3955155]@,$[2.1694533]@,$[704.81814]@
$[2.5487103]@,$[2.2199802]@,$[0.97689922]@,$[1.5329336]@,$[40.641211]@
$[3.0141705]@,$[2.2608967]@,$[0.99323219]@,$[2.9164301]@,$[-7.1651752]@
$[0.92684148]@,$[2.2898648]@,$[3.4831792]@,$[2.3283229]@,$[552.70346]@
$[1.1312115]@,$[2.2398809]@,$[2.305464]@,$[1.2407591]@,$[197.58413]@

```

BT2022_qiv_22_alldata

EE18B029
alpha = 0.16979313
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X4 X3 X1 X3 + beta_2 X2 X2 X2 X1 X3 + beta_3 X3 X3 X4 X3 X3
+ beta_4 X4 X4 X3 X1 X1
PARAMATER FOR POPULATION RANGE: beta_2
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[2.3767707]@
\$[0.18385429]@,\$[0.11440203]@,\$[0.19859034]@,\$[0.053210345]@,\$[-0.37359472]@
\$[0.23453453]@,\$[0.21371829]@,\$[0.34615995]@,\$[0.29947674]@,\$[1.8782152]@
\$[0.53515515]@,\$[0.26536188]@,\$[0.15056239]@,\$[0.16549367]@,\$[1.2987204]@
\$[0.25669728]@,\$[0.32077604]@,\$[0.3871384]@,\$[0.27770997]@,\$[0.54139818]@
\$[0.9586275]@,\$[0.92304521]@,\$[0.39022661]@,\$[0.65425529]@,\$[2.6852484]@
\$[0.35206595]@,\$[0.7436581]@,\$[0.46101668]@,\$[0.75619396]@,\$[0.95685528]@
\$[1.0602301]@,\$[1.3229082]@,\$[0.56499822]@,\$[1.0204482]@,\$[0.73001242]@
\$[0.6967528]@,\$[0.80936051]@,\$[0.68719623]@,\$[1.2802957]@,\$[2.6494766]@
\$[1.4652007]@,\$[0.60417318]@,\$[1.1235703]@,\$[0.93443217]@,\$[6.5200665]@
\$[1.6270863]@,\$[1.0833795]@,\$[1.5178497]@,\$[1.1077742]@,\$[15.135402]@
\$[1.6530192]@,\$[1.0606161]@,\$[1.543052]@,\$[2.0724962]@,\$[41.941181]@
\$[1.9998742]@,\$[1.3291177]@,\$[1.0824606]@,\$[2.2134562]@,\$[28.37414]@
\$[1.8818877]@,\$[1.4021089]@,\$[1.6919119]@,\$[0.82201234]@,\$[8.6839889]@
\$[2.1189093]@,\$[1.4632697]@,\$[1.9311659]@,\$[2.1745033]@,\$[94.650666]@
\$[1.8031674]@,\$[1.9565072]@,\$[1.7662101]@,\$[0.91275818]@,\$[-10.080625]@
\$[1.5587511]@,\$[3.0971002]@,\$[1.3556368]@,\$[2.6451349]@,\$[-47.435313]@
\$[2.1973774]@,\$[1.5377068]@,\$[1.7058487]@,\$[1.3243659]@,\$[28.652258]@
\$[2.4321751]@,\$[1.9736517]@,\$[2.9828335]@,\$[1.2371705]@,\$[127.2688]@
\$[2.1535591]@,\$[3.7351721]@,\$[0.983031]@,\$[1.3450517]@,\$[-145.36376]@

EE18B031
alpha = 0.081697565
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X2 X4 X2 X3 + beta_2 X2 X2 X4 X2 X3 + beta_3 X3 X3 X4 X3 X1
+ beta_4 X4 X1 X1 X3 X4
PARAMATER FOR POPULATION RANGE: beta_1
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[1.2700828]@
\$[0.19026583]@,\$[0.079930764]@,\$[0.15704773]@,\$[0.13531188]@,\$[1.1016307]@
\$[0.35731773]@,\$[0.15070207]@,\$[0.28616017]@,\$[0.23162236]@,\$[-1.0717292]@
\$[0.35037892]@,\$[0.29887208]@,\$[0.25419339]@,\$[0.56122388]@,\$[2.8949152]@
\$[0.61388262]@,\$[0.26494863]@,\$[0.38636197]@,\$[0.77529668]@,\$[0.14267984]@
\$[0.69415157]@,\$[0.38349967]@,\$[0.80888882]@,\$[0.51402287]@,\$[-0.63470831]@
\$[0.6351954]@,\$[0.5463092]@,\$[0.38204714]@,\$[0.70213648]@,\$[1.0414464]@
\$[0.39278619]@,\$[0.91970553]@,\$[1.2664933]@,\$[0.80566209]@,\$[0.85951749]@
\$[0.88049869]@,\$[0.44803903]@,\$[0.46468713]@,\$[1.1134697]@,\$[0.86577149]@
\$[1.7669249]@,\$[1.3575323]@,\$[1.1428962]@,\$[1.6870179]@,\$[43.967108]@
\$[1.6378597]@,\$[1.1441309]@,\$[0.82156528]@,\$[1.2142475]@,\$[17.130534]@

BT2022_qiv_22_alldata

\$[1.8221255]@,\$[1.0769925]@,\$[0.58313066]@,\$[1.1252212]@,\$[12.209743]@
 \$[1.9404897]@,\$[1.8011468]@,\$[0.97166857]@,\$[1.3730744]@,\$[45.7626]@
 \$[1.5999351]@,\$[0.73745904]@,\$[1.7818735]@,\$[1.9004606]@,\$[31.531851]@
 \$[0.73814714]@,\$[2.6586793]@,\$[0.84675832]@,\$[2.5609178]@,\$[70.073348]@
 \$[2.5816042]@,\$[0.90364539]@,\$[1.304969]@,\$[1.0870339]@,\$[31.157392]@
 \$[1.5996316]@,\$[1.9993882]@,\$[2.5419526]@,\$[1.1986194]@,\$[44.990974]@
 \$[1.9772374]@,\$[1.2169989]@,\$[2.2878687]@,\$[1.1550363]@,\$[17.296069]@
 \$[1.8578315]@,\$[1.3262833]@,\$[1.391719]@,\$[1.020446]@,\$[22.501301]@
 \$[1.6682864]@,\$[1.1139082]@,\$[1.2391351]@,\$[1.7971281]@,\$[41.945161]@

EE18B032

alpha = 0.069241377

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X2 X2 X1 X4 + beta_2 X2 X4 X1 X4 X3 + beta_3 X3 X2 X1 X4 X1
 + beta_4 X4 X3 X4 X2 X1

PARAMATER FOR POPULATION RANGE: beta_1

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[0.96493217]@
 \$[0.17838698]@,\$[0.084684038]@,\$[0.13423339]@,\$[0.054351211]@,\$[0.55638157]@
 \$[0.19378912]@,\$[0.35590318]@,\$[0.34639271]@,\$[0.34513022]@,\$[1.0176049]@
 \$[0.4379437]@,\$[0.21337264]@,\$[0.41946037]@,\$[0.28028674]@,\$[-1.0022949]@
 \$[0.76491122]@,\$[0.78306254]@,\$[0.22334972]@,\$[0.37479384]@,\$[0.82682966]@
 \$[0.33070928]@,\$[0.41889723]@,\$[0.64518866]@,\$[0.66817913]@,\$[-0.86506124]@
 \$[0.33451218]@,\$[0.96173109]@,\$[0.67149006]@,\$[1.001301]@,\$[1.0729834]@
 \$[0.95898457]@,\$[0.98333723]@,\$[1.1121332]@,\$[0.50903869]@,\$[0.28741093]@
 \$[1.2235795]@,\$[0.59812317]@,\$[1.5620106]@,\$[0.52537733]@,\$[2.6409582]@
 \$[0.8385197]@,\$[0.65037175]@,\$[1.5461298]@,\$[1.3235853]@,\$[3.6446179]@
 \$[0.59027602]@,\$[0.58796227]@,\$[1.507112]@,\$[1.7107121]@,\$[2.3116439]@
 \$[1.3836533]@,\$[0.72882853]@,\$[2.0661393]@,\$[2.1207068]@,\$[20.626634]@
 \$[1.5535384]@,\$[2.3160469]@,\$[2.3384518]@,\$[1.5953875]@,\$[53.570394]@
 \$[1.3209966]@,\$[1.2210424]@,\$[1.9278748]@,\$[1.7504986]@,\$[22.412501]@
 \$[2.4452834]@,\$[2.1252928]@,\$[2.6340106]@,\$[1.9535375]@,\$[172.08135]@
 \$[0.92024521]@,\$[2.3291076]@,\$[2.4054392]@,\$[1.0873506]@,\$[13.738293]@
 \$[2.8437346]@,\$[2.0022989]@,\$[2.946135]@,\$[3.0048655]@,\$[419.39119]@
 \$[3.0500041]@,\$[2.5091522]@,\$[2.9445196]@,\$[2.3539606]@,\$[414.37313]@
 \$[1.2194208]@,\$[2.4360337]@,\$[0.98072484]@,\$[2.1943102]@,\$[11.309338]@
 \$[2.7562326]@,\$[3.3864139]@,\$[2.8742911]@,\$[1.6505075]@,\$[254.3206]@

EE18B044

alpha = 0.1799193

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X4 X4 X3 X2 + beta_2 X2 X3 X1 X4 X4 + beta_3 X3 X2 X2 X1 X1
 + beta_4 X4 X2 X1 X1 X3

PARAMATER FOR POPULATION RANGE: beta_3

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[4.4427218]@

```

BT2022_qiv_22_alldata
$[0.1930921]@,$[0.051929447]@,$[0.1766044]@,$[0.13975759]@,$[4.1307958]@
$[0.32799984]@,$[0.18704165]@,$[0.16299061]@,$[0.25517332]@,$[4.8601979]@
$[0.42546005]@,$[0.5729656]@,$[0.41913407]@,$[0.23848583]@,$[5.5860192]@
$[0.40514613]@,$[0.51467595]@,$[0.37925455]@,$[0.23993148]@,$[4.3619216]@
$[0.90393834]@,$[0.3829267]@,$[0.60612662]@,$[0.83184784]@,$[4.8885303]@
$[0.35501971]@,$[0.51923408]@,$[0.7708338]@,$[0.69761317]@,$[4.3443485]@
$[0.96918016]@,$[0.63387906]@,$[1.2561771]@,$[1.0603478]@,$[10.938009]@
$[1.4584741]@,$[0.80186208]@,$[1.452179]@,$[1.1689874]@,$[26.61989]@
$[1.016788]@,$[0.62105223]@,$[0.6045941]@,$[1.3369148]@,$[10.057247]@
$[1.7926416]@,$[1.704324]@,$[1.8155099]@,$[1.3471704]@,$[115.11112]@
$[2.1354713]@,$[1.1399953]@,$[1.4496861]@,$[1.0783039]@,$[54.05814]@
$[1.6780381]@,$[1.0202585]@,$[1.4739838]@,$[1.0335169]@,$[33.940158]@
$[0.90325262]@,$[0.7112294]@,$[1.8816608]@,$[1.3273648]@,$[20.883807]@
$[0.95436771]@,$[1.960467]@,$[2.5969485]@,$[2.6999933]@,$[279.42268]@
$[1.0026737]@,$[2.5039223]@,$[2.2526473]@,$[2.2615355]@,$[242.86935]@
$[0.98071355]@,$[0.90207894]@,$[2.5535232]@,$[1.9616334]@,$[72.796424]@
$[0.94294384]@,$[0.92912202]@,$[1.7965861]@,$[0.93152776]@,$[17.521317]@
$[1.3517921]@,$[3.4922817]@,$[1.4581725]@,$[0.95111969]@,$[104.50691]@
$[1.549632]@,$[3.7459964]@,$[3.3511275]@,$[1.0770385]@,$[364.54804]@

```

EE18B047

alpha = 0.086091401

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X4 X4 X2 X2 + beta_2 X2 X4 X2 X3 X4 + beta_3 X3 X4 X3 X1 X4
+ beta_4 X4 X4 X4 X3 X2

PARAMATER FOR POPULATION RANGE: beta_0

DATA COLUMNS X1 X2 X3 X4 Y

```

$[0]@,$[0]@,$[0]@,$[0]@,$[2.4096178]@
$[0.15156356]@,$[0.093001696]@,$[0.1576123]@,$[0.13359016]@,$[2.8221448]@
$[0.24512096]@,$[0.17698601]@,$[0.35486387]@,$[0.39085312]@,$[1.5116332]@
$[0.38195068]@,$[0.50582703]@,$[0.4568942]@,$[0.30151539]@,$[2.1863895]@
$[0.61008991]@,$[0.58417668]@,$[0.66198261]@,$[0.49250859]@,$[4.5912873]@
$[0.69023431]@,$[0.92065123]@,$[0.72429442]@,$[0.87047513]@,$[7.4721944]@
$[0.33386979]@,$[0.89335443]@,$[1.1793906]@,$[0.80821818]@,$[7.3508581]@
$[0.39359969]@,$[0.54456957]@,$[0.79937585]@,$[0.63761022]@,$[3.9370342]@
$[1.4879993]@,$[0.55619208]@,$[1.5976599]@,$[1.2986595]@,$[31.166078]@
$[1.0583446]@,$[1.4425918]@,$[1.1650112]@,$[1.1770627]@,$[34.511285]@
$[1.3235874]@,$[1.9079478]@,$[1.9292285]@,$[1.6222928]@,$[184.57679]@
$[0.72325634]@,$[1.2374494]@,$[1.2818394]@,$[1.5067368]@,$[49.772285]@
$[2.1422547]@,$[1.1878605]@,$[2.3204487]@,$[1.4105615]@,$[121.72271]@
$[1.0777013]@,$[1.9059344]@,$[1.8154752]@,$[1.9518266]@,$[254.58656]@
$[1.7207849]@,$[1.6874577]@,$[2.4391946]@,$[1.9072019]@,$[326.47142]@
$[1.7190206]@,$[2.3944734]@,$[1.2856623]@,$[0.85393107]@,$[46.636574]@
$[2.2063094]@,$[0.97691403]@,$[1.8907528]@,$[2.6953447]@,$[358.32198]@
$[0.89004213]@,$[2.0007652]@,$[3.3930802]@,$[1.1865414]@,$[158.5354]@
$[2.5149393]@,$[1.3330064]@,$[2.6593856]@,$[2.0269749]@,$[396.685]@
$[2.841075]@,$[3.562757]@,$[1.8711907]@,$[3.0442019]@,$[2407.556]@

```

BT2022_qiv_22_alldata

EE18B058
alpha = 0.1470433
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X1 X4 X2 X4 + beta_2 X2 X2 X2 X4 X4 + beta_3 X3 X4 X3 X4 X3
+ beta_4 X4 X2 X1 X3 X3
PARAMATER FOR POPULATION RANGE: beta_4
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[2.0573178]@
\$[0.18376487]@,\$[0.12977378]@,\$[0.14394986]@,\$[0.050166258]@,\$[2.0578207]@
\$[0.38159813]@,\$[0.14184729]@,\$[0.17130579]@,\$[0.28192816]@,\$[0.42879742]@
\$[0.22595541]@,\$[0.46411813]@,\$[0.41925614]@,\$[0.45309455]@,\$[1.9561335]@
\$[0.71846934]@,\$[0.47438676]@,\$[0.54414991]@,\$[0.44198063]@,\$[0.68556104]@
\$[0.92616285]@,\$[0.64927561]@,\$[0.57097312]@,\$[0.45102925]@,\$[2.2649633]@
\$[0.53909294]@,\$[0.55357079]@,\$[1.0017988]@,\$[0.95425546]@,\$[2.2911479]@
\$[0.64567949]@,\$[1.1048596]@,\$[0.6400015]@,\$[0.50205563]@,\$[1.0373844]@
\$[0.69437928]@,\$[1.0006246]@,\$[1.1029127]@,\$[1.0643455]@,\$[1.630425]@
\$[1.3295738]@,\$[1.0597181]@,\$[0.95457493]@,\$[0.81448942]@,\$[0.39676413]@
\$[1.8600811]@,\$[1.5176678]@,\$[1.6332303]@,\$[0.8028564]@,\$[-2.3563629]@
\$[2.0562751]@,\$[1.602587]@,\$[1.065905]@,\$[1.5333853]@,\$[2.4842194]@
\$[1.4021136]@,\$[1.1913502]@,\$[1.4180967]@,\$[1.2948971]@,\$[-1.9326565]@
\$[2.3122134]@,\$[0.82083077]@,\$[2.3754524]@,\$[2.2710984]@,\$[-41.541459]@
\$[2.2336566]@,\$[2.7041739]@,\$[2.4448092]@,\$[2.695168]@,\$[45.108354]@
\$[2.5141988]@,\$[2.4555142]@,\$[1.5077937]@,\$[2.3690384]@,\$[44.364534]@
\$[2.0598263]@,\$[2.1378846]@,\$[0.88225996]@,\$[1.4468222]@,\$[15.52052]@
\$[3.2821796]@,\$[1.6918216]@,\$[1.7426382]@,\$[1.8054993]@,\$[-22.400029]@
\$[2.2989848]@,\$[2.3052176]@,\$[2.3790001]@,\$[3.5409163]@,\$[9.7067456]@
\$[2.1241333]@,\$[1.0762368]@,\$[3.7280927]@,\$[1.8629848]@,\$[-95.204772]@

EE18B059
alpha = 0.095123368
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X2 X3 X1 X4 + beta_2 X2 X3 X2 X1 X1 + beta_3 X3 X1 X1 X4 X3
+ beta_4 X4 X2 X3 X4 X4
PARAMATER FOR POPULATION RANGE: beta_3
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[2.9375663]@
\$[0.13194699]@,\$[0.18694351]@,\$[0.088514021]@,\$[0.062661728]@,\$[3.5483556]@
\$[0.16444114]@,\$[0.33213263]@,\$[0.15166486]@,\$[0.1140599]@,\$[3.7467477]@
\$[0.18601915]@,\$[0.23578777]@,\$[0.30478253]@,\$[0.28648174]@,\$[3.7036664]@
\$[0.52531616]@,\$[0.21501862]@,\$[0.69931517]@,\$[0.52443567]@,\$[5.0003853]@
\$[0.40262845]@,\$[0.86149032]@,\$[0.35135019]@,\$[0.82862749]@,\$[5.0909003]@
\$[0.4834455]@,\$[0.58015102]@,\$[0.3741342]@,\$[1.0890002]@,\$[5.4160143]@
\$[1.2182101]@,\$[0.49256773]@,\$[1.2263892]@,\$[0.82652423]@,\$[6.8628114]@
\$[1.337157]@,\$[0.75343119]@,\$[0.53232126]@,\$[0.63736614]@,\$[6.2758985]@
\$[1.2226117]@,\$[1.6516124]@,\$[1.1126975]@,\$[1.5800195]@,\$[29.222725]@

BT2022_qiv_22_alldata

\$[1.630134]@,\$[0.68110168]@,\$[1.3631003]@,\$[1.1092729]@,\$[16.165986]@
\$[0.90532984]@,\$[1.2663747]@,\$[1.6240659]@,\$[2.1406797]@,\$[59.352733]@
\$[1.1912318]@,\$[1.5829409]@,\$[1.8267081]@,\$[1.2394011]@,\$[36.063782]@
\$[0.77431945]@,\$[1.6648591]@,\$[2.3334714]@,\$[1.2757882]@,\$[33.79079]@
\$[1.9071942]@,\$[2.2412041]@,\$[1.0167562]@,\$[1.3415956]@,\$[45.083154]@
\$[1.682871]@,\$[2.4725219]@,\$[2.1894673]@,\$[2.4606715]@,\$[282.34606]@
\$[1.4675194]@,\$[1.9125794]@,\$[1.6554727]@,\$[2.992878]@,\$[236.16737]@
\$[3.3634214]@,\$[2.2564366]@,\$[0.92517546]@,\$[1.064888]@,\$[93.272275]@
\$[2.5602118]@,\$[2.1875829]@,\$[1.6294536]@,\$[3.1545277]@,\$[375.15928]@
\$[3.1128677]@,\$[2.9982505]@,\$[1.9717686]@,\$[3.3005225]@,\$[820.62532]@

EE18B065

alpha = 0.10994585

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X1 X2 X4 X4 + beta_2 X2 X4 X3 X4 X1 + beta_3 X3 X4 X3 X1 X1
+ beta_4 X4 X1 X1 X2 X2

PARAMATER FOR POPULATION RANGE: beta_3

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[0.86091004]@
\$[0.13318577]@,\$[0.19955082]@,\$[0.10824116]@,\$[0.18264363]@,\$[3.1272879]@
\$[0.14858667]@,\$[0.38702241]@,\$[0.11827858]@,\$[0.15304679]@,\$[1.7818512]@
\$[0.42174646]@,\$[0.3000993]@,\$[0.18004364]@,\$[0.53895326]@,\$[1.2658017]@
\$[0.42434135]@,\$[0.37654558]@,\$[0.23898661]@,\$[0.67643732]@,\$[0.65135664]@
\$[0.59161047]@,\$[0.37461778]@,\$[0.63521081]@,\$[0.80259263]@,\$[4.2283547]@
\$[0.55900656]@,\$[0.58487936]@,\$[0.30223627]@,\$[0.9097026]@,\$[1.4331666]@
\$[1.2987047]@,\$[1.3845678]@,\$[1.2956093]@,\$[1.0052846]@,\$[27.716841]@
\$[1.2327226]@,\$[0.93715261]@,\$[1.5307417]@,\$[0.61229083]@,\$[7.0910069]@
\$[1.4351383]@,\$[0.52643724]@,\$[0.72819477]@,\$[1.5587698]@,\$[13.90395]@
\$[1.8236811]@,\$[1.3383823]@,\$[1.2487977]@,\$[1.7889785]@,\$[113.08385]@
\$[2.0983833]@,\$[1.6151757]@,\$[1.2071539]@,\$[1.8764668]@,\$[202.73057]@
\$[1.3545451]@,\$[1.3893806]@,\$[0.77759031]@,\$[2.2959928]@,\$[97.145105]@
\$[2.2062017]@,\$[1.5992613]@,\$[2.0142986]@,\$[2.513615]@,\$[407.07815]@
\$[1.8758145]@,\$[0.78409443]@,\$[1.4493152]@,\$[1.5618271]@,\$[46.431225]@
\$[1.4101447]@,\$[1.944816]@,\$[2.0194868]@,\$[1.2635604]@,\$[87.962223]@
\$[2.3985514]@,\$[1.295353]@,\$[2.1966958]@,\$[2.2070752]@,\$[282.2388]@
\$[1.431314]@,\$[1.1373521]@,\$[2.1212381]@,\$[3.2684908]@,\$[228.04628]@
\$[1.4441003]@,\$[2.9172377]@,\$[1.9643312]@,\$[1.2268696]@,\$[162.87059]@
\$[2.1243866]@,\$[3.4076761]@,\$[2.4774162]@,\$[1.4990512]@,\$[564.54963]@

EE18B071

alpha = 0.1259158

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X3 X4 X1 X1 + beta_2 X2 X1 X3 X3 X1 + beta_3 X3 X3 X1 X3 X2
+ beta_4 X4 X4 X1 X4 X1

PARAMATER FOR POPULATION RANGE: beta_2

DATA COLUMNS X1 X2 X3 X4 Y

```

BT2022_qiv_22_alldata
$[0]@[0]@[0]@[0]@[2.3386731]@
$[0.061490578]@[0.16829973]@[0.16339444]@[0.084037322]@[1.3844324]@
$[0.17764294]@[0.38615011]@[0.33343464]@[0.38788896]@[0.8592769]@
$[0.1565868]@[0.25881365]@[0.4635809]@[0.21489824]@[2.2678745]@
$[0.29443971]@[0.6530377]@[0.47237717]@[0.25935825]@[1.5228921]@
$[0.48799502]@[0.85841868]@[0.66721817]@[0.57374953]@[3.348152]@
$[0.89393609]@[0.54277872]@[0.83095895]@[0.69690095]@[5.1326959]@
$[0.37736937]@[0.69801171]@[0.99529109]@[0.39277387]@[2.4978123]@
$[0.56773668]@[0.80076417]@[0.55821558]@[1.3981111]@[4.1060066]@
$[1.7891998]@[1.6732979]@[1.7663271]@[0.98557766]@[108.50954]@
$[0.63334999]@[1.9990071]@[1.3713623]@[0.54497576]@[4.5212261]@
$[1.4189188]@[1.5613039]@[1.3567282]@[1.0996306]@[45.132616]@
$[1.0687099]@[1.6930237]@[1.1296852]@[1.561627]@[21.833138]@
$[1.5466124]@[1.6713715]@[2.0290916]@[1.2746046]@[107.68054]@
$[2.0138822]@[2.2259295]@[1.856779]@[1.6874024]@[255.03457]@
$[1.6089752]@[2.9384171]@[2.684759]@[1.8703448]@[277.03558]@
$[2.5419312]@[1.7601118]@[1.688754]@[3.1197219]@[741.86149]@
$[2.2821085]@[2.0210456]@[3.2553534]@[2.1939859]@[834.95376]@
$[3.2171888]@[1.6652392]@[2.6718114]@[1.7095557]@[1293.6905]@
$[2.9249138]@[2.2187133]@[1.9112824]@[2.5467271]@[1022.8287]@

```

EE18B111

```

alpha = 0.062370857
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X2 X2 X2 + beta_2 X2 X4 X2 X2 X2 + beta_3 X3 X3 X2 X3 X3
+ beta_4 X4 X1 X3 X3 X2
PARAMATER FOR POPULATION RANGE: beta_4
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@[0]@[0]@[0]@[6.3584862]@
$[0.059532418]@[0.13291998]@[0.18919457]@[0.15448497]@[5.2076518]@
$[0.34321713]@[0.2569616]@[0.18788269]@[0.1224962]@[4.895322]@
$[0.4006162]@[0.5999207]@[0.48849571]@[0.28503905]@[6.1625743]@
$[0.79942814]@[0.53862637]@[0.4716644]@[0.58437704]@[6.1899732]@
$[0.9159399]@[0.79408946]@[0.99209095]@[0.64161878]@[12.546895]@
$[0.6634695]@[0.31780779]@[0.83430172]@[0.9556147]@[7.4265933]@
$[0.87286127]@[0.68151039]@[0.96327478]@[0.5690394]@[12.007809]@
$[0.87996346]@[0.53570368]@[0.49448439]@[1.3582805]@[6.7040073]@
$[0.55035483]@[0.53739194]@[0.60402321]@[0.86826827]@[7.3394211]@
$[1.4810069]@[0.9538311]@[1.7298559]@[1.6696537]@[91.724936]@
$[1.8972861]@[1.5721279]@[1.3669408]@[1.5910906]@[110.08894]@
$[1.8054133]@[0.95986389]@[1.3651393]@[1.0299338]@[44.276504]@
$[1.1360581]@[2.4587799]@[2.0469784]@[2.4499927]@[630.65255]@
$[0.90668751]@[2.3485743]@[1.4049449]@[1.2249895]@[172.86976]@
$[2.9414279]@[1.9307867]@[1.1365403]@[2.5612238]@[225.63949]@
$[1.6831057]@[2.8616426]@[2.3165698]@[3.0981422]@[1465.2295]@
$[1.0798273]@[1.4000547]@[1.0809156]@[3.3244867]@[92.472971]@
$[1.9999416]@[3.0737688]@[2.9453861]@[2.921305]@[2692.1661]@

```

BT2022_qiv_22_alldata
\$[3.7901502]@,\$[3.4551756]@,\$[1.6895697]@,\$[1.2928312]@,\$[520.44466]@

EE18B116
alpha = 0.16937762
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X4 X2 X3 X4 + beta_2 X2 X4 X3 X3 X2 + beta_3 X3 X2 X3 X1 X4
+ beta_4 X4 X1 X4 X4 X2
PARAMATER FOR POPULATION RANGE: beta_4
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[1.6252225]@
\$[0.18780227]@,\$[0.13203791]@,\$[0.09722993]@,\$[0.16934902]@,\$[1.2429906]@
\$[0.17305469]@,\$[0.11130097]@,\$[0.35668053]@,\$[0.30720878]@,\$[0.72797274]@
\$[0.59568127]@,\$[0.16547774]@,\$[0.33848656]@,\$[0.31890765]@,\$[1.8563782]@
\$[0.25756251]@,\$[0.64322099]@,\$[0.3465561]@,\$[0.76993276]@,\$[1.648712]@
\$[0.59464827]@,\$[0.79006834]@,\$[0.37579767]@,\$[0.71918666]@,\$[1.110327]@
\$[0.66443951]@,\$[0.73001645]@,\$[0.67624465]@,\$[1.0395832]@,\$[6.3694167]@
\$[1.1441279]@,\$[1.2894606]@,\$[0.86606086]@,\$[0.61469075]@,\$[9.2110239]@
\$[0.68374256]@,\$[1.4404687]@,\$[1.5022684]@,\$[0.90898893]@,\$[29.54974]@
\$[0.71022584]@,\$[0.94301192]@,\$[1.5761178]@,\$[1.1679694]@,\$[27.891213]@
\$[1.7806379]@,\$[0.77455702]@,\$[1.3590996]@,\$[1.7266968]@,\$[64.6981]@
\$[1.8797511]@,\$[1.490763]@,\$[1.7409087]@,\$[0.79890162]@,\$[74.529303]@
\$[2.3483692]@,\$[2.0609105]@,\$[1.356208]@,\$[1.0164968]@,\$[114.77668]@
\$[1.8094994]@,\$[1.1282476]@,\$[1.5179735]@,\$[2.1885931]@,\$[164.85179]@
\$[1.2227292]@,\$[2.2636799]@,\$[2.5127593]@,\$[2.3326199]@,\$[620.08795]@
\$[2.0351841]@,\$[1.0812062]@,\$[1.5372175]@,\$[2.2853789]@,\$[191.24912]@
\$[2.6036134]@,\$[2.8683316]@,\$[0.90199483]@,\$[1.707289]@,\$[212.82584]@
\$[2.9249229]@,\$[2.1985874]@,\$[1.9151409]@,\$[2.7860777]@,\$[1068.3025]@
\$[1.859027]@,\$[1.854374]@,\$[2.6207703]@,\$[2.2164077]@,\$[684.76769]@
\$[3.5859605]@,\$[2.5209691]@,\$[3.0616331]@,\$[3.5769371]@,\$[4320.8846]@

EE18B123
alpha = 0.18107809
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X1 X3 X2 X1 + beta_2 X2 X3 X2 X2 X3 + beta_3 X3 X1 X2 X2 X1
+ beta_4 X4 X1 X4 X2 X2
PARAMATER FOR POPULATION RANGE: beta_2
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[3.1150511]@
\$[0.16463586]@,\$[0.15206839]@,\$[0.17560592]@,\$[0.1462398]@,\$[1.6877285]@
\$[0.34625489]@,\$[0.21351693]@,\$[0.14191253]@,\$[0.1271459]@,\$[0.96697896]@
\$[0.25975146]@,\$[0.38189829]@,\$[0.37095003]@,\$[0.30835084]@,\$[1.6201408]@
\$[0.26948445]@,\$[0.7170305]@,\$[0.67869294]@,\$[0.71983008]@,\$[2.0776645]@
\$[0.99207673]@,\$[0.28695765]@,\$[0.89921821]@,\$[0.9547749]@,\$[3.8813289]@
\$[0.52248882]@,\$[1.1892874]@,\$[0.33775286]@,\$[0.62971989]@,\$[2.4270507]@
\$[1.1710888]@,\$[1.2181127]@,\$[0.39088132]@,\$[1.0293934]@,\$[15.791378]@
\$[0.49384042]@,\$[0.6178074]@,\$[0.99780249]@,\$[0.96705661]@,\$[3.9213011]@

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\$[0.80700076]@,\$[1.6345744]@,\$[0.51818414]@,\$[1.6808196]@,\$[33.348192]@
\$[1.007249]@,\$[0.7932394]@,\$[1.481733]@,\$[0.65987682]@,\$[6.3445704]@
\$[1.0747735]@,\$[0.97825639]@,\$[1.7497379]@,\$[1.2528696]@,\$[19.103461]@
\$[1.3675396]@,\$[1.3796956]@,\$[2.1843287]@,\$[0.69156473]@,\$[42.774262]@
\$[2.5250583]@,\$[1.4491985]@,\$[0.78543722]@,\$[1.9673829]@,\$[178.33127]@
\$[1.6883582]@,\$[2.6255112]@,\$[0.79034976]@,\$[1.3219116]@,\$[167.43036]@
\$[2.8407563]@,\$[1.021851]@,\$[0.84668179]@,\$[2.6006919]@,\$[168.20433]@
\$[2.0248971]@,\$[0.97792777]@,\$[2.3423858]@,\$[2.4850287]@,\$[134.51469]@
\$[1.6359139]@,\$[1.285861]@,\$[2.9824497]@,\$[1.9299947]@,\$[119.43027]@
\$[2.5762364]@,\$[2.0323472]@,\$[3.3355878]@,\$[1.1589763]@,\$[588.67412]@
\$[2.2877204]@,\$[1.360379]@,\$[2.8890868]@,\$[1.9034769]@,\$[267.31257]@

EE18B133

alpha = 0.059796495

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X2 X4 X3 X3 + beta_2 X2 X4 X3 X3 X3 + beta_3 X3 X2 X1 X1 X1
+ beta_4 X4 X1 X1 X1 X4

PARAMATER FOR POPULATION RANGE: beta_2

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[1.1385661]@
\$[0.18443892]@,\$[0.11842124]@,\$[0.060653517]@,\$[0.078658286]@,\$[0.64573848]@
\$[0.16913064]@,\$[0.11767744]@,\$[0.28450146]@,\$[0.32324088]@,\$[1.4144042]@
\$[0.32358641]@,\$[0.39684228]@,\$[0.16744436]@,\$[0.25521834]@,\$[0.10830237]@
\$[0.70649327]@,\$[0.27286936]@,\$[0.60768933]@,\$[0.39558104]@,\$[-0.4122211]@
\$[0.93834154]@,\$[0.68906164]@,\$[0.74001163]@,\$[0.42331812]@,\$[-1.2729422]@
\$[0.90669949]@,\$[0.60254783]@,\$[0.80396418]@,\$[0.94627741]@,\$[-0.49116784]@
\$[0.77662261]@,\$[1.3945632]@,\$[0.43615353]@,\$[1.2849507]@,\$[1.0701028]@
\$[1.4981544]@,\$[0.4259339]@,\$[1.5318135]@,\$[1.3171685]@,\$[9.1783685]@
\$[1.2298389]@,\$[1.226297]@,\$[0.70504252]@,\$[1.4524389]@,\$[4.4402281]@
\$[1.6096595]@,\$[1.7841431]@,\$[0.57833887]@,\$[0.8905698]@,\$[3.1289713]@
\$[1.8388337]@,\$[1.3637655]@,\$[2.0463485]@,\$[1.9435454]@,\$[66.866904]@
\$[2.115098]@,\$[2.1269078]@,\$[1.2339522]@,\$[1.4478471]@,\$[32.233283]@
\$[2.0267075]@,\$[2.492619]@,\$[2.4967831]@,\$[0.76709105]@,\$[44.509802]@
\$[1.7640245]@,\$[1.8516676]@,\$[1.5856365]@,\$[2.3834216]@,\$[68.688428]@
\$[1.480036]@,\$[2.4939835]@,\$[2.8277906]@,\$[2.7097062]@,\$[253.76373]@
\$[2.4331712]@,\$[2.01978]@,\$[2.2140706]@,\$[1.8092757]@,\$[122.24957]@
\$[0.87481667]@,\$[0.89382036]@,\$[3.1354941]@,\$[2.8584955]@,\$[89.858367]@
\$[2.3842372]@,\$[1.3408779]@,\$[2.1444126]@,\$[1.6029692]@,\$[73.241187]@
\$[1.5117276]@,\$[2.4158951]@,\$[3.6489992]@,\$[2.4059188]@,\$[389.34379]@

EE18B144

alpha = 0.073864361

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X4 X1 X3 X2 + beta_2 X2 X1 X4 X2 X3 + beta_3 X3 X3 X4 X3 X1
+ beta_4 X4 X1 X3 X4 X2

PARAMATER FOR POPULATION RANGE: beta_4

BT2022_qiv_22_alldata

DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[5.0573284]@
\$[0.087450241]@,\$[0.18100092]@,\$[0.18439]@,\$[0.060356943]@,\$[3.198256]@
\$[0.34807007]@,\$[0.28230697]@,\$[0.14298774]@,\$[0.31769305]@,\$[4.6798069]@
\$[0.19847357]@,\$[0.25131687]@,\$[0.377683]@,\$[0.31479411]@,\$[3.0479688]@
\$[0.28254208]@,\$[0.32343884]@,\$[0.39237736]@,\$[0.52694908]@,\$[3.0218309]@
\$[0.83569005]@,\$[0.36495813]@,\$[0.33032503]@,\$[0.41290564]@,\$[2.8952562]@
\$[0.32616158]@,\$[1.0391088]@,\$[0.43397414]@,\$[0.94351481]@,\$[5.2027084]@
\$[1.3404205]@,\$[0.65348988]@,\$[0.99564328]@,\$[1.2828372]@,\$[14.768057]@
\$[1.3242786]@,\$[0.45317694]@,\$[0.48522135]@,\$[0.87178694]@,\$[6.5561073]@
\$[1.4909162]@,\$[1.526157]@,\$[0.48383867]@,\$[0.6941792]@,\$[8.605186]@
\$[1.8430883]@,\$[1.4659629]@,\$[1.2656874]@,\$[0.91870984]@,\$[35.141492]@
\$[2.0305213]@,\$[1.2150977]@,\$[0.87988769]@,\$[0.55159705]@,\$[12.051237]@
\$[2.2508535]@,\$[2.1020564]@,\$[2.3373147]@,\$[2.1352673]@,\$[471.68907]@
\$[1.1010129]@,\$[0.77629396]@,\$[1.9296223]@,\$[1.6387031]@,\$[66.989845]@
\$[1.5570709]@,\$[2.7284559]@,\$[1.7557836]@,\$[2.6742607]@,\$[341.14507]@
\$[2.8694762]@,\$[2.5102038]@,\$[2.8205053]@,\$[0.77378412]@,\$[305.69747]@
\$[1.5589996]@,\$[1.3046729]@,\$[2.6874594]@,\$[1.2834062]@,\$[183.68919]@
\$[2.7928083]@,\$[2.0459386]@,\$[1.7626039]@,\$[1.8853298]@,\$[294.40745]@
\$[2.7426251]@,\$[2.7270569]@,\$[3.0132436]@,\$[1.7775086]@,\$[916.45015]@
\$[1.6709816]@,\$[1.4500199]@,\$[2.079861]@,\$[3.346336]@,\$[386.67633]@

EE18B156
alpha = 0.10622775
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X4 X3 X3 X3 + beta_2 X2 X3 X2 X2 X4 + beta_3 X3 X4 X2 X2 X1 X4
+ beta_4 X4 X3 X3 X3 X1
PARAMATER FOR POPULATION RANGE: beta_4
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[-2.4093725]@
\$[0.19353033]@,\$[0.11047543]@,\$[0.15028517]@,\$[0.12856459]@,\$[-2.0206754]@
\$[0.30818839]@,\$[0.19487562]@,\$[0.14630688]@,\$[0.18830547]@,\$[0.18623122]@
\$[0.28377]@,\$[0.58829323]@,\$[0.3073693]@,\$[0.44031081]@,\$[-2.0700007]@
\$[0.3404275]@,\$[0.49522708]@,\$[0.25966705]@,\$[0.71584376]@,\$[-2.2251747]@
\$[0.73929171]@,\$[0.77726264]@,\$[0.67313009]@,\$[0.83417742]@,\$[-1.3142015]@
\$[1.0947384]@,\$[0.97982332]@,\$[1.0254611]@,\$[0.89294906]@,\$[1.0923698]@
\$[0.74464996]@,\$[0.39492047]@,\$[0.68254523]@,\$[0.95041311]@,\$[-1.5295574]@
\$[1.2316061]@,\$[0.98314075]@,\$[1.0444706]@,\$[0.80075175]@,\$[-1.2878676]@
\$[1.1630915]@,\$[1.5189505]@,\$[0.63150094]@,\$[1.0664556]@,\$[1.3501632]@
\$[0.93702197]@,\$[0.8287734]@,\$[1.1290966]@,\$[1.1944423]@,\$[3.3323037]@
\$[0.61491689]@,\$[1.2731079]@,\$[1.9184259]@,\$[1.6331719]@,\$[14.909707]@
\$[1.2466404]@,\$[1.0583054]@,\$[1.2679913]@,\$[1.0230401]@,\$[4.234954]@
\$[1.2621373]@,\$[1.8273206]@,\$[1.6093835]@,\$[1.1595128]@,\$[15.577514]@
\$[1.8096741]@,\$[1.3281121]@,\$[1.5736951]@,\$[2.5205962]@,\$[48.555655]@
\$[2.3049751]@,\$[2.5699112]@,\$[1.6146005]@,\$[1.2989534]@,\$[40.556401]@
\$[2.1501406]@,\$[1.7173335]@,\$[2.524828]@,\$[2.9844813]@,\$[234.99351]@
\$[2.6470177]@,\$[0.89923747]@,\$[2.7726846]@,\$[1.9693794]@,\$[180.71755]@

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\$[1.7921343]@,\$[1.5101123]@,\$[1.4122969]@,\$[2.6704062]@,\$[44.985803]@
\$[2.6910046]@,\$[1.2169855]@,\$[2.6782336]@,\$[0.96707746]@,\$[79.549457]@

EE18B158

alpha = 0.052230588

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X4 X3 X1 X4 + beta_2 X2 X1 X2 X2 X4 + beta_3 X3 X3 X4 X3 X1
+ beta_4 X4 X1 X4 X2 X3

PARAMATER FOR POPULATION RANGE: beta_3

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@[1.1773369]@
\$[0.17581964]@,\$[0.090544061]@,\$[0.15001932]@,\$[0.11303446]@,\$[-0.39770054]@
\$[0.11268671]@,\$[0.30450084]@,\$[0.31800176]@,\$[0.35585388]@,\$[-0.90265209]@
\$[0.4549687]@,\$[0.57415107]@,\$[0.50558076]@,\$[0.36127727]@,\$[0.71741304]@
\$[0.78796403]@,\$[0.7620119]@,\$[0.66991369]@,\$[0.38670592]@,\$[0.71711161]@
\$[0.82483848]@,\$[0.55855115]@,\$[0.93863731]@,\$[0.96163946]@,\$[5.0931909]@
\$[0.82032211]@,\$[0.7543402]@,\$[0.74334413]@,\$[0.63072903]@,\$[-0.28574666]@
\$[0.40773522]@,\$[1.202531]@,\$[0.85114878]@,\$[1.1446922]@,\$[2.7205562]@
\$[1.45728]@,\$[1.4202871]@,\$[0.46455797]@,\$[1.1272007]@,\$[8.5162061]@
\$[1.7413369]@,\$[1.2770924]@,\$[0.72553851]@,\$[0.56092296]@,\$[4.8900729]@
\$[0.54218009]@,\$[0.96490527]@,\$[1.2382616]@,\$[0.85146661]@,\$[3.2321903]@
\$[0.5917774]@,\$[1.6534195]@,\$[1.0650863]@,\$[0.5631452]@,\$[2.1895684]@
\$[1.1629087]@,\$[1.8447489]@,\$[1.1057343]@,\$[0.77168489]@,\$[13.144245]@
\$[1.0617957]@,\$[0.907444843]@,\$[1.5761941]@,\$[0.73961028]@,\$[8.1467494]@
\$[2.6449969]@,\$[2.5605873]@,\$[2.5001272]@,\$[1.456541]@,\$[321.88633]@
\$[1.9091653]@,\$[2.6930481]@,\$[1.6372945]@,\$[0.93866579]@,\$[75.811821]@
\$[0.8194731]@,\$[1.6833109]@,\$[2.7937572]@,\$[1.0274805]@,\$[40.041296]@
\$[2.4556209]@,\$[1.5743021]@,\$[3.3489059]@,\$[3.0698157]@,\$[1170.535]@
\$[2.1064046]@,\$[1.0730353]@,\$[2.85359]@,\$[1.7693253]@,\$[263.0399]@
\$[2.071611]@,\$[2.5208117]@,\$[3.1569361]@,\$[3.6577964]@,\$[1419.8226]@

EE19B004

alpha = 0.14554209

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X2 X4 X4 X2 + beta_2 X2 X1 X2 X2 X2 + beta_3 X3 X1 X3 X1 X4
+ beta_4 X4 X4 X3 X3 X2

PARAMATER FOR POPULATION RANGE: beta_1

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@[5.5679642]@
\$[0.10656846]@,\$[0.15507934]@,\$[0.19577593]@,\$[0.17492094]@,\$[3.8215139]@
\$[0.16484542]@,\$[0.38155345]@,\$[0.2475038]@,\$[0.26076967]@,\$[4.4505054]@
\$[0.35977454]@,\$[0.52963757]@,\$[0.24476337]@,\$[0.56341646]@,\$[4.5073615]@
\$[0.3956557]@,\$[0.3787887]@,\$[0.63222579]@,\$[0.29361344]@,\$[5.9505776]@
\$[0.40401131]@,\$[0.94910619]@,\$[0.90592438]@,\$[0.33481911]@,\$[6.3714419]@
\$[1.1660222]@,\$[0.77290739]@,\$[0.30340166]@,\$[0.95232862]@,\$[7.7154222]@
\$[0.49617779]@,\$[0.66384988]@,\$[0.71151964]@,\$[0.47617402]@,\$[5.935089]@

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```

$[1.1693516]@,$[1.1554316]@,$[0.49434047]@,$[0.58739541]@,$[6.4837504]@
$[1.6201715]@,$[1.4513353]@,$[1.5792064]@,$[1.1761578]@,$[42.143558]@
$[1.774137]@,$[1.2800547]@,$[1.1111935]@,$[0.51657484]@,$[13.01137]@
$[1.5869612]@,$[1.4162855]@,$[0.86893619]@,$[1.6217011]@,$[33.276128]@
$[2.3105117]@,$[1.6446009]@,$[0.76290721]@,$[0.91561721]@,$[25.174656]@
$[2.142725]@,$[2.4653289]@,$[0.85671705]@,$[1.7206786]@,$[115.86478]@
$[1.3665232]@,$[1.7889003]@,$[1.6060464]@,$[0.94138596]@,$[32.438785]@
$[2.7732376]@,$[2.1332906]@,$[1.0413555]@,$[2.3906542]@,$[220.65411]@
$[1.1584672]@,$[2.319025]@,$[2.5675315]@,$[1.4613444]@,$[122.57219]@
$[2.5243319]@,$[0.89900781]@,$[1.6622684]@,$[2.9233671]@,$[195.41415]@
$[2.5469278]@,$[1.3345421]@,$[1.1506126]@,$[2.6017393]@,$[136.28796]@
$[1.3013232]@,$[1.9402922]@,$[3.6953238]@,$[2.0002298]@,$[337.62236]@

```

EE19B007

alpha = 0.11594719

MLR FIT FUNCTION

```

Y = beta_0 + beta_1 X1 X1 X3 X4 X4 + beta_2 X2 X3 X3 X2 X2 + beta_3 X3 X4 X2 X2 X4
+ beta_4 X4 X2 X4 X4 X4

```

PARAMATER FOR POPULATION RANGE: beta_2

DATA COLUMNS X1 X2 X3 X4 Y

```

$[0]@,$[0]@,$[0]@,$[0]@,$[2.1566467]@
$[0.17439597]@,$[0.125435]@,$[0.143939]@,$[0.11973528]@,$[2.5242843]@
$[0.12441908]@,$[0.10257546]@,$[0.14802337]@,$[0.10236785]@,$[4.4398245]@
$[0.25206696]@,$[0.53705616]@,$[0.45617327]@,$[0.50726176]@,$[1.4573778]@
$[0.45057803]@,$[0.51423348]@,$[0.72014231]@,$[0.52062972]@,$[2.7716312]@
$[0.85436636]@,$[0.70655999]@,$[0.7816271]@,$[0.46039445]@,$[4.4095626]@
$[1.1432373]@,$[1.1102612]@,$[0.90819828]@,$[0.77226141]@,$[8.8091495]@
$[1.0531985]@,$[1.1973139]@,$[0.62066782]@,$[0.46300976]@,$[5.2453992]@
$[0.60333636]@,$[1.1949822]@,$[0.40165426]@,$[0.55907817]@,$[4.5058418]@
$[1.1772706]@,$[1.7772182]@,$[1.7425246]@,$[1.5318167]@,$[56.791902]@
$[1.4782231]@,$[1.9147407]@,$[1.2035899]@,$[0.51088073]@,$[14.632118]@
$[0.73805212]@,$[1.6689207]@,$[1.9395476]@,$[0.91443579]@,$[22.401445]@
$[1.4023552]@,$[2.0961623]@,$[1.8717165]@,$[2.0076116]@,$[152.80227]@
$[1.7990273]@,$[1.9825032]@,$[1.2167495]@,$[1.9788488]@,$[139.27139]@
$[1.9053246]@,$[1.6154552]@,$[2.5883637]@,$[1.6104098]@,$[147.7229]@
$[1.1074846]@,$[1.6281995]@,$[1.6115338]@,$[0.94427664]@,$[21.567719]@
$[2.9449988]@,$[2.5359343]@,$[1.9502767]@,$[1.5260393]@,$[244.3226]@
$[1.3372819]@,$[2.1052381]@,$[2.796064]@,$[1.7577417]@,$[158.62936]@
$[2.1000031]@,$[1.9240006]@,$[3.1607587]@,$[2.6110541]@,$[636.91434]@
$[2.3092898]@,$[2.6275705]@,$[0.95754415]@,$[1.1031813]@,$[48.305867]@

```

EE19B008

alpha = 0.15553448

MLR FIT FUNCTION

```

Y = beta_0 + beta_1 X1 X3 X4 X4 X4 + beta_2 X2 X4 X3 X3 X2 + beta_3 X3 X1 X2 X2 X2
+ beta_4 X4 X2 X2 X4 X4

```

BT2022_qiv_22_alldata

PARAMATER FOR POPULATION RANGE: beta_0

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[0.47140392]@
\$[0.059767413]@,\$[0.19141934]@,\$[0.13811969]@,\$[0.12785026]@,\$[1.0402301]@
\$[0.29811183]@,\$[0.38625165]@,\$[0.21506387]@,\$[0.18325123]@,\$[1.184629]@
\$[0.53657906]@,\$[0.15894496]@,\$[0.31153627]@,\$[0.51018066]@,\$[1.8881602]@
\$[0.75504518]@,\$[0.3655566]@,\$[0.20237932]@,\$[0.48187413]@,\$[0.76807966]@
\$[0.31273185]@,\$[0.29979173]@,\$[0.51669981]@,\$[0.65219693]@,\$[0.77145729]@
\$[0.79953893]@,\$[1.1981722]@,\$[0.76336077]@,\$[0.66287724]@,\$[5.7954647]@
\$[0.40823255]@,\$[0.64842883]@,\$[0.95065667]@,\$[0.52983705]@,\$[1.4418125]@
\$[1.3688673]@,\$[1.0050272]@,\$[0.64545722]@,\$[1.0084585]@,\$[2.4864969]@
\$[1.6873118]@,\$[0.79626245]@,\$[1.5525173]@,\$[1.0245248]@,\$[8.8069311]@
\$[1.8859553]@,\$[1.9732452]@,\$[1.4786709]@,\$[1.000794]@,\$[88.530291]@
\$[1.2763343]@,\$[1.6049571]@,\$[1.8713244]@,\$[0.94796691]@,\$[46.956768]@
\$[0.97376487]@,\$[1.7694157]@,\$[1.6467448]@,\$[2.0983407]@,\$[-9.9140453]@
\$[0.9697061]@,\$[0.96978927]@,\$[0.80846956]@,\$[1.857523]@,\$[-6.7933341]@
\$[1.8052744]@,\$[2.4365207]@,\$[1.9227804]@,\$[2.2871475]@,\$[104.43325]@
\$[0.96331761]@,\$[1.1021151]@,\$[1.1294333]@,\$[2.3522281]@,\$[-17.340793]@
\$[2.5251355]@,\$[2.6497104]@,\$[1.5539809]@,\$[2.2037043]@,\$[166.94068]@
\$[3.0264835]@,\$[2.5157353]@,\$[1.7143824]@,\$[2.9559667]@,\$[79.755121]@
\$[2.1014943]@,\$[1.5803634]@,\$[2.8992172]@,\$[1.7196987]@,\$[142.17485]@
\$[1.1689247]@,\$[3.052197]@,\$[3.2284173]@,\$[1.0591232]@,\$[528.36961]@

EE19B010

alpha = 0.19065291

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X1 X4 X4 X1 + beta_2 X2 X1 X3 X1 X2 + beta_3 X3 X3 X4 X3 X3
+ beta_4 X4 X4 X1 X4 X4

PARAMATER FOR POPULATION RANGE: beta_2

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[5.4972284]@
\$[0.071037992]@,\$[0.11931899]@,\$[0.16825964]@,\$[0.06783047]@,\$[5.420246]@
\$[0.1166001]@,\$[0.38452314]@,\$[0.19999369]@,\$[0.13396531]@,\$[6.3346173]@
\$[0.19273371]@,\$[0.41464809]@,\$[0.28329632]@,\$[0.30223395]@,\$[5.5858847]@
\$[0.28085151]@,\$[0.42731566]@,\$[0.30058783]@,\$[0.40338334]@,\$[5.2143418]@
\$[0.35741488]@,\$[0.80023103]@,\$[0.71203219]@,\$[0.6496679]@,\$[5.4279429]@
\$[0.35099048]@,\$[0.664516]@,\$[0.94910805]@,\$[0.36725784]@,\$[6.286584]@
\$[0.77025331]@,\$[1.2703251]@,\$[1.2923541]@,\$[0.73698994]@,\$[10.713273]@
\$[1.5435618]@,\$[0.63347552]@,\$[0.45115111]@,\$[1.5269183]@,\$[-22.040029]@
\$[1.0447878]@,\$[0.67278368]@,\$[1.125116]@,\$[1.477656]@,\$[0.51538246]@
\$[1.9125329]@,\$[1.8919874]@,\$[1.2412781]@,\$[1.9623975]@,\$[-26.326843]@
\$[0.85731696]@,\$[0.89856002]@,\$[0.85785919]@,\$[1.6564552]@,\$[0.54390495]@
\$[1.7385074]@,\$[1.8243627]@,\$[1.1822875]@,\$[1.3505904]@,\$[19.133533]@
\$[1.9170751]@,\$[2.1129977]@,\$[0.96580956]@,\$[0.81627926]@,\$[45.219817]@
\$[1.1504261]@,\$[2.5868427]@,\$[2.6557217]@,\$[1.7267499]@,\$[180.94467]@
\$[2.0139474]@,\$[1.6383387]@,\$[0.76660364]@,\$[1.157303]@,\$[-1.2813775]@
\$[2.0468866]@,\$[1.2731197]@,\$[3.0082144]@,\$[1.2555437]@,\$[164.57371]@

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\$[3.1183197]@,\$[2.2168521]@,\$[1.3696735]@,\$[2.1419412]@,\$[-211.51725]@
\$[2.5745599]@,\$[3.5298422]@,\$[2.5362591]@,\$[3.3326811]@,\$[210.17082]@
\$[2.0616958]@,\$[2.0300582]@,\$[2.5567804]@,\$[3.0709633]@,\$[7.5679291]@

EE19B013

alpha = 0.065804788
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X4 X2 X4 X3 + beta_2 X2 X2 X4 X2 X2 + beta_3 X3 X3 X2 X3 X1
+ beta_4 X4 X4 X1 X2 X3
PARAMATER FOR POPULATION RANGE: beta_4
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[1.2449465]@
\$[0.072618776]@,\$[0.11162366]@,\$[0.073021372]@,\$[0.1880311]@,\$[0.55439916]@
\$[0.27842574]@,\$[0.12484698]@,\$[0.31457384]@,\$[0.12964596]@,\$[2.078265]@
\$[0.41800191]@,\$[0.36146088]@,\$[0.47921097]@,\$[0.32671592]@,\$[-0.64401695]@
\$[0.24147526]@,\$[0.75056813]@,\$[0.43625546]@,\$[0.29733224]@,\$[1.8363372]@
\$[0.26826936]@,\$[0.4447522]@,\$[0.25055208]@,\$[0.79991284]@,\$[2.176629]@
\$[0.58639027]@,\$[0.88216955]@,\$[1.0067615]@,\$[0.90683105]@,\$[6.1780922]@
\$[0.99502599]@,\$[0.83987945]@,\$[1.2459749]@,\$[1.3181133]@,\$[15.919463]@
\$[0.94025455]@,\$[1.3313768]@,\$[1.5073568]@,\$[0.41170006]@,\$[27.667859]@
\$[1.5476193]@,\$[1.1744877]@,\$[0.77091578]@,\$[0.67473808]@,\$[11.669463]@
\$[0.60342252]@,\$[1.2648482]@,\$[0.84056098]@,\$[1.3106069]@,\$[16.714905]@
\$[2.1734569]@,\$[1.4489425]@,\$[1.7688516]@,\$[1.9716079]@,\$[180.67104]@
\$[1.2214714]@,\$[1.6903616]@,\$[1.1661885]@,\$[0.61589176]@,\$[37.755272]@
\$[2.1958745]@,\$[2.424556]@,\$[1.579801]@,\$[1.9731778]@,\$[437.49359]@
\$[0.82908766]@,\$[1.5587464]@,\$[1.5833259]@,\$[0.95973349]@,\$[49.533744]@
\$[1.3236826]@,\$[1.9145384]@,\$[2.0794017]@,\$[1.2175508]@,\$[186.9094]@
\$[2.5891937]@,\$[1.0389328]@,\$[1.3070684]@,\$[1.4166478]@,\$[57.198375]@
\$[3.1009612]@,\$[2.3253264]@,\$[2.7654163]@,\$[2.9759175]@,\$[1568.7836]@
\$[1.9161228]@,\$[1.9224949]@,\$[1.049625]@,\$[1.7308724]@,\$[138.76726]@
\$[2.8473898]@,\$[1.4450766]@,\$[1.6260789]@,\$[1.3977279]@,\$[145.81575]@

EE19B014

alpha = 0.18066688
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X1 X1 X1 X1 + beta_2 X2 X2 X4 X4 X3 + beta_3 X3 X4 X4 X1 X4
+ beta_4 X4 X2 X2 X4 X1
PARAMATER FOR POPULATION RANGE: beta_2
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[0.19970547]@
\$[0.062285841]@,\$[0.19207023]@,\$[0.11999481]@,\$[0.1512118]@,\$[-0.78882359]@
\$[0.13625322]@,\$[0.306717]@,\$[0.27449802]@,\$[0.10574569]@,\$[0.40803389]@
\$[0.55317709]@,\$[0.47825011]@,\$[0.23484427]@,\$[0.58081167]@,\$[0.81134059]@
\$[0.34465196]@,\$[0.55873837]@,\$[0.47231713]@,\$[0.62788044]@,\$[0.78616715]@
\$[0.7278343]@,\$[0.7590405]@,\$[0.95409294]@,\$[0.27194199]@,\$[-1.2054548]@
\$[0.30753868]@,\$[0.9642704]@,\$[0.38867554]@,\$[1.0444728]@,\$[1.7841918]@

```

BT2022_qiv_22_alldata
$[0.67623616]@,$[0.50434216]@,$[0.66191618]@,$[0.48855124]@,$[-1.7467493]@
$[0.60836228]@,$[1.003462]@,$[0.73573466]@,$[1.4666446]@,$[5.7296589]@
$[0.84705398]@,$[1.2502742]@,$[1.4185728]@,$[1.799163]@,$[32.440395]@
$[1.0560541]@,$[1.5645067]@,$[1.0802026]@,$[1.5697568]@,$[35.390952]@
$[1.0199007]@,$[2.1189333]@,$[1.6656575]@,$[2.1587855]@,$[157.73954]@
$[1.4060881]@,$[2.2343385]@,$[1.0562669]@,$[1.593267]@,$[79.002508]@
$[2.2333454]@,$[1.2881965]@,$[0.83218131]@,$[2.4303382]@,$[276.82667]@
$[0.97350756]@,$[0.81452219]@,$[1.5000054]@,$[2.2166738]@,$[22.557628]@
$[2.8776676]@,$[2.6755483]@,$[2.7823717]@,$[2.2223725]@,$[1302.0137]@
$[2.3362906]@,$[1.7661011]@,$[2.072569]@,$[2.4433743]@,$[468.10077]@
$[2.6487695]@,$[3.2071587]@,$[2.0939164]@,$[2.6195606]@,$[1188.9026]@
$[1.3631568]@,$[3.4631646]@,$[0.92460838]@,$[2.8874031]@,$[386.18547]@
$[3.5628084]@,$[1.7791571]@,$[1.5836064]@,$[1.8944177]@,$[2673.255]@

```

```

EE19B017
alpha = 0.098141453
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X2 X2 X1 X4 + beta_2 X2 X2 X4 X2 X3 + beta_3 X3 X1 X1 X3 X1
+ beta_4 X4 X2 X1 X2 X3
PARAMATER FOR POPULATION RANGE: beta_2
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@,$[-1.6439538]@
$[0.13544625]@,$[0.1330574]@,$[0.062342486]@,$[0.12731514]@,$[-2.1553157]@
$[0.25739651]@,$[0.14507934]@,$[0.37695494]@,$[0.28910436]@,$[-0.98806264]@
$[0.22431771]@,$[0.17616341]@,$[0.40156056]@,$[0.21413075]@,$[-1.1920563]@
$[0.59348549]@,$[0.56726653]@,$[0.67023433]@,$[0.63509437]@,$[-0.49029384]@
$[0.44126874]@,$[0.32385591]@,$[0.25249392]@,$[0.71615184]@,$[-0.45169748]@
$[0.77854146]@,$[0.94984624]@,$[1.1328414]@,$[0.69647728]@,$[-0.56022794]@
$[0.56111782]@,$[0.75207116]@,$[0.46593522]@,$[0.48659177]@,$[-0.28938484]@
$[1.409893]@,$[1.1037461]@,$[1.352554]@,$[0.59809574]@,$[-3.1231515]@
$[1.5792917]@,$[0.57058762]@,$[1.2617912]@,$[1.1509461]@,$[-4.9700411]@
$[0.98850617]@,$[1.4630045]@,$[1.6445049]@,$[1.9284887]@,$[2.0157084]@
$[2.054363]@,$[1.8514227]@,$[0.81220752]@,$[1.1256543]@,$[-10.51982]@
$[1.6809163]@,$[0.9399113]@,$[1.0435242]@,$[2.0479456]@,$[-2.8230256]@
$[1.6857985]@,$[2.0102579]@,$[0.83724449]@,$[1.7732884]@,$[-10.232419]@
$[2.4285966]@,$[2.2324499]@,$[2.3164249]@,$[1.3832207]@,$[-44.619615]@
$[0.8381855]@,$[2.7330638]@,$[2.6239862]@,$[2.586191]@,$[-51.353533]@
$[2.2846458]@,$[2.8485907]@,$[2.7718375]@,$[2.7503737]@,$[39.260992]@
$[3.2758367]@,$[1.5450789]@,$[1.5035239]@,$[2.1897153]@,$[-81.613718]@
$[2.3162249]@,$[2.0836561]@,$[2.8513728]@,$[1.6062584]@,$[-47.589872]@
$[3.4511947]@,$[2.9451437]@,$[2.672755]@,$[2.1256222]@,$[-173.6146]@

```

```

EE19B019
alpha = 0.19046715
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X3 X4 X3 X1 + beta_2 X2 X2 X4 X1 X3 + beta_3 X3 X3 X3 X3 X1

```

```

BT2022_qiv_22_alldata
+ beta_4 X4 X1 X1 X4 X1
PARAMATER FOR POPULATION RANGE: beta_0
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@[3.0871507]@
$[0.086952695]@,$[0.11306063]@,$[0.12930945]@,$[0.17524219]@,$[4.559012]@
$[0.26558055]@,$[0.39060649]@,$[0.31666724]@,$[0.21078894]@,$[4.1281357]@
$[0.41163503]@,$[0.5629048]@,$[0.226672]@,$[0.1989107]@,$[6.3723257]@
$[0.26124149]@,$[0.26092304]@,$[0.4256589]@,$[0.26170716]@,$[4.6185969]@
$[0.63516044]@,$[0.68853242]@,$[0.35575481]@,$[0.34269177]@,$[2.8122866]@
$[0.72490853]@,$[0.6568171]@,$[1.0843159]@,$[0.52118944]@,$[11.587745]@
$[0.55313954]@,$[1.1466011]@,$[1.3812941]@,$[1.073765]@,$[21.601863]@
$[1.5599224]@,$[0.6462675]@,$[1.463929]@,$[1.2899292]@,$[88.017989]@
$[0.93639165]@,$[1.0139923]@,$[1.3304777]@,$[1.4761233]@,$[42.922918]@
$[0.71406907]@,$[0.77814905]@,$[1.1875595]@,$[1.8809861]@,$[26.718158]@
$[2.1521602]@,$[1.7929351]@,$[2.1510928]@,$[1.877875]@,$[629.64193]@
$[2.3845679]@,$[1.0904704]@,$[1.3286312]@,$[1.2952091]@,$[165.46587]@
$[2.4513631]@,$[1.5793064]@,$[1.3160229]@,$[1.82458]@,$[282.94662]@
$[0.90473925]@,$[2.7578624]@,$[2.0493576]@,$[0.96697393]@,$[157.6756]@
$[1.7201785]@,$[1.5535049]@,$[0.85008558]@,$[0.94286342]@,$[45.212483]@
$[3.1758411]@,$[2.4603604]@,$[2.6604314]@,$[1.0410264]@,$[1357.8045]@
$[1.2717158]@,$[1.9360583]@,$[1.4853693]@,$[3.083261]@,$[247.67599]@
$[1.9180537]@,$[3.2503592]@,$[1.8807673]@,$[1.4182634]@,$[546.39079]@
$[2.0738564]@,$[0.99748824]@,$[1.5117799]@,$[3.0791102]@,$[364.5952]@

```

```

EE19B021
alpha = 0.17716143
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X3 X4 X2 X3 + beta_2 X2 X2 X3 X3 X1 + beta_3 X3 X3 X4 X1 X2
+ beta_4 X4 X1 X1 X2 X4
PARAMATER FOR POPULATION RANGE: beta_3
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@[4.8277235]@
$[0.050974212]@,$[0.11089571]@,$[0.11603128]@,$[0.15673841]@,$[2.4287302]@
$[0.3756436]@,$[0.36593464]@,$[0.34402641]@,$[0.22189026]@,$[3.3305413]@
$[0.2695558]@,$[0.15718168]@,$[0.52193008]@,$[0.44417548]@,$[3.6075106]@
$[0.3291584]@,$[0.22245723]@,$[0.4572782]@,$[0.57467477]@,$[1.2175203]@
$[0.90437152]@,$[0.8468739]@,$[0.27557306]@,$[0.93452217]@,$[6.4993091]@
$[0.95261562]@,$[0.63450713]@,$[0.49599872]@,$[0.82074223]@,$[6.7070459]@
$[1.1828786]@,$[0.46941588]@,$[1.2459708]@,$[0.95551958]@,$[13.038874]@
$[0.67896198]@,$[1.0407683]@,$[0.76563408]@,$[1.2999085]@,$[11.826207]@
$[1.0823611]@,$[0.48907672]@,$[1.243415]@,$[0.80783367]@,$[11.548836]@
$[1.313272]@,$[0.64313742]@,$[1.0169534]@,$[0.53570505]@,$[10.174319]@
$[1.9688619]@,$[1.2466166]@,$[1.9210615]@,$[1.5116482]@,$[198.75873]@
$[2.3247299]@,$[1.7485001]@,$[1.5347133]@,$[1.0320134]@,$[196.33572]@
$[1.1321888]@,$[1.9458653]@,$[0.93433449]@,$[2.1205612]@,$[95.173423]@
$[1.6479223]@,$[1.4378932]@,$[0.93841063]@,$[2.6699021]@,$[161.49565]@
$[1.1158558]@,$[2.8545273]@,$[2.3290227]@,$[1.109987]@,$[406.46428]@

```

BT2022_qiv_22_alldata

\$[3.0101933]@,\$[1.4850415]@,\$[1.210526]@,\$[0.95855656]@,\$[143.22441]@
 \$[2.5539488]@,\$[3.3110233]@,\$[2.6724815]@,\$[1.9885721]@,\$[2199.7301]@
 \$[1.711193]@,\$[2.9920983]@,\$[1.4995832]@,\$[3.4851968]@,\$[861.05046]@
 \$[1.705151]@,\$[2.2350837]@,\$[2.4966985]@,\$[1.4291607]@,\$[566.0267]@

EE19B024

alpha = 0.19326546

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X4 X2 X3 X3 + beta_2 X2 X2 X1 X1 X2 + beta_3 X3 X2 X3 X2 X1
 + beta_4 X4 X2 X4 X3 X1

PARAMATER FOR POPULATION RANGE: beta_4

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[1.4710222]@
 \$[0.085720091]@,\$[0.19599184]@,\$[0.17111488]@,\$[0.11410082]@,\$[0.13180208]@
 \$[0.2810027]@,\$[0.27359643]@,\$[0.26452352]@,\$[0.19107127]@,\$[-0.62489894]@
 \$[0.29839709]@,\$[0.49082432]@,\$[0.53052386]@,\$[0.490878]@,\$[-0.20656624]@
 \$[0.38342568]@,\$[0.55385996]@,\$[0.20783836]@,\$[0.7147264]@,\$[0.046166333]@
 \$[0.51521441]@,\$[0.58762127]@,\$[0.89499341]@,\$[0.92579632]@,\$[0.9446158]@
 \$[0.95605154]@,\$[0.60473351]@,\$[0.55140588]@,\$[0.43053456]@,\$[0.39816549]@
 \$[1.2149429]@,\$[0.92953266]@,\$[1.052986]@,\$[1.1103838]@,\$[8.4706259]@
 \$[1.3012852]@,\$[1.4759683]@,\$[1.302092]@,\$[1.2449115]@,\$[29.294757]@
 \$[1.4683252]@,\$[1.6000999]@,\$[0.85535879]@,\$[1.6467606]@,\$[31.456629]@
 \$[0.64779785]@,\$[1.4033133]@,\$[1.6569038]@,\$[0.55369511]@,\$[9.5931499]@
 \$[1.4205278]@,\$[1.8498674]@,\$[0.74457455]@,\$[1.1206102]@,\$[34.718101]@
 \$[0.93524992]@,\$[2.313647]@,\$[0.81430979]@,\$[1.9287992]@,\$[35.967934]@
 \$[0.91750858]@,\$[1.9434124]@,\$[1.5305154]@,\$[2.3151197]@,\$[55.973449]@
 \$[1.1121494]@,\$[1.8831286]@,\$[1.2121312]@,\$[1.6954125]@,\$[42.268231]@
 \$[1.1676907]@,\$[2.1181743]@,\$[1.846531]@,\$[1.8650998]@,\$[98.625225]@
 \$[1.499866]@,\$[1.3569805]@,\$[2.4207904]@,\$[1.4382697]@,\$[82.962986]@
 \$[3.2428011]@,\$[2.9336505]@,\$[0.95334215]@,\$[0.88954669]@,\$[577.30374]@
 \$[3.0050168]@,\$[3.3189927]@,\$[0.92890719]@,\$[2.4727446]@,\$[778.15892]@
 \$[1.9994838]@,\$[2.8071274]@,\$[1.5156838]@,\$[3.6223711]@,\$[410.47828]@

EE19B029

alpha = 0.13774287

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X2 X3 X3 X3 + beta_2 X2 X3 X3 X1 X4 + beta_3 X3 X4 X3 X4 X3
 + beta_4 X4 X1 X2 X4 X3

PARAMATER FOR POPULATION RANGE: beta_3

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[0.50731299]@
 \$[0.076176973]@,\$[0.13808874]@,\$[0.18980617]@,\$[0.15301348]@,\$[0.12640288]@
 \$[0.38533643]@,\$[0.35474512]@,\$[0.23195191]@,\$[0.25719981]@,\$[0.24085952]@
 \$[0.54088494]@,\$[0.28043634]@,\$[0.18298303]@,\$[0.5062078]@,\$[-1.3285929]@
 \$[0.59472101]@,\$[0.24686817]@,\$[0.37201001]@,\$[0.74870519]@,\$[0.56836997]@
 \$[0.82646187]@,\$[0.29990971]@,\$[0.84176135]@,\$[0.34958976]@,\$[0.82632571]@

BT2022_qiv_22_alldata

$\$[1.1522289]@, \$[0.98585871]@, \$[0.86471469]@, \$[0.64082087]@, \$[3.2006146]@$
 $\$[1.3716855]@, \$[1.1519591]@, \$[0.79338835]@, \$[1.3878818]@, \$[11.265834]@$
 $\$[0.86659428]@, \$[0.43269891]@, \$[1.5116661]@, \$[1.2698287]@, \$[30.406534]@$
 $\$[0.61680266]@, \$[0.72891896]@, \$[1.7503094]@, \$[1.4013573]@, \$[60.522074]@$
 $\$[1.2232223]@, \$[1.6789814]@, \$[1.5179843]@, \$[1.1641757]@, \$[56.593013]@$
 $\$[0.6486177]@, \$[1.4884361]@, \$[2.1069579]@, \$[1.0074391]@, \$[76.550555]@$
 $\$[1.9652722]@, \$[1.8231085]@, \$[1.2462529]@, \$[1.963182]@, \$[85.53775]@$
 $\$[2.3226694]@, \$[1.9279007]@, \$[1.2631054]@, \$[1.3695094]@, \$[71.35401]@$
 $\$[2.4139628]@, \$[0.73330316]@, \$[2.3527051]@, \$[2.7606739]@, \$[591.35021]@$
 $\$[2.6187328]@, \$[2.9256822]@, \$[1.1220264]@, \$[2.932655]@, \$[170.54578]@$
 $\$[2.3777239]@, \$[1.4057822]@, \$[2.7530854]@, \$[0.96563247]@, \$[316.18583]@$
 $\$[1.4825702]@, \$[3.2829981]@, \$[1.9253172]@, \$[2.8379407]@, \$[510.76894]@$
 $\$[2.202153]@, \$[3.0876242]@, \$[2.040924]@, \$[1.9130807]@, \$[456.29868]@$
 $\$[3.0346803]@, \$[1.8468644]@, \$[2.8227491]@, \$[1.9735327]@, \$[972.5408]@$

EE19B030

alpha = 0.157541

MLR FIT FUNCTION

$Y = \beta_0 + \beta_1 X_1 X_4 X_4 X_3 X_2 + \beta_2 X_2 X_3 X_1 X_3 X_4 + \beta_3 X_3 X_1 X_3 X_3 X_3$
 $+ \beta_4 X_4 X_2 X_2 X_2 X_1$

PARAMATER FOR POPULATION RANGE: beta_4

DATA COLUMNS X1 X2 X3 X4 Y

$\$[0]@, \$[0]@, \$[0]@, \$[0]@, \$[2.9586012]@$
 $\$[0.09197529]@, \$[0.15626176]@, \$[0.11413554]@, \$[0.063888655]@, \$[3.6877041]@$
 $\$[0.35617382]@, \$[0.39199914]@, \$[0.166845]@, \$[0.18039159]@, \$[2.5984826]@$
 $\$[0.25613]@, \$[0.18162591]@, \$[0.58758458]@, \$[0.23288323]@, \$[3.0109362]@$
 $\$[0.67295683]@, \$[0.60990833]@, \$[0.60145299]@, \$[0.26475333]@, \$[4.9685919]@$
 $\$[0.52803426]@, \$[0.72244915]@, \$[0.25245459]@, \$[0.84286889]@, \$[3.6354407]@$
 $\$[1.1283943]@, \$[0.85818845]@, \$[0.3367694]@, \$[0.38123755]@, \$[3.3502686]@$
 $\$[0.51110094]@, \$[0.82740074]@, \$[0.59520696]@, \$[1.1276888]@, \$[4.6810983]@$
 $\$[1.0964503]@, \$[0.70400368]@, \$[0.80887922]@, \$[0.93899604]@, \$[4.9860056]@$
 $\$[1.3479407]@, \$[0.9661854]@, \$[0.72217634]@, \$[1.1155457]@, \$[8.3323487]@$
 $\$[0.62040161]@, \$[1.9735981]@, \$[1.1391147]@, \$[0.52539964]@, \$[0.73200675]@$
 $\$[1.0567551]@, \$[1.9147874]@, \$[1.6348684]@, \$[1.110593]@, \$[20.010778]@$
 $\$[1.5222709]@, \$[1.2878421]@, \$[1.854895]@, \$[1.2656678]@, \$[44.089599]@$
 $\$[2.29437]@, \$[0.86340242]@, \$[0.72696787]@, \$[1.0867031]@, \$[7.5087869]@$
 $\$[1.6896674]@, \$[2.2292872]@, \$[0.72430401]@, \$[2.3571637]@, \$[17.51963]@$
 $\$[1.9947624]@, \$[1.8595887]@, \$[2.7782438]@, \$[1.6791808]@, \$[224.30728]@$
 $\$[3.0571908]@, \$[2.971033]@, \$[1.4677876]@, \$[1.6090344]@, \$[31.566019]@$
 $\$[2.4127517]@, \$[0.92358017]@, \$[3.3795487]@, \$[1.3354234]@, \$[214.52001]@$
 $\$[1.9913919]@, \$[1.2996306]@, \$[3.2913163]@, \$[2.7149936]@, \$[477.53016]@$
 $\$[2.9415772]@, \$[1.224166]@, \$[1.9573649]@, \$[1.4359957]@, \$[105.79749]@$

EE19B033

alpha = 0.13420549

MLR FIT FUNCTION

```

BT2022_qiv_22_alldata
Y = beta_0 + beta_1 X1 X4 X3 X3 X2 + beta_2 X2 X2 X4 X2 X4 + beta_3 X3 X3 X3 X2 X1
+ beta_4 X4 X1 X4 X1 X1
PARAMATER FOR POPULATION RANGE: beta_2
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@,$[-2.382752]@
$[0.097572403]@,$[0.089009469]@,$[0.19052613]@,$[0.19004933]@,$[-1.390853]@
$[0.14966055]@,$[0.25848922]@,$[0.14076479]@,$[0.20846044]@,$[-1.5608486]@
$[0.55724141]@,$[0.57155886]@,$[0.39508807]@,$[0.50067955]@,$[-0.34480323]@
$[0.311134]@,$[0.74467468]@,$[0.46620589]@,$[0.4132124]@,$[-2.0204141]@
$[0.56837468]@,$[0.78015929]@,$[0.57316676]@,$[0.86475392]@,$[-0.28942321]@
$[0.86884575]@,$[0.6883552]@,$[0.8657794]@,$[0.39677632]@,$[1.6928963]@
$[0.73484807]@,$[0.35891305]@,$[1.2083649]@,$[0.45087526]@,$[-0.60739077]@
$[1.5355949]@,$[0.95293263]@,$[1.312772]@,$[0.73310342]@,$[13.289906]@
$[1.4313575]@,$[0.52137711]@,$[1.5419624]@,$[1.1674146]@,$[13.85977]@
$[0.76116832]@,$[1.3937782]@,$[0.86036422]@,$[1.9567523]@,$[14.606745]@
$[0.86573233]@,$[1.8245788]@,$[1.3879537]@,$[1.3747171]@,$[27.72076]@
$[1.2248617]@,$[0.6954505]@,$[1.8426925]@,$[2.0004186]@,$[32.656034]@
$[2.1321956]@,$[0.9256163]@,$[1.3553347]@,$[1.6901752]@,$[59.772917]@
$[1.5325543]@,$[1.0460642]@,$[1.7040612]@,$[0.72795028]@,$[25.614337]@
$[0.82851021]@,$[2.9556477]@,$[0.80074558]@,$[2.9957006]@,$[236.20746]@
$[2.4037274]@,$[2.0172422]@,$[1.8100557]@,$[2.8495412]@,$[370.75039]@
$[2.1852433]@,$[1.3603461]@,$[2.589468]@,$[2.7854174]@,$[359.36694]@
$[2.587678]@,$[1.8931641]@,$[3.1814638]@,$[3.0761235]@,$[959.68971]@
$[2.8284483]@,$[3.6066385]@,$[3.129888]@,$[3.6372384]@,$[2499.4193]@

```

EE19B036

```

alpha = 0.19430837
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X4 X1 X1 X1 + beta_2 X2 X1 X3 X4 X1 + beta_3 X3 X4 X2 X3 X1
+ beta_4 X4 X1 X3 X1 X3
PARAMATER FOR POPULATION RANGE: beta_4
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@,$[5.103068]@
$[0.15894388]@,$[0.057461064]@,$[0.10920416]@,$[0.14110586]@,$[4.4498524]@
$[0.1782283]@,$[0.33893967]@,$[0.38545568]@,$[0.19322529]@,$[6.0294067]@
$[0.45510284]@,$[0.29330017]@,$[0.34589386]@,$[0.45762814]@,$[6.6284072]@
$[0.29545802]@,$[0.39427109]@,$[0.79106389]@,$[0.71062491]@,$[6.1236946]@
$[0.96786595]@,$[0.47866342]@,$[0.79415201]@,$[0.54695808]@,$[9.9831248]@
$[0.96125985]@,$[0.38052489]@,$[0.45848924]@,$[0.48329635]@,$[8.9891694]@
$[1.2046516]@,$[0.69745341]@,$[0.88260799]@,$[0.81601147]@,$[17.238875]@
$[1.22984]@,$[1.0040706]@,$[0.7240544]@,$[0.94345335]@,$[17.124879]@
$[0.86178502]@,$[0.76673053]@,$[0.9805952]@,$[1.6463357]@,$[15.161492]@
$[0.9988869]@,$[0.84977158]@,$[0.54039374]@,$[0.70846847]@,$[9.3942685]@
$[1.9837922]@,$[1.6913037]@,$[1.2527035]@,$[2.1020684]@,$[225.68843]@
$[1.3175508]@,$[1.0693058]@,$[1.9953452]@,$[2.3528993]@,$[122.81346]@
$[2.2803633]@,$[2.4319099]@,$[1.0381219]@,$[2.1861354]@,$[347.5035]@
$[2.5558165]@,$[1.120491]@,$[0.86125796]@,$[1.6848504]@,$[374.65463]@

```

```

BT2022_qiv_22_alldata
$[2.3905763]@,$[0.98887572]@,$[2.5712084]@,$[2.3025845]@,$[764.2757]@
$[3.0304053]@,$[0.997872]@,$[0.80957741]@,$[2.4081831]@,$[1006.7175]@
$[2.7344227]@,$[1.7798225]@,$[2.2488716]@,$[1.752233]@,$[794.40632]@
$[2.270785]@,$[1.2981144]@,$[2.3210199]@,$[2.7637758]@,$[723.1798]@
$[3.2065205]@,$[3.0263045]@,$[2.1693144]@,$[1.8915375]@,$[1431.4432]@

```

EE19B039

alpha = 0.17071172

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X3 X1 X1 X2 + beta_2 X2 X2 X2 X2 X1 + beta_3 X3 X4 X3 X4 X3
+ beta_4 X4 X2 X3 X2 X3

PARAMATER FOR POPULATION RANGE: beta_1

DATA COLUMNS X1 X2 X3 X4 Y

```

$[0]@,$[0]@,$[0]@,$[0]@,$[4.5572695]@
$[0.052544268]@,$[0.09631067]@,$[0.17260903]@,$[0.17949623]@,$[4.1373514]@
$[0.31035104]@,$[0.38793736]@,$[0.19172884]@,$[0.1143818]@,$[4.1540087]@
$[0.44410236]@,$[0.51395028]@,$[0.57656641]@,$[0.56702919]@,$[1.5278386]@
$[0.56358142]@,$[0.50601487]@,$[0.51312218]@,$[0.72667351]@,$[3.051716]@
$[0.84179378]@,$[0.40953303]@,$[0.70332643]@,$[0.97174609]@,$[2.3712344]@
$[0.94037385]@,$[0.70290152]@,$[0.65714647]@,$[0.6056429]@,$[2.7578036]@
$[1.00973]@,$[1.1689784]@,$[0.46484119]@,$[0.92088613]@,$[2.3520447]@
$[0.68921646]@,$[0.70188968]@,$[1.1798889]@,$[0.50768155]@,$[4.1804092]@
$[0.82291549]@,$[0.51251403]@,$[1.3354664]@,$[1.5415094]@,$[-2.3324327]@
$[0.96322115]@,$[1.2255339]@,$[1.5758304]@,$[1.7741235]@,$[-5.6608393]@
$[1.0761743]@,$[1.207658]@,$[1.0161542]@,$[1.5726865]@,$[2.2208123]@
$[2.0852576]@,$[1.0927101]@,$[2.3060101]@,$[0.60975909]@,$[1.8190547]@
$[2.1298006]@,$[1.363847]@,$[1.1840827]@,$[1.0850633]@,$[2.2200004]@
$[2.3227218]@,$[1.7389462]@,$[1.6848811]@,$[1.9267112]@,$[-9.8126186]@
$[2.1797577]@,$[2.1602396]@,$[1.1637762]@,$[2.1037439]@,$[-21.14442]@
$[1.8685244]@,$[2.2943109]@,$[0.85544192]@,$[2.8584286]@,$[-26.923184]@
$[2.2558506]@,$[2.449668]@,$[1.0037475]@,$[2.3522178]@,$[-41.81749]@
$[3.3072001]@,$[3.0363055]@,$[1.7151525]@,$[2.2409388]@,$[-127.74384]@
$[2.8586138]@,$[1.8911951]@,$[1.6226921]@,$[3.3410034]@,$[-32.404067]@

```

EE19B040

alpha = 0.19670258

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X3 X1 X2 X4 + beta_2 X2 X4 X1 X2 X1 + beta_3 X3 X3 X1 X2 X2
+ beta_4 X4 X4 X3 X1 X4

PARAMATER FOR POPULATION RANGE: beta_3

DATA COLUMNS X1 X2 X3 X4 Y

```

$[0]@,$[0]@,$[0]@,$[0]@,$[0.89878345]@
$[0.18838475]@,$[0.17581276]@,$[0.11243602]@,$[0.057067206]@,$[0.98638936]@
$[0.31021484]@,$[0.32822747]@,$[0.11689178]@,$[0.26613824]@,$[0.88369452]@
$[0.35096977]@,$[0.30375012]@,$[0.53244945]@,$[0.586358]@,$[0.37281302]@
$[0.67593977]@,$[0.20516269]@,$[0.75705954]@,$[0.29920615]@,$[0.85227013]@

```

BT2022_qiv_22_alldata

$\$[0.68359678]@, \$[0.35851679]@, \$[0.5140375]@, \$[0.76175089]@, \$[2.0264278]@$
 $\$[0.9228705]@, \$[1.1937702]@, \$[0.59977588]@, \$[0.90879732]@, \$[6.7716061]@$
 $\$[0.83226985]@, \$[0.79951362]@, \$[1.3662144]@, \$[0.45951068]@, \$[6.7603585]@$
 $\$[0.58958287]@, \$[1.5208277]@, \$[0.44223379]@, \$[1.0377056]@, \$[5.6865315]@$
 $\$[1.3142964]@, \$[0.6733217]@, \$[1.1211672]@, \$[0.50327729]@, \$[6.5533048]@$
 $\$[0.78927495]@, \$[1.730694]@, \$[1.7912827]@, \$[0.55725891]@, \$[32.94253]@$
 $\$[2.1567349]@, \$[1.7912042]@, \$[2.0417299]@, \$[1.4074149]@, \$[247.88432]@$
 $\$[1.8963908]@, \$[1.8518828]@, \$[1.6752065]@, \$[0.78041252]@, \$[113.7094]@$
 $\$[2.2090514]@, \$[1.4749572]@, \$[1.4626252]@, \$[0.93779814]@, \$[94.885478]@$
 $\$[2.5486011]@, \$[1.4498241]@, \$[2.1084337]@, \$[0.70506801]@, \$[154.77501]@$
 $\$[1.5642319]@, \$[2.2160743]@, \$[2.4169018]@, \$[1.461822]@, \$[277.96106]@$
 $\$[3.128964]@, \$[2.3665934]@, \$[0.87505879]@, \$[1.9608621]@, \$[401.87049]@$
 $\$[1.1806244]@, \$[1.384459]@, \$[1.3266917]@, \$[2.0733917]@, \$[71.480612]@$
 $\$[1.6642533]@, \$[3.273601]@, \$[2.1241136]@, \$[1.7633677]@, \$[523.56196]@$
 $\$[2.793922]@, \$[3.3569552]@, \$[2.8200146]@, \$[3.2504038]@, \$[2752.0867]@$

EE19B042

alpha = 0.17459684

MLR FIT FUNCTION

$Y = \beta_0 + \beta_1 X_1 X_1 X_2 X_3 X_3 + \beta_2 X_2 X_4 X_2 X_1 X_1 + \beta_3 X_3 X_3 X_4 X_1 X_2$
 $+ \beta_4 X_4 X_2 X_1 X_4 X_1$

PARAMATER FOR POPULATION RANGE: beta_0

DATA COLUMNS X1 X2 X3 X4 Y

$\$[0]@, \$[0]@, \$[0]@, \$[0]@, \$[0.87093039]@$
 $\$[0.082199492]@, \$[0.1678973]@, \$[0.19448861]@, \$[0.094918172]@, \$[1.1221366]@$
 $\$[0.32924778]@, \$[0.12644581]@, \$[0.16352459]@, \$[0.28751686]@, \$[4.6276405]@$
 $\$[0.19732084]@, \$[0.37431432]@, \$[0.25056039]@, \$[0.49849308]@, \$[1.9026289]@$
 $\$[0.25353353]@, \$[0.79878365]@, \$[0.55320704]@, \$[0.21315908]@, \$[2.3772533]@$
 $\$[0.56821848]@, \$[0.86807676]@, \$[0.95891576]@, \$[0.63470991]@, \$[1.9195582]@$
 $\$[0.827871]@, \$[0.76168094]@, \$[0.43897635]@, \$[0.99657624]@, \$[2.6311513]@$
 $\$[0.80838124]@, \$[0.46896367]@, \$[0.72069769]@, \$[0.96712469]@, \$[2.3594614]@$
 $\$[1.1097451]@, \$[0.4082784]@, \$[1.2776166]@, \$[1.056746]@, \$[5.5588124]@$
 $\$[1.7158415]@, \$[1.336265]@, \$[0.72109963]@, \$[1.3824947]@, \$[25.843707]@$
 $\$[1.1660452]@, \$[1.3494205]@, \$[0.99066677]@, \$[1.6545298]@, \$[22.946369]@$
 $\$[2.1500931]@, \$[2.1161728]@, \$[2.1987797]@, \$[0.8568751]@, \$[181.93364]@$
 $\$[1.449901]@, \$[2.0931395]@, \$[0.86492687]@, \$[1.4186983]@, \$[44.383224]@$
 $\$[1.9145074]@, \$[0.87760362]@, \$[1.5688652]@, \$[1.3558897]@, \$[42.205029]@$
 $\$[0.92334793]@, \$[1.2354251]@, \$[1.3884442]@, \$[1.73915]@, \$[20.430798]@$
 $\$[2.0715295]@, \$[2.8793633]@, \$[2.5108156]@, \$[1.5401204]@, \$[405.613]@$
 $\$[2.5244333]@, \$[2.5328489]@, \$[2.9477863]@, \$[2.4813508]@, \$[850.4255]@$
 $\$[3.1131739]@, \$[2.6253985]@, \$[3.1121353]@, \$[2.741862]@, \$[1458.1956]@$
 $\$[3.3203805]@, \$[1.9159692]@, \$[3.1561574]@, \$[3.1168232]@, \$[1268.6779]@$
 $\$[3.0131535]@, \$[1.4741154]@, \$[1.3250109]@, \$[3.7210326]@, \$[388.97691]@$

EE19B044

alpha = 0.059990304

BT2022_qiv_22_alldata

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X2 X3 X4 X1 + beta_2 X2 X1 X1 X1 X4 + beta_3 X3 X2 X3 X4 X1
+ beta_4 X4 X3 X1 X1 X2

PARAMATER FOR POPULATION RANGE: beta_4

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[5.0724465]@
\$[0.15658356]@,\$[0.15467848]@,\$[0.19403926]@,\$[0.15322608]@,\$[3.2097816]@
\$[0.27452282]@,\$[0.34370584]@,\$[0.37919765]@,\$[0.12186138]@,\$[3.2018194]@
\$[0.20210984]@,\$[0.15954293]@,\$[0.35727185]@,\$[0.52870569]@,\$[3.9437732]@
\$[0.72014059]@,\$[0.42946377]@,\$[0.57654187]@,\$[0.74358791]@,\$[4.9852384]@
\$[0.84271182]@,\$[0.82360169]@,\$[0.87265136]@,\$[0.53994316]@,\$[2.4358766]@
\$[1.1844913]@,\$[1.1814863]@,\$[0.45094588]@,\$[1.1266571]@,\$[8.8173445]@
\$[0.92562838]@,\$[0.98265945]@,\$[0.95734666]@,\$[0.74610141]@,\$[6.8647899]@
\$[0.57501599]@,\$[1.2020412]@,\$[1.0286761]@,\$[0.59853309]@,\$[3.8258923]@
\$[0.95569942]@,\$[1.3686708]@,\$[1.4926036]@,\$[1.637051]@,\$[12.066175]@
\$[1.6077211]@,\$[1.1873561]@,\$[0.6370598]@,\$[0.69251527]@,\$[14.890308]@
\$[1.2416359]@,\$[1.1427772]@,\$[1.5135027]@,\$[1.2676355]@,\$[13.654056]@
\$[1.2508926]@,\$[1.937717]@,\$[2.0909874]@,\$[1.8087551]@,\$[31.828734]@
\$[0.77801277]@,\$[2.170934]@,\$[1.1228156]@,\$[1.592279]@,\$[11.106918]@
\$[1.3224987]@,\$[2.7313417]@,\$[1.6063829]@,\$[2.7605734]@,\$[70.565954]@
\$[2.6186731]@,\$[0.85461694]@,\$[2.6236571]@,\$[1.9330211]@,\$[111.37262]@
\$[1.0473503]@,\$[2.2397061]@,\$[2.0489726]@,\$[1.1927862]@,\$[16.361361]@
\$[1.9155336]@,\$[1.4573719]@,\$[2.4404712]@,\$[3.0193544]@,\$[124.80957]@
\$[2.2769643]@,\$[1.0045082]@,\$[2.5004462]@,\$[1.7866311]@,\$[82.35971]@
\$[2.3118318]@,\$[1.8825894]@,\$[3.1734739]@,\$[1.5512365]@,\$[145.10468]@

EE19B061

alpha = 0.10972959

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X3 X3 X2 X2 + beta_2 X2 X1 X1 X3 X1 + beta_3 X3 X1 X1 X3 X3
+ beta_4 X4 X2 X2 X1 X2

PARAMATER FOR POPULATION RANGE: beta_0

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[1.0088083]@
\$[0.1315868]@,\$[0.15276407]@,\$[0.068875879]@,\$[0.19068607]@,\$[-2.2951337]@
\$[0.25999632]@,\$[0.24613338]@,\$[0.38757289]@,\$[0.34435019]@,\$[-1.834653]@
\$[0.43527364]@,\$[0.23703619]@,\$[0.47269866]@,\$[0.4513422]@,\$[0.098009375]@
\$[0.30829874]@,\$[0.75857202]@,\$[0.65846093]@,\$[0.75433976]@,\$[-1.1783631]@
\$[0.93316201]@,\$[0.37009339]@,\$[0.63388693]@,\$[0.28380612]@,\$[2.0046147]@
\$[0.62234417]@,\$[1.0131872]@,\$[1.0220384]@,\$[0.65462409]@,\$[2.595597]@
\$[0.50425635]@,\$[0.90888401]@,\$[0.39830073]@,\$[0.63130115]@,\$[-0.5250358]@
\$[0.416514]@,\$[1.1755665]@,\$[0.56279756]@,\$[0.89288886]@,\$[1.4760005]@
\$[1.5983879]@,\$[0.5780472]@,\$[1.7620328]@,\$[1.7571321]@,\$[48.531574]@
\$[0.69140296]@,\$[1.9538948]@,\$[1.6375213]@,\$[1.1803319]@,\$[53.415483]@
\$[1.4957505]@,\$[1.2648333]@,\$[2.0271667]@,\$[0.67422898]@,\$[94.48857]@
\$[1.687528]@,\$[1.7280132]@,\$[1.0933428]@,\$[1.2024636]@,\$[80.247469]@
\$[2.053277]@,\$[1.7094774]@,\$[1.1698453]@,\$[2.5650152]@,\$[172.78447]@

```

BT2022_qiv_22_alldata
$[1.4409571]@,$[2.0297535]@,$[2.277666]@,$[0.88815754]@,$[215.25073]@
$[1.2795449]@,$[1.1208713]@,$[2.0498916]@,$[1.2131501]@,$[73.725809]@
$[1.6364074]@,$[1.5080801]@,$[1.7414079]@,$[0.80922972]@,$[103.31323]@
$[2.9855855]@,$[1.2422573]@,$[1.3722815]@,$[3.3932368]@,$[218.79912]@
$[1.5516187]@,$[3.0175804]@,$[2.7416665]@,$[1.8984163]@,$[822.22857]@
$[2.7855219]@,$[1.3084094]@,$[2.2784173]@,$[1.1549967]@,$[417.19804]@

EE19B063
alpha = 0.079491538
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X4 X1 X3 X2 + beta_2 X2 X3 X1 X4 X3 + beta_3 X3 X2 X4 X3 X4
+ beta_4 X4 X1 X1 X1 X1
PARAMATER FOR POPULATION RANGE: beta_4
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@,$[-0.57791043]@
$[0.1299107]@,$[0.19050306]@,$[0.077568522]@,$[0.054552895]@,$[-0.96899662]@
$[0.27990863]@,$[0.38121229]@,$[0.15534993]@,$[0.15727299]@,$[-0.10990762]@
$[0.52778673]@,$[0.40215954]@,$[0.5229604]@,$[0.25040727]@,$[-1.4684771]@
$[0.31504193]@,$[0.29757813]@,$[0.24271391]@,$[0.49953748]@,$[-0.22344213]@
$[0.81743218]@,$[0.53417985]@,$[0.92214653]@,$[0.51434269]@,$[-1.4642634]@
$[0.94769605]@,$[0.90635994]@,$[0.48946618]@,$[0.85420356]@,$[-1.5147737]@
$[1.3558132]@,$[1.2645163]@,$[1.306503]@,$[0.47996453]@,$[2.8313462]@
$[1.5195873]@,$[0.62475282]@,$[1.0068904]@,$[0.90805391]@,$[2.8332475]@
$[0.77926066]@,$[0.47336664]@,$[1.2017768]@,$[0.77904929]@,$[1.0738754]@
$[1.0319363]@,$[0.53501917]@,$[0.60916111]@,$[1.6097971]@,$[0.1180533]@
$[0.66646698]@,$[0.96634512]@,$[2.0865778]@,$[2.0603539]@,$[44.252733]@
$[1.1678579]@,$[1.9382543]@,$[0.85605147]@,$[0.98055322]@,$[4.6379819]@
$[2.0262224]@,$[2.471587]@,$[1.9862304]@,$[2.5409875]@,$[238.01501]@
$[2.7552937]@,$[2.0493774]@,$[1.5753446]@,$[1.2128807]@,$[57.6221]@
$[2.6088079]@,$[1.8805564]@,$[2.6132547]@,$[2.0446789]@,$[280.19885]@
$[1.4126388]@,$[3.1203943]@,$[2.8936773]@,$[2.5880985]@,$[557.80809]@
$[2.7793997]@,$[2.3251816]@,$[2.6139911]@,$[1.2248338]@,$[190.43275]@
$[1.5441526]@,$[3.1108957]@,$[2.456349]@,$[1.2230966]@,$[147.13898]@
$[3.1972136]@,$[2.7201488]@,$[3.0937922]@,$[1.8575763]@,$[581.1636]@

```

```

EE19B065
alpha = 0.084375588
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X3 X1 X1 X1 + beta_2 X2 X4 X3 X2 X1 + beta_3 X3 X1 X1 X4 X4
+ beta_4 X4 X2 X2 X2 X1
PARAMATER FOR POPULATION RANGE: beta_4
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@,$[0.3270956]@
$[0.11151399]@,$[0.13768246]@,$[0.067634376]@,$[0.13236317]@,$[1.0404716]@
$[0.38628923]@,$[0.13483512]@,$[0.3657124]@,$[0.28197078]@,$[-1.7456914]@
$[0.58541726]@,$[0.54090002]@,$[0.51466045]@,$[0.16138133]@,$[1.0509398]@

```

BT2022_qiv_22_alldata

$\$[0.50239181]@, \$[0.75277961]@, \$[0.32450582]@, \$[0.79141906]@, \$[0.29537197]@$
 $\$[0.93413259]@, \$[0.54167204]@, \$[0.77703424]@, \$[0.95415567]@, \$[2.826381]@$
 $\$[1.1639804]@, \$[1.1172636]@, \$[1.047279]@, \$[0.74245834]@, \$[10.866225]@$
 $\$[0.54424337]@, \$[0.79349773]@, \$[0.82003345]@, \$[1.3269446]@, \$[1.969717]@$
 $\$[0.55711575]@, \$[0.68169996]@, \$[0.57902143]@, \$[0.8321748]@, \$[1.7161966]@$
 $\$[1.3180115]@, \$[1.0004617]@, \$[0.77964543]@, \$[1.6393263]@, \$[21.773623]@$
 $\$[1.2705121]@, \$[1.7978022]@, \$[1.0508496]@, \$[0.59903314]@, \$[23.045398]@$
 $\$[1.4110158]@, \$[1.8561568]@, \$[0.65031115]@, \$[0.57496495]@, \$[20.148781]@$
 $\$[1.019338]@, \$[1.174023]@, \$[0.78211526]@, \$[1.5265204]@, \$[16.986067]@$
 $\$[0.91199504]@, \$[1.4096513]@, \$[1.3766428]@, \$[0.68359426]@, \$[12.395024]@$
 $\$[1.816323]@, \$[1.6427019]@, \$[2.038538]@, \$[2.4543578]@, \$[250.99025]@$
 $\$[2.97041]@, \$[2.1626689]@, \$[0.92851073]@, \$[2.9277063]@, \$[582.17742]@$
 $\$[0.84162346]@, \$[2.2451472]@, \$[0.85106842]@, \$[1.2226955]@, \$[39.834503]@$
 $\$[1.3505048]@, \$[1.4609776]@, \$[1.5983273]@, \$[3.1243165]@, \$[149.13298]@$
 $\$[1.2659804]@, \$[2.5819062]@, \$[1.2243592]@, \$[1.88622]@, \$[166.3624]@$
 $\$[2.1237266]@, \$[2.1308807]@, \$[2.897585]@, \$[3.726294]@, \$[1016.7991]@$

EE19B066

alpha = 0.16192785

MLR FIT FUNCTION

$Y = \beta_0 + \beta_1 X_1 X_4 X_1 X_3 X_1 + \beta_2 X_2 X_3 X_4 X_1 X_3 + \beta_3 X_3 X_3 X_2 X_3 X_1$
 $+ \beta_4 X_4 X_4 X_1 X_2 X_4$

PARAMATER FOR POPULATION RANGE: beta_1

DATA COLUMNS X1 X2 X3 X4 Y

$\$[0]@, \$[0]@, \$[0]@, \$[0]@, \$[5.0863786]@$
 $\$[0.10238831]@, \$[0.15779825]@, \$[0.1295477]@, \$[0.12545552]@, \$[4.1387271]@$
 $\$[0.19140958]@, \$[0.15285829]@, \$[0.23860801]@, \$[0.14498167]@, \$[2.4596102]@$
 $\$[0.53205234]@, \$[0.42109765]@, \$[0.34375291]@, \$[0.23943447]@, \$[2.1135793]@$
 $\$[0.61797427]@, \$[0.73245038]@, \$[0.29613421]@, \$[0.60937805]@, \$[3.9742782]@$
 $\$[0.78517263]@, \$[0.49899952]@, \$[0.43214538]@, \$[0.51806871]@, \$[2.408572]@$
 $\$[0.67233332]@, \$[0.44765108]@, \$[0.40204486]@, \$[0.72894899]@, \$[1.4505086]@$
 $\$[0.94443491]@, \$[1.2320344]@, \$[1.1007514]@, \$[0.8539727]@, \$[9.765127]@$
 $\$[1.0429299]@, \$[1.3862292]@, \$[1.2322851]@, \$[0.83590056]@, \$[12.946254]@$
 $\$[1.3493166]@, \$[1.7736302]@, \$[1.3782985]@, \$[1.0713133]@, \$[30.813514]@$
 $\$[1.7087647]@, \$[1.3966713]@, \$[0.64094685]@, \$[0.82208691]@, \$[6.4568235]@$
 $\$[0.67056588]@, \$[1.0908901]@, \$[1.1759444]@, \$[0.96973399]@, \$[10.015336]@$
 $\$[1.8606225]@, \$[1.7561738]@, \$[0.99928418]@, \$[2.1454692]@, \$[29.363834]@$
 $\$[1.1369613]@, \$[2.5323494]@, \$[2.1799466]@, \$[1.5698914]@, \$[126.27154]@$
 $\$[1.8716845]@, \$[2.3571824]@, \$[1.955722]@, \$[0.9550505]@, \$[127.90615]@$
 $\$[1.5638995]@, \$[1.4734387]@, \$[1.1293908]@, \$[0.75915186]@, \$[18.850147]@$
 $\$[2.5820059]@, \$[2.7447182]@, \$[1.2149592]@, \$[2.9590576]@, \$[124.14695]@$
 $\$[1.5127518]@, \$[1.4664672]@, \$[3.2843459]@, \$[3.2150848]@, \$[375.35593]@$
 $\$[3.5606504]@, \$[2.6006889]@, \$[2.4554723]@, \$[2.5306493]@, \$[771.75451]@$
 $\$[1.3716858]@, \$[3.6006343]@, \$[3.2096727]@, \$[3.2536739]@, \$[760.09549]@$

EE19B068

BT2022_qiv_22_alldata

```

alpha = 0.072762268
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X3 X1 X4 X4 + beta_2 X2 X3 X3 X2 X3 + beta_3 X3 X2 X4 X2 X4
+ beta_4 X4 X3 X2 X3 X3
PARAMATER FOR POPULATION RANGE: beta_4
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@,$[-0.22910964]@
$[0.15854233]@,$[0.19797184]@,$[0.089872034]@,$[0.09349071]@,$[-0.85653513]@
$[0.10538742]@,$[0.30884824]@,$[0.21224282]@,$[0.15058605]@,$[-0.31547532]@
$[0.53302237]@,$[0.50981166]@,$[0.53603634]@,$[0.2977401]@,$[1.5904099]@
$[0.53342869]@,$[0.31140494]@,$[0.42413512]@,$[0.67478687]@,$[0.68405984]@
$[0.8815511]@,$[0.48113688]@,$[0.65573805]@,$[0.68312312]@,$[1.2698665]@
$[1.0505723]@,$[0.72461178]@,$[1.1998465]@,$[0.47238759]@,$[5.8863757]@
$[1.0463434]@,$[1.3744524]@,$[1.2834905]@,$[0.7022263]@,$[18.436155]@
$[1.5812249]@,$[1.3003546]@,$[1.1454508]@,$[1.1075491]@,$[25.675493]@
$[1.6548007]@,$[1.2876996]@,$[1.6579691]@,$[0.72471382]@,$[35.319668]@
$[1.2795992]@,$[1.3189476]@,$[1.8471313]@,$[1.7379318]@,$[94.73049]@
$[1.9220139]@,$[1.1585055]@,$[1.0706719]@,$[1.4332175]@,$[37.254799]@
$[0.68943744]@,$[1.9916463]@,$[2.2589519]@,$[1.7595425]@,$[240.42301]@
$[2.4141342]@,$[1.0627758]@,$[0.92772079]@,$[1.0856415]@,$[25.131648]@
$[1.3543961]@,$[1.4191223]@,$[1.7708451]@,$[1.9032578]@,$[108.9482]@
$[1.3629013]@,$[0.92481903]@,$[1.7124876]@,$[2.707647]@,$[117.74569]@
$[2.8144067]@,$[1.3311625]@,$[1.0374799]@,$[2.2007198]@,$[146.88207]@
$[2.1491735]@,$[2.4519347]@,$[1.9063796]@,$[1.3017488]@,$[223.85224]@
$[2.8159888]@,$[2.102871]@,$[1.87645]@,$[2.8069724]@,$[613.18588]@
$[1.9213528]@,$[1.6867788]@,$[2.4651021]@,$[3.5879143]@,$[757.44558]@

```

EE19B073

```

alpha = 0.17211058
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X3 X1 X3 X3 + beta_2 X2 X2 X1 X3 X3 + beta_3 X3 X4 X2 X1 X4
+ beta_4 X4 X1 X2 X3 X4
PARAMATER FOR POPULATION RANGE: beta_2
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@,$[-0.44072734]@
$[0.177503]@,$[0.076434763]@,$[0.10015892]@,$[0.090138039]@,$[-0.81103811]@
$[0.24839588]@,$[0.26547674]@,$[0.11399239]@,$[0.12627706]@,$[-0.47233638]@
$[0.22890482]@,$[0.57244473]@,$[0.20382324]@,$[0.44949622]@,$[1.5084874]@
$[0.48105624]@,$[0.3415783]@,$[0.29995924]@,$[0.79243787]@,$[2.1067904]@
$[0.86237942]@,$[0.55086144]@,$[0.6588602]@,$[0.32101399]@,$[2.6297004]@
$[1.0015366]@,$[1.0688252]@,$[0.76817384]@,$[0.63278613]@,$[4.8988949]@
$[0.99758336]@,$[1.0331584]@,$[1.3424542]@,$[0.81580051]@,$[16.637467]@
$[1.0279198]@,$[1.0332551]@,$[1.2187508]@,$[1.5299678]@,$[21.330776]@
$[0.55057358]@,$[0.79023128]@,$[0.99280573]@,$[1.2153246]@,$[5.0194929]@
$[1.8026025]@,$[0.64306662]@,$[0.83828391]@,$[1.5762525]@,$[12.211198]@
$[0.89652445]@,$[0.67220447]@,$[1.0263627]@,$[1.6701242]@,$[9.029426]@
$[1.5009156]@,$[1.6497502]@,$[2.2030208]@,$[1.6585033]@,$[177.72995]@

```

```

BT2022_qiv_22_alldata
$[1.9702574]@,$[2.1688435]@,$[0.88327236]@,$[2.5185681]@,$[112.91249]@
$[1.9915466]@,$[0.81235208]@,$[1.8428453]@,$[1.6949198]@,$[79.633455]@
$[1.5447841]@,$[2.999979]@,$[0.78131192]@,$[2.2075469]@,$[98.514973]@
$[2.1181088]@,$[2.3538413]@,$[2.757602]@,$[1.7397076]@,$[695.66795]@
$[2.6500749]@,$[1.5514906]@,$[2.952474]@,$[1.8380882]@,$[626.90457]@
$[2.5286175]@,$[1.0136254]@,$[2.0782457]@,$[0.94456128]@,$[142.00988]@
$[3.4940773]@,$[1.566381]@,$[2.2804465]@,$[3.0428792]@,$[752.53605]@

```

EE19B076

```

alpha = 0.10132404
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X1 X4 X1 X3 + beta_2 X2 X2 X3 X2 X2 + beta_3 X3 X2 X4 X1 X1
+ beta_4 X4 X4 X2 X2 X3
PARAMATER FOR POPULATION RANGE: beta_1
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@[3.9293139]@
$[0.12654851]@,$[0.11390173]@,$[0.089267276]@,$[0.063842917]@,$[4.244312]@
$[0.19077158]@,$[0.15686482]@,$[0.18491701]@,$[0.21027903]@,$[0.78119083]@
$[0.35397899]@,$[0.18845151]@,$[0.40030887]@,$[0.36403611]@,$[3.5018269]@
$[0.29413208]@,$[0.52460644]@,$[0.35452359]@,$[0.46587723]@,$[4.4223517]@
$[0.86999033]@,$[0.6747975]@,$[0.86547801]@,$[0.78889663]@,$[5.3448767]@
$[0.55334047]@,$[0.59712472]@,$[0.3677812]@,$[0.91553879]@,$[4.5585947]@
$[1.1052839]@,$[1.0511731]@,$[0.60753987]@,$[0.77508769]@,$[5.5857468]@
$[0.86400259]@,$[1.5993538]@,$[0.56625217]@,$[0.71089862]@,$[2.6231216]@
$[1.4882389]@,$[0.72887307]@,$[1.3732433]@,$[0.74448536]@,$[14.877532]@
$[1.8549682]@,$[0.96700109]@,$[1.3954562]@,$[1.9980349]@,$[67.423935]@
$[1.0685141]@,$[1.2864386]@,$[0.94196107]@,$[1.1728761]@,$[10.609387]@
$[1.2418048]@,$[1.0958094]@,$[1.808176]@,$[2.1976411]@,$[49.42065]@
$[0.82229986]@,$[2.1997644]@,$[1.2845712]@,$[2.2010287]@,$[41.524945]@
$[2.2246102]@,$[2.6023145]@,$[1.2776668]@,$[1.212562]@,$[84.105168]@
$[0.95069693]@,$[0.80771188]@,$[2.2639216]@,$[0.89139261]@,$[11.64261]@
$[1.1976636]@,$[2.6001004]@,$[1.5686171]@,$[2.3645511]@,$[96.431767]@
$[1.1344639]@,$[2.6805114]@,$[1.5450325]@,$[1.350576]@,$[16.4557]@
$[3.3197309]@,$[2.2002722]@,$[2.9170053]@,$[3.455136]@,$[1594.5623]@
$[2.7081805]@,$[2.1558693]@,$[2.3305121]@,$[2.5681105]@,$[579.4929]@

```

EE19B079

```

alpha = 0.051903862
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X1 X2 X4 X1 + beta_2 X2 X4 X2 X2 X1 + beta_3 X3 X2 X2 X1 X4
+ beta_4 X4 X2 X1 X1 X1
PARAMATER FOR POPULATION RANGE: beta_0
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@[2.5822693]@
$[0.13734365]@,$[0.090453135]@,$[0.1440175]@,$[0.13158603]@,$[0.98159081]@
$[0.2573825]@,$[0.36443199]@,$[0.27052116]@,$[0.30962904]@,$[3.085124]@

```

BT2022_qiv_22_alldata

\$[0.20822101]@,\$[0.49511329]@,\$[0.59141369]@,\$[0.358555874]@,\$[1.75444419]@
 \$[0.5408894]@,\$[0.43083128]@,\$[0.44791142]@,\$[0.57971846]@,\$[2.7382563]@
 \$[0.67195071]@,\$[0.81432597]@,\$[0.62785787]@,\$[0.50884371]@,\$[5.862918]@
 \$[1.0775958]@,\$[0.74059315]@,\$[0.3676267]@,\$[0.99526395]@,\$[18.266619]@
 \$[0.44256867]@,\$[0.56274241]@,\$[1.0009626]@,\$[0.87996366]@,\$[3.4052052]@
 \$[0.7752832]@,\$[0.69424718]@,\$[0.50988377]@,\$[0.63547638]@,\$[6.0850848]@
 \$[1.6566802]@,\$[1.5531185]@,\$[1.2752683]@,\$[1.459462]@,\$[200.76709]@
 \$[1.6720229]@,\$[0.75062858]@,\$[1.1203042]@,\$[1.951066]@,\$[108.73679]@
 \$[1.6936013]@,\$[2.0401204]@,\$[1.740988]@,\$[1.4408954]@,\$[333.1295]@
 \$[1.9770656]@,\$[2.2499462]@,\$[1.801304]@,\$[1.7233474]@,\$[651.85565]@
 \$[0.71036224]@,\$[1.9005725]@,\$[2.5105504]@,\$[0.92782561]@,\$[56.449614]@
 \$[1.2410211]@,\$[1.1110159]@,\$[1.0363611]@,\$[2.5349986]@,\$[105.73967]@
 \$[1.8703303]@,\$[2.0726149]@,\$[1.6299537]@,\$[0.75177197]@,\$[219.0416]@
 \$[1.3413762]@,\$[1.9763573]@,\$[2.5527453]@,\$[1.5475945]@,\$[252.70699]@
 \$[3.0006939]@,\$[2.2057482]@,\$[1.9901295]@,\$[2.7361056]@,\$[2801.0124]@
 \$[1.8615019]@,\$[0.97494481]@,\$[3.074478]@,\$[2.2762008]@,\$[274.42754]@
 \$[3.0349924]@,\$[1.1813704]@,\$[2.472185]@,\$[1.6508964]@,\$[847.12923]@

EE19B080

alpha = 0.06801902

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X1 X1 X4 X3 + beta_2 X2 X2 X4 X4 X1 + beta_3 X3 X4 X4 X4 X3
 + beta_4 X4 X3 X3 X3 X1
 PARAMATER FOR POPULATION RANGE: beta_1
 DATA COLUMNS X1 X2 X3 X4 Y
 \$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[1.466174]@
 \$[0.11438573]@,\$[0.080102525]@,\$[0.11666671]@,\$[0.19862706]@,\$[-1.8599803]@
 \$[0.10200114]@,\$[0.11686151]@,\$[0.17952877]@,\$[0.15554099]@,\$[1.5182934]@
 \$[0.59587786]@,\$[0.54602558]@,\$[0.36841068]@,\$[0.50885962]@,\$[0.76343209]@
 \$[0.75975821]@,\$[0.2107302]@,\$[0.71663852]@,\$[0.70710979]@,\$[1.5478771]@
 \$[0.47545298]@,\$[0.73561687]@,\$[0.36666138]@,\$[0.92740366]@,\$[2.8096132]@
 \$[0.62426017]@,\$[1.1880764]@,\$[0.93271932]@,\$[0.88864273]@,\$[7.9842332]@
 \$[0.3604354]@,\$[1.2444303]@,\$[1.2211369]@,\$[1.212297]@,\$[15.028047]@
 \$[0.5046205]@,\$[0.85020842]@,\$[0.69229977]@,\$[1.1151204]@,\$[5.4459357]@
 \$[1.5514619]@,\$[0.91663681]@,\$[0.7445029]@,\$[0.78499871]@,\$[19.469566]@
 \$[1.541505]@,\$[0.70176254]@,\$[1.6321045]@,\$[1.0853491]@,\$[83.352802]@
 \$[1.5874313]@,\$[1.7916627]@,\$[0.95569422]@,\$[1.5167132]@,\$[85.150658]@
 \$[1.968624]@,\$[1.4188558]@,\$[0.84913543]@,\$[1.6845956]@,\$[119.07717]@
 \$[1.1922723]@,\$[0.94381284]@,\$[0.96540139]@,\$[0.66158016]@,\$[13.060846]@
 \$[2.5910852]@,\$[2.1761269]@,\$[1.4265129]@,\$[2.3308972]@,\$[703.13807]@
 \$[1.869093]@,\$[2.6815095]@,\$[1.2590776]@,\$[0.94029323]@,\$[101.62318]@
 \$[2.5134146]@,\$[1.8802073]@,\$[1.5897019]@,\$[1.5499789]@,\$[403.98938]@
 \$[2.872583]@,\$[2.7437063]@,\$[2.1540032]@,\$[1.6407813]@,\$[948.91511]@
 \$[0.94280474]@,\$[1.258315]@,\$[1.8272047]@,\$[2.9968184]@,\$[405.19946]@
 \$[1.8537828]@,\$[2.9631661]@,\$[1.5488561]@,\$[2.3925203]@,\$[566.49176]@

BT2022_qiv_22_alldata

EE19B091
alpha = 0.092863199
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X1 X3 X1 X1 + beta_2 X2 X3 X2 X4 X3 + beta_3 X3 X4 X3 X1 X2
+ beta_4 X4 X3 X4 X3 X1
PARAMATER FOR POPULATION RANGE: beta_0
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[-1.7326284]@
\$[0.074573985]@,\$[0.073167407]@,\$[0.080291859]@,\$[0.11648026]@,\$[1.2379559]@
\$[0.15611504]@,\$[0.13030181]@,\$[0.24877006]@,\$[0.3592343]@,\$[-0.33639249]@
\$[0.20444143]@,\$[0.21063101]@,\$[0.20485851]@,\$[0.57526201]@,\$[1.3432742]@
\$[0.62721024]@,\$[0.60424364]@,\$[0.5414262]@,\$[0.46461326]@,\$[1.109392]@
\$[0.37900331]@,\$[0.62599446]@,\$[0.97705056]@,\$[0.46795943]@,\$[2.0840819]@
\$[0.39892938]@,\$[0.8521764]@,\$[0.81736393]@,\$[0.95775052]@,\$[1.1695179]@
\$[0.96216375]@,\$[0.92403652]@,\$[1.0985721]@,\$[0.82280324]@,\$[6.5538307]@
\$[1.0475764]@,\$[1.21183]@,\$[1.3863148]@,\$[0.63426608]@,\$[13.50876]@
\$[1.2177746]@,\$[1.5437581]@,\$[0.59999792]@,\$[0.62879189]@,\$[4.2917854]@
\$[1.6709753]@,\$[1.8276492]@,\$[1.1365568]@,\$[1.7293359]@,\$[66.242408]@
\$[0.95163438]@,\$[0.8709786]@,\$[0.98024171]@,\$[1.3010648]@,\$[10.323067]@
\$[1.2006631]@,\$[0.77583127]@,\$[0.61166949]@,\$[1.4388503]@,\$[3.3266346]@
\$[1.1644321]@,\$[0.88371258]@,\$[0.88055975]@,\$[1.333294]@,\$[10.171378]@
\$[1.2231141]@,\$[2.0519856]@,\$[2.1348378]@,\$[0.78222605]@,\$[98.128806]@
\$[0.82648537]@,\$[0.99447959]@,\$[2.4451857]@,\$[2.6327351]@,\$[160.44246]@
\$[2.0171079]@,\$[2.8953988]@,\$[2.0700161]@,\$[1.5438868]@,\$[395.5789]@
\$[2.8158203]@,\$[3.344549]@,\$[1.5423069]@,\$[3.2180774]@,\$[741.34703]@
\$[1.9418026]@,\$[2.8037109]@,\$[1.4984187]@,\$[3.4564793]@,\$[474.51926]@
\$[2.6052103]@,\$[2.8579842]@,\$[1.156446]@,\$[2.1658898]@,\$[228.11012]@

EE19B093
alpha = 0.17970987
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X3 X4 X4 X4 + beta_2 X2 X3 X2 X1 X2 + beta_3 X3 X1 X1 X2 X2
+ beta_4 X4 X3 X1 X2 X1
PARAMATER FOR POPULATION RANGE: beta_1
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[2.241325]@
\$[0.19363296]@,\$[0.1142978]@,\$[0.10530869]@,\$[0.087362897]@,\$[1.6274334]@
\$[0.25017795]@,\$[0.30521754]@,\$[0.31662344]@,\$[0.39547418]@,\$[1.7049681]@
\$[0.40415314]@,\$[0.3503875]@,\$[0.24483143]@,\$[0.28858278]@,\$[1.8114714]@
\$[0.77522407]@,\$[0.75221972]@,\$[0.59741049]@,\$[0.30603692]@,\$[4.0353057]@
\$[0.95901684]@,\$[0.47138483]@,\$[0.64274774]@,\$[0.30061112]@,\$[2.9915702]@
\$[0.49753715]@,\$[0.78871483]@,\$[1.1259052]@,\$[0.89453482]@,\$[6.3597793]@
\$[0.45899909]@,\$[1.1323092]@,\$[1.3433972]@,\$[0.93071828]@,\$[8.5501578]@
\$[0.72486657]@,\$[0.45939377]@,\$[0.56825789]@,\$[1.2400716]@,\$[7.0622206]@
\$[1.2159493]@,\$[1.3840998]@,\$[0.7373655]@,\$[1.6661528]@,\$[31.400996]@
\$[1.2295582]@,\$[0.72731258]@,\$[0.5462306]@,\$[1.0576327]@,\$[7.0470842]@
\$[1.2106377]@,\$[0.58549042]@,\$[2.1239232]@,\$[0.82557859]@,\$[17.298798]@

```

BT2022_qiv_22_alldata
$[0.6022518]@,$[1.8776314]@,$[1.671166]@,$[1.1693747]@,$[25.685425]@
$[1.7491215]@,$[2.3141]@,$[1.8967431]@,$[2.0348469]@,$[339.46741]@
$[1.5248113]@,$[2.0469294]@,$[2.4029196]@,$[1.6552955]@,$[239.73595]@
$[2.9502724]@,$[1.0797187]@,$[2.216277]@,$[1.2756582]@,$[240.37554]@
$[2.1633112]@,$[1.9419682]@,$[2.0535644]@,$[0.87911673]@,$[250.72503]@
$[0.99839251]@,$[2.7743559]@,$[2.6772839]@,$[0.8842566]@,$[160.02365]@
$[1.552829]@,$[2.1620587]@,$[2.8704788]@,$[2.6364676]@,$[528.95401]@
$[2.7646115]@,$[2.2932759]@,$[1.1157413]@,$[2.7360339]@,$[583.13776]@

```

EE19B095

alpha = 0.13509055

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X4 X3 X2 X2 + beta_2 X2 X3 X1 X2 X4 + beta_3 X3 X2 X2 X1 X3
+ beta_4 X4 X2 X2 X4 X3

PARAMATER FOR POPULATION RANGE: beta_4

DATA COLUMNS X1 X2 X3 X4 Y

```

$[0]@,$[0]@,$[0]@,$[0]@,$[5.0433372]@
$[0.073112096]@,$[0.10730584]@,$[0.051319939]@,$[0.18993745]@,$[3.4775917]@
$[0.37152269]@,$[0.19277911]@,$[0.2635182]@,$[0.2150987]@,$[4.4136805]@
$[0.21877204]@,$[0.39907462]@,$[0.52204916]@,$[0.20480876]@,$[5.4912527]@
$[0.65620126]@,$[0.57493366]@,$[0.51093744]@,$[0.40711336]@,$[4.9700107]@
$[0.50883845]@,$[0.89500177]@,$[0.60474585]@,$[0.39483275]@,$[5.1948444]@
$[0.59985583]@,$[1.1182608]@,$[0.31506912]@,$[0.54113071]@,$[5.9142464]@
$[1.164395]@,$[1.3485876]@,$[1.3693784]@,$[0.67940541]@,$[16.509344]@
$[0.7658813]@,$[0.74540599]@,$[1.4358657]@,$[0.71267924]@,$[8.0052983]@
$[0.86795403]@,$[1.2627598]@,$[1.2605023]@,$[0.63458389]@,$[9.4392919]@
$[0.98509879]@,$[1.8634134]@,$[1.8229614]@,$[1.8142055]@,$[45.617959]@
$[1.6861643]@,$[2.1574812]@,$[0.6254507]@,$[0.67318782]@,$[17.406224]@
$[0.77252048]@,$[1.7787867]@,$[0.86151013]@,$[1.4255827]@,$[13.020951]@
$[2.4496979]@,$[1.3037413]@,$[2.089646]@,$[2.5205623]@,$[81.717896]@
$[2.4600826]@,$[1.6294298]@,$[2.7799239]@,$[1.86762]@,$[165.65807]@
$[1.8288329]@,$[2.0519185]@,$[0.83015618]@,$[1.9263508]@,$[38.621436]@
$[1.8412898]@,$[1.9811725]@,$[2.3425514]@,$[2.4369502]@,$[157.48777]@
$[1.2443365]@,$[2.4662953]@,$[1.113067]@,$[3.3956004]@,$[79.035415]@
$[1.6711321]@,$[2.4252016]@,$[1.2199158]@,$[3.0285812]@,$[101.16437]@
$[1.8258243]@,$[1.9328874]@,$[1.7247107]@,$[3.3560692]@,$[116.08661]@

```

EE19B113

alpha = 0.12542262

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X1 X2 X4 X4 + beta_2 X2 X3 X3 X3 X1 + beta_3 X3 X4 X3 X4 X2
+ beta_4 X4 X3 X4 X2 X4

PARAMATER FOR POPULATION RANGE: beta_2

DATA COLUMNS X1 X2 X3 X4 Y

```

$[0]@,$[0]@,$[0]@,$[0]@,$[3.1335527]@
$[0.14345543]@,$[0.07433262]@,$[0.099741943]@,$[0.054388805]@,$[3.4187329]@

```

```

BT2022_qiv_22_alldata
$[0.20416998]@,$[0.32833241]@,$[0.29806792]@,$[0.26927375]@,$[3.1374312]@
$[0.34336159]@,$[0.5663067]@,$[0.26552225]@,$[0.42506694]@,$[3.2758329]@
$[0.35076444]@,$[0.21091224]@,$[0.79997877]@,$[0.42871105]@,$[2.2629015]@
$[0.76043286]@,$[0.54624013]@,$[0.76485104]@,$[0.77666823]@,$[4.269499]@
$[0.81589218]@,$[0.36427534]@,$[0.82765992]@,$[0.79950573]@,$[3.7196505]@
$[1.1126489]@,$[1.3058715]@,$[0.35813858]@,$[0.67313043]@,$[5.1650684]@
$[1.1179455]@,$[0.56863675]@,$[1.2832328]@,$[1.3242436]@,$[16.555853]@
$[0.62258118]@,$[1.3004709]@,$[0.58200587]@,$[1.6608114]@,$[16.561724]@
$[0.76996878]@,$[0.8195038]@,$[1.9343046]@,$[0.99251752]@,$[18.590181]@
$[1.5151165]@,$[1.2604682]@,$[0.95973263]@,$[1.9105448]@,$[53.834054]@
$[1.0889545]@,$[1.5067666]@,$[1.4607826]@,$[0.80906274]@,$[19.992777]@
$[1.4977596]@,$[0.65258218]@,$[2.4813133]@,$[1.9001854]@,$[83.229781]@
$[1.357602]@,$[1.5623026]@,$[0.95409924]@,$[0.90213253]@,$[14.188267]@
$[2.9961952]@,$[2.7457898]@,$[1.1142521]@,$[1.9529074]@,$[256.63176]@
$[1.3672259]@,$[2.0070214]@,$[2.7737087]@,$[2.7504385]@,$[571.6999]@
$[0.97730754]@,$[2.1050224]@,$[2.6368997]@,$[1.300234]@,$[134.20512]@
$[3.3661279]@,$[1.3627553]@,$[2.9312361]@,$[1.6162445]@,$[392.43529]@
$[2.9757553]@,$[1.7630332]@,$[1.6261968]@,$[3.3981986]@,$[733.69367]@

```

EE19B115

alpha = 0.10125336

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X4 X1 X1 X4 + beta_2 X2 X1 X4 X1 X4 + beta_3 X3 X4 X4 X3 X3
+ beta_4 X4 X2 X3 X1 X2

PARAMATER FOR POPULATION RANGE: beta_0

DATA COLUMNS X1 X2 X3 X4 Y

```

$[0]@,$[0]@,$[0]@,$[0]@,$[3.2325861]@
$[0.14034888]@,$[0.17788014]@,$[0.1974055]@,$[0.15214718]@,$[2.0829743]@
$[0.17766836]@,$[0.13855481]@,$[0.1430487]@,$[0.30006659]@,$[3.0978271]@
$[0.52139568]@,$[0.37904786]@,$[0.15561541]@,$[0.25794249]@,$[0.69042384]@
$[0.72647193]@,$[0.7045264]@,$[0.7027667]@,$[0.61064976]@,$[2.9768456]@
$[0.66439202]@,$[0.99089849]@,$[0.71183358]@,$[0.49805863]@,$[4.7785826]@
$[0.74887607]@,$[1.181187]@,$[1.1879674]@,$[0.72201843]@,$[11.185762]@
$[1.1545078]@,$[1.0333743]@,$[1.0177593]@,$[0.57624615]@,$[7.7822285]@
$[1.4615199]@,$[1.4933632]@,$[0.49515666]@,$[0.5086923]@,$[8.3115275]@
$[1.6574001]@,$[0.77188955]@,$[0.71363782]@,$[1.3197163]@,$[32.189512]@
$[1.052297]@,$[0.99543635]@,$[1.79092]@,$[0.57303932]@,$[18.758115]@
$[0.76343086]@,$[0.85710553]@,$[1.3669784]@,$[1.959041]@,$[64.858338]@
$[0.66962352]@,$[2.1909207]@,$[0.76723522]@,$[0.68663318]@,$[12.061928]@
$[0.77978555]@,$[0.93166467]@,$[0.82348103]@,$[2.064884]@,$[26.151252]@
$[1.2474367]@,$[1.3066954]@,$[1.8793462]@,$[2.242373]@,$[248.43563]@
$[1.2550946]@,$[1.2226076]@,$[1.8334212]@,$[1.4609825]@,$[107.82004]@
$[1.2399534]@,$[2.1454059]@,$[1.3553553]@,$[2.8326056]@,$[278.04836]@
$[1.9941608]@,$[3.2741947]@,$[2.9547295]@,$[1.1413832]@,$[579.60622]@
$[0.93838916]@,$[3.1927331]@,$[0.92787752]@,$[3.3804892]@,$[260.193]@
$[3.0238729]@,$[1.3595872]@,$[1.6775178]@,$[1.9128006]@,$[451.89121]@

```

BT2022_qiv_22_alldata

EE19B119
alpha = 0.058997323
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X4 X3 X2 X2 + beta_2 X2 X1 X4 X1 X3 + beta_3 X3 X4 X3 X1 X3
+ beta_4 X4 X1 X3 X1 X2
PARAMATER FOR POPULATION RANGE: beta_4
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@[1.4947725]@
\$[0.12462191]@,\$[0.13551387]@,\$[0.066941489]@,\$[0.13357076]@,\$[0.076806436]@
\$[0.37499035]@,\$[0.3972508]@,\$[0.29410279]@,\$[0.13068465]@,\$[0.30663051]@
\$[0.48625003]@,\$[0.45065947]@,\$[0.53239069]@,\$[0.27850733]@,\$[0.66277599]@
\$[0.75798624]@,\$[0.55701577]@,\$[0.64035844]@,\$[0.6387332]@,\$[1.0779434]@
\$[0.81259766]@,\$[0.71690487]@,\$[0.66223742]@,\$[0.42326749]@,\$[1.6298227]@
\$[0.81500984]@,\$[0.90934087]@,\$[0.90902757]@,\$[0.32092081]@,\$[2.3879441]@
\$[1.1428583]@,\$[0.5455611]@,\$[0.39286046]@,\$[0.57887848]@,\$[1.2115405]@
\$[1.350729]@,\$[1.2889423]@,\$[0.59609346]@,\$[1.0783649]@,\$[5.3264917]@
\$[1.0417368]@,\$[1.4425481]@,\$[1.6211994]@,\$[1.5715264]@,\$[25.411316]@
\$[0.51892231]@,\$[0.9062806]@,\$[1.3700756]@,\$[1.9190671]@,\$[6.2143087]@
\$[1.9218964]@,\$[1.3705153]@,\$[1.480603]@,\$[2.1708825]@,\$[59.801706]@
\$[0.93396473]@,\$[1.586826]@,\$[1.844959]@,\$[1.0551327]@,\$[23.161652]@
\$[2.438015]@,\$[1.9489043]@,\$[0.80065937]@,\$[2.3665275]@,\$[62.603396]@
\$[0.7747085]@,\$[2.5978387]@,\$[1.0952241]@,\$[2.1558114]@,\$[32.686836]@
\$[1.68958]@,\$[2.8405705]@,\$[2.1947146]@,\$[1.4648916]@,\$[148.86808]@
\$[2.5856276]@,\$[1.771205]@,\$[1.2256335]@,\$[0.8286041]@,\$[32.800488]@
\$[1.4596248]@,\$[3.2855225]@,\$[2.7413157]@,\$[2.569938]@,\$[377.65495]@
\$[1.8020762]@,\$[1.8447685]@,\$[1.8579961]@,\$[2.3931165]@,\$[118.71421]@
\$[1.5554518]@,\$[1.9889896]@,\$[1.6455978]@,\$[1.0701175]@,\$[40.882692]@

EE19B120
alpha = 0.13204949
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X3 X3 X1 X2 + beta_2 X2 X4 X2 X4 X2 + beta_3 X3 X3 X4 X4 X3
+ beta_4 X4 X1 X1 X3 X3
PARAMATER FOR POPULATION RANGE: beta_0
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@[1.9232298]@
\$[0.058681559]@,\$[0.08878596]@,\$[0.073514783]@,\$[0.06396411]@,\$[1.5895443]@
\$[0.30219611]@,\$[0.17326202]@,\$[0.31941382]@,\$[0.26016763]@,\$[1.4802814]@
\$[0.16831636]@,\$[0.21388814]@,\$[0.22561694]@,\$[0.56988652]@,\$[2.0248202]@
\$[0.67621576]@,\$[0.59208209]@,\$[0.57396221]@,\$[0.64047588]@,\$[2.1556452]@
\$[0.74666195]@,\$[0.52730748]@,\$[0.36238968]@,\$[0.33795894]@,\$[2.4923721]@
\$[1.1273941]@,\$[0.44707155]@,\$[0.72323984]@,\$[0.33951428]@,\$[2.3029786]@
\$[0.74708113]@,\$[1.1253321]@,\$[0.39502622]@,\$[0.61890194]@,\$[1.4407983]@
\$[0.80872709]@,\$[0.72460765]@,\$[1.4691483]@,\$[0.67711585]@,\$[5.6911867]@
\$[0.97896261]@,\$[1.5367833]@,\$[0.66774925]@,\$[0.57039307]@,\$[7.9946238]@
\$[0.73982201]@,\$[1.9340664]@,\$[0.79669114]@,\$[1.6145995]@,\$[87.342519]@

```

BT2022_qiv_22_alldata
$[0.71737782]@,$[0.97824574]@,$[1.237236]@,$[1.9535751]@,$[20.135658]@
$[1.4866586]@,$[1.0037343]@,$[0.80471673]@,$[2.2054189]@,$[32.858223]@
$[1.2901153]@,$[1.5676614]@,$[0.97785784]@,$[1.4172177]@,$[46.338427]@
$[1.6197269]@,$[2.0060848]@,$[2.6684119]@,$[1.2617809]@,$[204.94627]@
$[1.9955412]@,$[2.0494614]@,$[1.0385054]@,$[1.4229081]@,$[114.71252]@
$[1.102683]@,$[2.9927519]@,$[1.5961078]@,$[2.3915341]@,$[717.1329]@
$[3.0920657]@,$[1.8722389]@,$[2.079902]@,$[2.998823]@,$[682.86523]@
$[2.9181538]@,$[3.3353533]@,$[2.2300491]@,$[2.4015969]@,$[1532.7054]@
$[2.4692684]@,$[3.1703099]@,$[2.4299261]@,$[1.0515053]@,$[564.58358]@
```

EE19B122

alpha = 0.056185105

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X1 X1 X4 X1 + beta_2 X2 X1 X3 X1 X3 + beta_3 X3 X2 X2 X2 X4
+ beta_4 X4 X4 X3 X2 X3

PARAMATER FOR POPULATION RANGE: beta_0

DATA COLUMNS X1 X2 X3 X4 Y

```

$[0]@,$[0]@,$[0]@,$[0]@,$[2.1332611]@
$[0.082736587]@,$[0.063877792]@,$[0.11695424]@,$[0.15171693]@,$[0.84919756]@
$[0.37498275]@,$[0.25828561]@,$[0.27484554]@,$[0.20199728]@,$[1.5552871]@
$[0.2843586]@,$[0.31705712]@,$[0.50018682]@,$[0.41729384]@,$[0.15739729]@
$[0.49518642]@,$[0.32493693]@,$[0.69799153]@,$[0.7975697]@,$[0.88553794]@
$[0.52085266]@,$[0.92196384]@,$[0.96838285]@,$[0.89407886]@,$[5.0903725]@
$[0.31130245]@,$[0.34387748]@,$[0.38580691]@,$[0.39413098]@,$[-1.4072336]@
$[0.62950618]@,$[1.1732472]@,$[0.81158077]@,$[0.51468986]@,$[1.2983543]@
$[1.4289445]@,$[0.4627014]@,$[1.3341611]@,$[1.4182971]@,$[30.698539]@
$[0.99668498]@,$[1.7375035]@,$[1.6289127]@,$[0.53376874]@,$[24.977836]@
$[1.8256829]@,$[1.0257033]@,$[1.600835]@,$[1.1154764]@,$[81.947051]@
$[0.6746732]@,$[1.1647206]@,$[0.69807119]@,$[1.4496444]@,$[8.7585512]@
$[1.7108614]@,$[1.5772571]@,$[1.8197687]@,$[2.2303149]@,$[268.46838]@
$[2.5683914]@,$[1.4453445]@,$[1.89175]@,$[1.545015]@,$[354.04546]@
$[1.5597821]@,$[1.6386731]@,$[1.3868616]@,$[0.78978752]@,$[50.703257]@
$[1.2458363]@,$[2.0037162]@,$[1.4354074]@,$[2.8008371]@,$[239.1729]@
$[2.9715028]@,$[1.1057937]@,$[3.0761456]@,$[2.4330319]@,$[1181.46]@
$[0.92805988]@,$[1.1498921]@,$[2.9438419]@,$[2.6542469]@,$[514.53653]@
$[3.4189014]@,$[1.6365035]@,$[1.3493012]@,$[2.0393225]@,$[769.56049]@
$[3.4266479]@,$[1.9481599]@,$[2.281886]@,$[1.3968522]@,$[1000.5636]@
```

EE19B125

alpha = 0.094282335

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X2 X3 X4 X4 + beta_2 X2 X2 X2 X2 X2 + beta_3 X3 X1 X1 X1 X2
+ beta_4 X4 X2 X1 X3 X1

PARAMATER FOR POPULATION RANGE: beta_4

DATA COLUMNS X1 X2 X3 X4 Y

```

$[0]@,$[0]@,$[0]@,$[0]@,$[3.5659807]@
```

```

BT2022_qiv_22_alldata
$[0.061567644]@,$[0.11963218]@,$[0.075018861]@,$[0.057173398]@,$[2.5574308]@
$[0.34371719]@,$[0.3319024]@,$[0.13791977]@,$[0.33529933]@,$[1.904139]@
$[0.22909363]@,$[0.48849633]@,$[0.49764934]@,$[0.37197195]@,$[4.5538712]@
$[0.63354191]@,$[0.34375214]@,$[0.44984375]@,$[0.30910754]@,$[2.1711718]@
$[0.28048531]@,$[0.53091784]@,$[0.33716196]@,$[0.98200587]@,$[2.8165091]@
$[0.97997303]@,$[0.53617915]@,$[0.63808084]@,$[0.34607145]@,$[4.1779092]@
$[1.2126477]@,$[1.293556]@,$[0.39596618]@,$[1.0943981]@,$[15.379646]@
$[1.2873686]@,$[1.1032622]@,$[1.431867]@,$[0.91551772]@,$[28.182817]@
$[1.587443]@,$[0.62432011]@,$[0.68111649]@,$[0.62012749]@,$[10.919216]@
$[1.2023313]@,$[0.95888373]@,$[1.2831245]@,$[1.0447105]@,$[21.091197]@
$[0.86696634]@,$[0.97433615]@,$[1.9301266]@,$[1.6973142]@,$[21.088896]@
$[2.180861]@,$[0.77452615]@,$[2.3403742]@,$[0.82703364]@,$[107.15418]@
$[2.0113771]@,$[2.1044796]@,$[1.9327434]@,$[1.0879145]@,$[279.43094]@
$[2.1223503]@,$[2.5333563]@,$[1.8305778]@,$[1.7988559]@,$[516.05432]@
$[0.90919635]@,$[2.2532998]@,$[1.3487176]@,$[1.3266031]@,$[128.79634]@
$[1.9823613]@,$[2.7102571]@,$[2.11684]@,$[1.8099475]@,$[604.09895]@
$[2.2195996]@,$[2.9262891]@,$[3.1681992]@,$[2.4016328]@,$[1239.3837]@
$[1.6662893]@,$[2.9203595]@,$[2.5824031]@,$[3.1172682]@,$[802.72004]@
$[3.1358293]@,$[2.3485113]@,$[1.6056056]@,$[2.7751577]@,$[1010.0666]@

```

EE19B126

alpha = 0.070024709

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X1 X2 X3 X1 + beta_2 X2 X1 X1 X1 X3 + beta_3 X3 X3 X2 X3 X2
+ beta_4 X4 X1 X4 X3 X4

PARAMATER FOR POPULATION RANGE: beta_4

DATA COLUMNS X1 X2 X3 X4 Y

```

$[0]@,$[0]@,$[0]@,$[0]@,$[-1.7757235]@
$[0.052069437]@,$[0.072266317]@,$[0.18134546]@,$[0.068768447]@,$[-1.4838366]@
$[0.14075973]@,$[0.12463983]@,$[0.24778638]@,$[0.25657287]@,$[-0.89168061]@
$[0.33166576]@,$[0.49399484]@,$[0.58978655]@,$[0.19130132]@,$[-1.6307554]@
$[0.63039557]@,$[0.38146941]@,$[0.76427553]@,$[0.52569143]@,$[-0.24746591]@
$[0.61377179]@,$[0.74735901]@,$[0.86758971]@,$[0.7350527]@,$[1.2851402]@
$[0.374061]@,$[1.0259107]@,$[0.53710818]@,$[0.86800713]@,$[-1.5198477]@
$[1.196757]@,$[0.6828044]@,$[0.48538536]@,$[1.0307566]@,$[3.0309564]@
$[1.3376992]@,$[0.86913832]@,$[0.99951119]@,$[1.4318188]@,$[16.108862]@
$[1.0892837]@,$[0.6611253]@,$[1.4696939]@,$[1.7574144]@,$[26.193062]@
$[0.85195359]@,$[1.712788]@,$[1.4706507]@,$[0.56957159]@,$[8.8823658]@
$[0.9338857]@,$[0.59090594]@,$[1.5271539]@,$[1.7694337]@,$[20.694986]@
$[1.0896577]@,$[0.63987295]@,$[0.82707757]@,$[2.1244318]@,$[24.642001]@
$[2.0066302]@,$[1.0137016]@,$[1.5885017]@,$[1.9475336]@,$[99.505858]@
$[0.95583535]@,$[1.2130361]@,$[1.8834383]@,$[0.98601399]@,$[13.871899]@
$[1.084377]@,$[2.4151683]@,$[2.3885321]@,$[2.6511503]@,$[189.99349]@
$[3.1124659]@,$[2.1637445]@,$[2.2032846]@,$[1.6150419]@,$[517.76542]@
$[0.92818453]@,$[1.3760506]@,$[2.6752185]@,$[1.214275]@,$[38.280976]@
$[2.7054135]@,$[1.3365568]@,$[2.1046827]@,$[1.2657265]@,$[199.84994]@
$[2.7702733]@,$[1.4689038]@,$[1.3876059]@,$[2.4960839]@,$[285.51849]@

```

BT2022_qiv_22_alldata

EP18B003

alpha = 0.060795019

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X4 X3 X1 X4 + beta_2 X2 X3 X3 X4 X2 + beta_3 X3 X2 X4 X3 X2 + beta_4 X4 X3 X1 X2 X3
PARAMATER FOR POPULATION RANGE: beta_0
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[3.7989955]@
\$[0.14554912]@,\$[0.093906839]@,\$[0.15826956]@,\$[0.18651917]@,\$[3.6444744]@
\$[0.23580912]@,\$[0.37170955]@,\$[0.14231336]@,\$[0.1705068]@,\$[3.3299033]@
\$[0.49369161]@,\$[0.55006521]@,\$[0.57079187]@,\$[0.43134068]@,\$[2.7555969]@
\$[0.22068037]@,\$[0.49419641]@,\$[0.62580112]@,\$[0.53241709]@,\$[2.0169074]@
\$[0.25368931]@,\$[0.30837534]@,\$[0.4910075]@,\$[0.70755092]@,\$[2.992627]@
\$[0.67078393]@,\$[0.52435355]@,\$[0.83343649]@,\$[0.9296203]@,\$[3.391227]@
\$[1.298151]@,\$[0.64204529]@,\$[1.005131]@,\$[0.62439641]@,\$[3.5215898]@
\$[1.4669542]@,\$[0.89789272]@,\$[0.53168734]@,\$[0.85014857]@,\$[1.9461311]@
\$[1.1071516]@,\$[0.49879135]@,\$[1.6042572]@,\$[0.48884681]@,\$[2.1581969]@
\$[1.8691762]@,\$[0.55321994]@,\$[1.9093083]@,\$[0.68443024]@,\$[-0.95271234]@
\$[0.97403916]@,\$[1.3563911]@,\$[1.1822524]@,\$[1.1512906]@,\$[10.153466]@
\$[1.6241995]@,\$[0.62055699]@,\$[1.5574644]@,\$[0.86968967]@,\$[0.84185708]@
\$[1.9927144]@,\$[1.6476463]@,\$[2.4506154]@,\$[2.1126157]@,\$[28.161545]@
\$[2.5319507]@,\$[2.7019285]@,\$[1.2487823]@,\$[1.5867181]@,\$[27.272914]@
\$[2.463382]@,\$[1.4036716]@,\$[2.8879261]@,\$[1.4716471]@,\$[-7.6947443]@
\$[3.0143335]@,\$[0.83672417]@,\$[2.3569052]@,\$[1.6719999]@,\$[-48.39916]@
\$[2.3267804]@,\$[2.6911469]@,\$[3.3118538]@,\$[2.1684569]@,\$[311.13034]@
\$[2.6955338]@,\$[2.3948093]@,\$[1.2255179]@,\$[1.7550404]@,\$[12.001615]@
\$[1.9441508]@,\$[3.3681057]@,\$[3.7365565]@,\$[1.5323856]@,\$[614.44132]@

EP18B013

alpha = 0.14589153

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X3 X3 X1 X1 + beta_2 X2 X2 X1 X1 X4 + beta_3 X3 X2 X2 X3 X4 + beta_4 X4 X2 X3 X2 X3
PARAMATER FOR POPULATION RANGE: beta_3
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[0.61635014]@
\$[0.05523951]@,\$[0.18095551]@,\$[0.17055013]@,\$[0.10482114]@,\$[1.7105549]@
\$[0.38018973]@,\$[0.11174503]@,\$[0.27142042]@,\$[0.32551677]@,\$[0.39291662]@
\$[0.3804525]@,\$[0.59718491]@,\$[0.17272169]@,\$[0.41869177]@,\$[0.25840659]@
\$[0.48998688]@,\$[0.52910178]@,\$[0.51260247]@,\$[0.37444355]@,\$[1.3956885]@
\$[0.5097674]@,\$[0.30273133]@,\$[0.73490447]@,\$[0.70204602]@,\$[1.0404473]@
\$[0.82942729]@,\$[1.0721509]@,\$[0.77122794]@,\$[0.31023684]@,\$[3.2272229]@
\$[1.0499755]@,\$[0.44739006]@,\$[0.50064643]@,\$[0.78807746]@,\$[1.6894119]@
\$[0.76773979]@,\$[0.48292426]@,\$[1.0719302]@,\$[1.4565716]@,\$[3.8477652]@
\$[1.3249081]@,\$[0.99739835]@,\$[1.6585339]@,\$[1.5475298]@,\$[30.824979]@

BT2022_qiv_22_alldata

\$[1.2402458]@,\$[1.4404921]@,\$[0.55992778]@,\$[0.68086079]@,\$[10.081431]@
 \$[0.6926651]@,\$[1.9609351]@,\$[1.8868313]@,\$[0.83019656]@,\$[47.479295]@
 \$[1.8951837]@,\$[0.85499223]@,\$[1.6967021]@,\$[1.9982792]@,\$[45.690314]@
 \$[0.715712]@,\$[2.2791333]@,\$[0.9654429]@,\$[1.1443701]@,\$[30.131436]@
 \$[1.3777013]@,\$[1.597873]@,\$[0.71711533]@,\$[2.4572231]@,\$[49.926152]@
 \$[2.1016861]@,\$[2.3036067]@,\$[2.9654172]@,\$[1.746723]@,\$[486.67098]@
 \$[0.82017107]@,\$[2.8749523]@,\$[0.8270959]@,\$[2.1594647]@,\$[80.657999]@
 \$[1.2603593]@,\$[3.1696709]@,\$[3.3864182]@,\$[1.0875095]@,\$[531.98144]@
 \$[1.2558881]@,\$[2.3784658]@,\$[1.571924]@,\$[2.6781694]@,\$[214.11951]@
 \$[1.1307606]@,\$[1.7622167]@,\$[3.0083797]@,\$[2.7495202]@,\$[329.7502]@

EP18B015

alpha = 0.13766249

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X3 X1 X1 X4 + beta_2 X2 X1 X2 X2 X1 + beta_3 X3 X4 X2 X3 X1
 + beta_4 X4 X1 X1 X1 X4

PARAMATER FOR POPULATION RANGE: beta_4

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[1.4014726]@
 \$[0.11572496]@,\$[0.069308308]@,\$[0.1982324]@,\$[0.096927242]@,\$[1.553429]@
 \$[0.35183711]@,\$[0.10429349]@,\$[0.34500942]@,\$[0.16460281]@,\$[2.1615824]@
 \$[0.38887797]@,\$[0.55725434]@,\$[0.36610457]@,\$[0.58337229]@,\$[0.34356026]@
 \$[0.7896439]@,\$[0.40943495]@,\$[0.78428496]@,\$[0.55963849]@,\$[2.7699803]@
 \$[0.56776158]@,\$[0.56372611]@,\$[0.53454049]@,\$[0.31911964]@,\$[1.2400922]@
 \$[0.8595694]@,\$[0.73607241]@,\$[1.1868049]@,\$[0.39746192]@,\$[3.2666785]@
 \$[1.0711397]@,\$[0.75196527]@,\$[0.72299981]@,\$[0.40342754]@,\$[3.1029898]@
 \$[0.69446198]@,\$[1.5881456]@,\$[0.88696907]@,\$[0.71867274]@,\$[9.0540476]@
 \$[1.1363113]@,\$[0.63373857]@,\$[1.7811348]@,\$[1.3166736]@,\$[23.528893]@
 \$[0.51817462]@,\$[1.9483397]@,\$[1.7101694]@,\$[0.52117549]@,\$[7.6566403]@
 \$[0.79001306]@,\$[1.1371875]@,\$[1.4598455]@,\$[1.8433396]@,\$[16.021974]@
 \$[2.3857624]@,\$[1.0789412]@,\$[2.0644647]@,\$[1.2200329]@,\$[216.40779]@
 \$[1.3156088]@,\$[1.6688685]@,\$[1.0407035]@,\$[2.155815]@,\$[84.838516]@
 \$[2.6565021]@,\$[0.9839499]@,\$[1.445807]@,\$[0.75654989]@,\$[129.85083]@
 \$[1.393086]@,\$[2.5012436]@,\$[1.9084685]@,\$[0.99082038]@,\$[117.08175]@
 \$[1.3502959]@,\$[2.3527899]@,\$[3.1591944]@,\$[1.5728039]@,\$[149.43867]@
 \$[3.0329647]@,\$[2.5913275]@,\$[3.0821285]@,\$[3.0665259]@,\$[2392.1611]@
 \$[3.5326963]@,\$[1.4201171]@,\$[2.3925172]@,\$[1.7924346]@,\$[1282.2571]@
 \$[2.0225482]@,\$[1.8479933]@,\$[1.8840847]@,\$[2.0063015]@,\$[312.07783]@

EP18B016

alpha = 0.13831697

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X4 X1 X3 X1 + beta_2 X2 X2 X4 X2 X4 + beta_3 X3 X4 X3 X1 X3
 + beta_4 X4 X1 X2 X2 X3

PARAMATER FOR POPULATION RANGE: beta_0

DATA COLUMNS X1 X2 X3 X4 Y

```

BT2022_qiv_22_alldata
$[0]@,$[0]@,$[0]@,$[0]@,$[1.1421839]@
$[0.17526613]@,$[0.19391796]@,$[0.057322635]@,$[0.12133345]@,$[2.5618516]@
$[0.20097806]@,$[0.16383947]@,$[0.18175582]@,$[0.23984532]@,$[0.84470041]@
$[0.36107198]@,$[0.39254877]@,$[0.38309715]@,$[0.28488938]@,$[0.38694893]@
$[0.33096717]@,$[0.54351956]@,$[0.42581]@,$[0.55447711]@,$[-0.64701634]@
$[0.41986997]@,$[0.28741553]@,$[0.70173212]@,$[0.27669046]@,$[0.83812184]@
$[0.33815501]@,$[0.96158694]@,$[0.76965148]@,$[0.49971804]@,$[2.0962412]@
$[1.216375]@,$[0.79876934]@,$[0.35826202]@,$[0.86664177]@,$[0.90024111]@
$[0.43832722]@,$[0.61959098]@,$[0.94924601]@,$[0.52418594]@,$[2.027313]@
$[0.99852099]@,$[1.4802344]@,$[1.6550289]@,$[1.4101992]@,$[39.057297]@
$[1.0458017]@,$[1.8084328]@,$[0.96409553]@,$[0.86402498]@,$[9.0815813]@
$[0.67654465]@,$[0.67828134]@,$[1.3339601]@,$[1.2125349]@,$[11.928535]@
$[2.1130492]@,$[1.9200254]@,$[0.64017054]@,$[1.2642235]@,$[46.410712]@
$[2.2778207]@,$[2.116523]@,$[1.3038034]@,$[2.5316264]@,$[275.57458]@
$[1.4846052]@,$[1.4420658]@,$[2.7718648]@,$[1.8887982]@,$[327.18387]@
$[2.1773141]@,$[1.7973075]@,$[2.4841351]@,$[2.3641262]@,$[621.47741]@
$[2.2147328]@,$[1.0677723]@,$[1.0426162]@,$[2.3682996]@,$[161.75612]@
$[2.1777081]@,$[1.8027822]@,$[2.5668404]@,$[1.2432507]@,$[341.01914]@
$[1.4669803]@,$[2.5835654]@,$[1.3836889]@,$[3.4995767]@,$[285.6568]@
$[1.3393617]@,$[3.4996211]@,$[3.614074]@,$[1.6431561]@,$[500.92293]@

```

EP18B031

```

alpha = 0.057090084
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X4 X1 X4 X2 + beta_2 X2 X4 X1 X4 X4 + beta_3 X3 X4 X2 X2 X4
+ beta_4 X4 X3 X3 X1 X3
PARAMATER FOR POPULATION RANGE: beta_0
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@,$[1.0303039]@
$[0.097107308]@,$[0.11045047]@,$[0.055122251]@,$[0.16542141]@,$[1.6623149]@
$[0.22167863]@,$[0.3649395]@,$[0.31369273]@,$[0.11047165]@,$[0.40789368]@
$[0.27784167]@,$[0.26988634]@,$[0.16626193]@,$[0.35474939]@,$[0.87787072]@
$[0.38678739]@,$[0.49449871]@,$[0.34328659]@,$[0.4487959]@,$[-0.64211786]@
$[0.49142766]@,$[0.36868037]@,$[0.36648796]@,$[0.48790627]@,$[3.411708]@
$[0.41784919]@,$[0.9108568]@,$[0.68590614]@,$[0.46216734]@,$[1.2175662]@
$[0.58833227]@,$[0.69959336]@,$[0.83837912]@,$[1.2219709]@,$[6.9375507]@
$[0.49178447]@,$[0.53091101]@,$[0.94192237]@,$[0.76974363]@,$[1.9390093]@
$[0.6129738]@,$[1.6717776]@,$[1.4551076]@,$[1.0143162]@,$[21.063833]@
$[1.1868419]@,$[1.4596114]@,$[0.9404285]@,$[1.6858025]@,$[59.947812]@
$[1.1141201]@,$[1.1824062]@,$[1.5461703]@,$[1.0718449]@,$[29.963891]@
$[1.9982054]@,$[1.981014]@,$[1.1100474]@,$[2.0847635]@,$[268.26428]@
$[2.0933786]@,$[1.120887]@,$[2.3731574]@,$[1.5657233]@,$[210.07531]@
$[2.193798]@,$[2.719045]@,$[2.1493243]@,$[1.0430617]@,$[170.7833]@
$[1.0315531]@,$[2.5506597]@,$[1.2693585]@,$[2.9806567]@,$[460.50737]@
$[1.2757236]@,$[1.4736131]@,$[1.6461976]@,$[2.4093377]@,$[206.9841]@
$[3.377795]@,$[3.3385182]@,$[2.1240877]@,$[2.7160764]@,$[2146.2133]@
$[3.0650157]@,$[2.1068411]@,$[2.0949238]@,$[1.4988688]@,$[369.36516]@

```

BT2022_qiv_22_alldata
\$[2.7914378]@,\$[3.3763877]@,\$[3.3851169]@,\$[0.96587161]@,\$[493.75522]@

ME17B113
alpha = 0.1041446
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X3 X2 X2 X2 + beta_2 X2 X2 X2 X3 X1 + beta_3 X3 X2 X3 X1 X4
+ beta_4 X4 X1 X3 X1 X4
PARAMATER FOR POPULATION RANGE: beta_4
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[0.96510741]@
\$[0.054157958]@,\$[0.17352548]@,\$[0.11121133]@,\$[0.060402962]@,\$[-1.0590653]@
\$[0.2705422]@,\$[0.224812]@,\$[0.23657619]@,\$[0.12846122]@,\$[0.59193877]@
\$[0.2759431]@,\$[0.39558819]@,\$[0.35747167]@,\$[0.16472127]@,\$[1.067076]@
\$[0.32700925]@,\$[0.66011338]@,\$[0.25829684]@,\$[0.64559728]@,\$[0.45960942]@
\$[0.43412162]@,\$[0.38832419]@,\$[0.76031663]@,\$[0.59151072]@,\$[-0.46825713]@
\$[0.57921435]@,\$[1.0419598]@,\$[0.99862191]@,\$[1.0851635]@,\$[2.2410806]@
\$[0.90441589]@,\$[1.1698959]@,\$[0.39063709]@,\$[1.2226092]@,\$[-0.40456154]@
\$[0.43814823]@,\$[1.3272959]@,\$[0.93332677]@,\$[1.5720747]@,\$[1.7966881]@
\$[1.1961524]@,\$[0.89040278]@,\$[1.6795061]@,\$[0.48604962]@,\$[5.0384416]@
\$[1.3054956]@,\$[1.3816699]@,\$[1.5667796]@,\$[1.3171913]@,\$[21.745966]@
\$[2.1191855]@,\$[1.8558561]@,\$[1.7602317]@,\$[0.83725469]@,\$[33.477625]@
\$[0.81407046]@,\$[2.2588445]@,\$[1.7426618]@,\$[1.3979628]@,\$[27.992236]@
\$[1.7081829]@,\$[2.184509]@,\$[1.7473121]@,\$[1.8740965]@,\$[75.935166]@
\$[1.6811452]@,\$[0.84679938]@,\$[1.1085198]@,\$[1.6171012]@,\$[9.7553369]@
\$[1.7005755]@,\$[1.6858868]@,\$[2.7890063]@,\$[2.0437816]@,\$[179.70034]@
\$[2.0167351]@,\$[1.953453]@,\$[2.0049501]@,\$[2.9913995]@,\$[174.02152]@
\$[2.1259559]@,\$[2.5180104]@,\$[2.0670539]@,\$[2.6642203]@,\$[219.68301]@
\$[3.3495681]@,\$[3.2199541]@,\$[1.4686466]@,\$[2.2259701]@,\$[137.70202]@
\$[3.3340625]@,\$[2.7008548]@,\$[1.2685584]@,\$[3.3508613]@,\$[133.71499]@

ME17B120
alpha = 0.075945669
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X2 X4 X3 X4 + beta_2 X2 X4 X1 X2 X1 + beta_3 X3 X3 X3 X4 X4
+ beta_4 X4 X1 X2 X4 X3
PARAMATER FOR POPULATION RANGE: beta_4
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[2.8443735]@
\$[0.14733044]@,\$[0.14278049]@,\$[0.050836418]@,\$[0.11957058]@,\$[3.6264988]@
\$[0.23083401]@,\$[0.34369772]@,\$[0.27044852]@,\$[0.23252779]@,\$[3.4881903]@
\$[0.30254926]@,\$[0.24059078]@,\$[0.41926835]@,\$[0.32241129]@,\$[4.6765919]@
\$[0.75687335]@,\$[0.22458245]@,\$[0.59038982]@,\$[0.32165214]@,\$[3.6952152]@
\$[0.90811342]@,\$[0.9121375]@,\$[0.32793938]@,\$[0.43762171]@,\$[2.3138294]@
\$[1.0871929]@,\$[0.90525585]@,\$[0.5111438]@,\$[0.60612246]@,\$[3.1961409]@
\$[0.68791383]@,\$[0.46150433]@,\$[1.27534]@,\$[0.58175946]@,\$[3.9263929]@
\$[0.57726526]@,\$[1.4165206]@,\$[0.45084229]@,\$[1.5345986]@,\$[7.172152]@

```

BT2022_qiv_22_alldata
$[1.3764346]@,$[1.3792692]@,$[0.61006156]@,$[1.0819588]@,$[6.8624504]@
$[1.5380157]@,$[0.69581337]@,$[0.88649463]@,$[1.4076612]@,$[15.731093]@
$[1.9358683]@,$[0.81600468]@,$[1.6096857]@,$[2.0164813]@,$[104.0827]@
$[1.7705344]@,$[1.5890239]@,$[1.6876374]@,$[0.78083563]@,$[17.173502]@
$[1.6458986]@,$[0.90903299]@,$[2.5026272]@,$[1.7068074]@,$[167.68361]@
$[2.3706686]@,$[1.5116746]@,$[0.94089586]@,$[0.77298834]@,$[-4.2215142]@
$[2.6090051]@,$[2.8646261]@,$[1.6654925]@,$[1.7374269]@,$[86.75713]@
$[1.9425944]@,$[0.80666614]@,$[0.91502991]@,$[2.2315052]@,$[53.891672]@
$[1.7016658]@,$[2.5862604]@,$[2.5009063]@,$[1.6681204]@,$[245.20343]@
$[1.0822742]@,$[2.9433843]@,$[1.5753109]@,$[1.6607361]@,$[90.57869]@
$[1.7380872]@,$[3.2289569]@,$[3.2039877]@,$[1.5407015]@,$[367.89434]@

```

ME17B137

alpha = 0.1452149

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X2 X4 X3 X3 + beta_2 X2 X2 X1 X4 X2 + beta_3 X3 X3 X2 X2 X4 X4
+ beta_4 X4 X2 X2 X4 X4

PARAMATER FOR POPULATION RANGE: beta_0

DATA COLUMNS X1 X2 X3 X4 Y

```

$[0]@,$[0]@,$[0]@,$[0]@,$[4.677948]@
$[0.1767423]@,$[0.081496818]@,$[0.084441182]@,$[0.17229522]@,$[2.9900603]@
$[0.10316708]@,$[0.11872527]@,$[0.28538447]@,$[0.32174115]@,$[3.61632]@
$[0.48942553]@,$[0.18666578]@,$[0.50850742]@,$[0.33752128]@,$[5.9166412]@
$[0.61550014]@,$[0.70179148]@,$[0.2954733]@,$[0.72341698]@,$[5.949744]@
$[0.90362865]@,$[0.42459976]@,$[0.63446243]@,$[0.46750744]@,$[4.1894941]@
$[0.34493893]@,$[1.0823344]@,$[0.74372007]@,$[1.0962886]@,$[12.294196]@
$[1.1330565]@,$[1.0648736]@,$[0.77183056]@,$[0.47758094]@,$[7.0707795]@
$[0.5926298]@,$[1.3868248]@,$[0.90041227]@,$[1.2682972]@,$[33.414407]@
$[1.1819963]@,$[0.57076669]@,$[0.7547348]@,$[0.63333073]@,$[6.8854478]@
$[1.5585285]@,$[1.8004097]@,$[1.7491218]@,$[1.703208]@,$[197.80242]@
$[0.56262411]@,$[1.7376141]@,$[1.2355986]@,$[2.1907697]@,$[152.85104]@
$[0.94533337]@,$[0.82186095]@,$[2.1555544]@,$[0.94791331]@,$[16.609983]@
$[2.5879698]@,$[2.1111834]@,$[2.5673783]@,$[1.8577746]@,$[523.73377]@
$[2.3928497]@,$[1.2905586]@,$[1.7542435]@,$[1.0791881]@,$[57.66212]@
$[2.0282947]@,$[0.89996034]@,$[2.995503]@,$[2.9188474]@,$[179.21898]@
$[3.0730051]@,$[1.6643174]@,$[1.982027]@,$[3.0465756]@,$[569.81152]@
$[1.1943172]@,$[2.0773235]@,$[1.4525867]@,$[2.0355341]@,$[289.66345]@
$[1.2102046]@,$[3.3477135]@,$[2.6410736]@,$[3.4470739]@,$[3200.2501]@
$[1.5823263]@,$[2.36202]@,$[2.7442392]@,$[2.238163]@,$[793.19604]@

```

ME17B140

alpha = 0.1485664

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X3 X1 X4 X3 + beta_2 X2 X4 X3 X1 X4 + beta_3 X3 X3 X2 X3 X2
+ beta_4 X4 X2 X1 X3 X2

PARAMATER FOR POPULATION RANGE: beta_1

BT2022_qiv_22_alldata

```
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@[0]@[0]@[0]@[0]@[2.1041966]@
$[0.081371871]@[0.17038369]@[0.12586874]@[0.16395422]@[2.7819245]@
$[0.30939706]@[0.26167767]@[0.25753055]@[0.33114451]@[3.8778205]@
$[0.19256105]@[0.33679783]@[0.23639416]@[0.17463431]@[3.1582552]@
$[0.66865833]@[0.38688109]@[0.77710119]@[0.46791996]@[4.5957103]@
$[0.29595891]@[0.60695337]@[0.85872124]@[0.54616234]@[5.1592514]@
$[0.94793478]@[0.60464672]@[0.46372947]@[0.41930388]@[2.6582251]@
$[0.92413843]@[0.61822214]@[0.53626147]@[1.091758]@[-0.50205677]@
$[0.81379126]@[0.79377272]@[1.3681728]@[0.7865923]@[2.3320412]@
$[1.18604454]@[1.6859136]@[1.6205664]@[0.97104742]@[7.0927717]@
$[1.5100437]@[1.1974518]@[0.52673997]@[0.95540381]@[1.7413352]@
$[1.5807052]@[1.1749615]@[1.5637307]@[1.7810242]@[7.8086062]@
$[1.4315226]@[2.0799951]@[1.1560131]@[1.9052607]@[9.2074905]@
$[0.91343439]@[0.92048641]@[1.911157]@[2.1417103]@[5.2272913]@
$[1.9769228]@[1.6562318]@[2.5011678]@[1.859053]@[15.165867]@
$[1.5746424]@[2.9970343]@[0.82274995]@[2.1177311]@[11.610754]@
$[1.5887031]@[1.2867383]@[2.779968]@[1.1591426]@[8.3078611]@
$[0.88730914]@[1.0858826]@[2.4046799]@[1.621741]@[1.6927145]@
$[0.93476809]@[1.0522349]@[1.4890893]@[2.2086641]@[6.0514519]@
$[1.6659845]@[1.4379915]@[2.9823544]@[2.9679251]@[68.317011]@
```

ME17B141

alpha = 0.16066007

MLR FIT FUNCTION

```
Y = beta_0 + beta_1 X1 X3 X2 X2 X2 + beta_2 X2 X1 X3 X1 X2 + beta_3 X3 X3 X1 X3 X2
+ beta_4 X4 X3 X3 X1 X2
```

PARAMATER FOR POPULATION RANGE: beta_1

DATA COLUMNS X1 X2 X3 X4 Y

```
$[0]@[0]@[0]@[0]@[-3.9273089]@
$[0.17292437]@[0.058775677]@[0.18898212]@[0.19279311]@[-2.3492674]@
$[0.34991207]@[0.13869625]@[0.12936386]@[0.34433715]@[-1.1481557]@
$[0.38847054]@[0.27119699]@[0.47084212]@[0.31133067]@[-2.3959258]@
$[0.56484458]@[0.25668351]@[0.37782077]@[0.23210316]@[-0.96300967]@
$[0.27222937]@[0.77410771]@[0.44125595]@[0.71665082]@[-2.3236686]@
$[0.95598514]@[0.41480797]@[1.1462028]@[0.68525488]@[2.5408919]@
$[1.2291606]@[1.0680486]@[0.44679486]@[0.68941012]@[3.4142731]@
$[1.4292064]@[0.73903111]@[1.2080395]@[0.4053624]@[9.4504293]@
$[0.59616119]@[1.7467657]@[1.2273331]@[0.50350782]@[19.677628]@
$[0.73669325]@[0.77396415]@[1.9564563]@[0.71682812]@[19.010639]@
$[1.0025857]@[0.75703435]@[1.1628464]@[0.55553976]@[5.8136986]@
$[2.2590079]@[0.65526453]@[1.4911318]@[2.2494624]@[37.481529]@
$[0.96479412]@[0.73018015]@[1.994591]@[2.5531071]@[34.3401]@
$[1.3093372]@[2.1930182]@[2.1044315]@[1.0226763]@[228.74246]@
$[0.79003106]@[2.7668465]@[0.80395076]@[2.9518378]@[52.733141]@
$[0.95674312]@[2.5270514]@[2.1634449]@[1.0253919]@[220.36753]@
$[2.6670745]@[2.4243048]@[2.6669041]@[1.6850806]@[1085.2012]@
```

BT2022_qiv_22_alldata
\$[0.94536264]@,\$[2.2338199]@,\$[2.9706894]@,\$[3.0771309]@,\$[418.00987]@
\$[1.1707407]@,\$[1.9137177]@,\$[2.7437857]@,\$[2.3989547]@,\$[330.12281]@

ME17B146

alpha = 0.11923848

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X4 X1 X3 X2 + beta_2 X2 X3 X4 X2 X1 + beta_3 X3 X2 X1 X3 X4
+ beta_4 X4 X4 X4 X2 X1

PARAMATER FOR POPULATION RANGE: beta_4

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@[4.0676092]@
\$[0.15394699]@,\$[0.074141913]@,\$[0.060623287]@,\$[0.16017983]@,\$[3.491561]@
\$[0.38890649]@,\$[0.19843255]@,\$[0.14203854]@,\$[0.21882603]@,\$[5.2639522]@
\$[0.369964]@,\$[0.21720834]@,\$[0.42670628]@,\$[0.30169975]@,\$[3.7723802]@
\$[0.68354981]@,\$[0.60841078]@,\$[0.36784014]@,\$[0.66528492]@,\$[2.6666854]@
\$[0.90446137]@,\$[0.65488669]@,\$[0.44778784]@,\$[0.27856259]@,\$[4.272298]@
\$[0.94953457]@,\$[1.1096061]@,\$[1.1377569]@,\$[0.32465214]@,\$[7.5728148]@
\$[1.359406]@,\$[0.61831039]@,\$[0.57885733]@,\$[0.6566712]@,\$[7.6854695]@
\$[1.5469553]@,\$[0.99679835]@,\$[1.4740487]@,\$[0.59988808]@,\$[15.777014]@
\$[0.87966431]@,\$[1.4428139]@,\$[0.81462869]@,\$[1.0646284]@,\$[21.058668]@
\$[0.97930604]@,\$[1.645037]@,\$[1.5251726]@,\$[1.0402543]@,\$[38.474542]@
\$[2.0466525]@,\$[1.8993555]@,\$[0.57016473]@,\$[2.0859788]@,\$[303.91801]@
\$[1.874926]@,\$[1.377035]@,\$[1.5249121]@,\$[0.67522148]@,\$[31.314319]@
\$[1.6601012]@,\$[1.4970828]@,\$[1.1499607]@,\$[1.984076]@,\$[192.17644]@
\$[0.97977994]@,\$[0.84662638]@,\$[2.4694726]@,\$[0.88034733]@,\$[21.10858]@
\$[1.2800418]@,\$[2.3374507]@,\$[2.2224317]@,\$[2.2258337]@,\$[399.07583]@
\$[2.5805057]@,\$[3.0326312]@,\$[1.0992272]@,\$[1.1430542]@,\$[213.41147]@
\$[2.0968889]@,\$[1.5825213]@,\$[1.8852605]@,\$[1.1542703]@,\$[110.08234]@
\$[3.0292431]@,\$[1.0101684]@,\$[2.5488265]@,\$[1.0917337]@,\$[124.33106]@
\$[1.5740116]@,\$[1.7335423]@,\$[2.973926]@,\$[3.7606951]@,\$[1398.5214]@

ME17B184

alpha = 0.10514577

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X3 X4 X1 X1 + beta_2 X2 X2 X2 X1 X2 + beta_3 X3 X3 X3 X1 X4
+ beta_4 X4 X4 X4 X3

PARAMATER FOR POPULATION RANGE: beta_1

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@[4.0757753]@
\$[0.16667491]@,\$[0.15636533]@,\$[0.1279492]@,\$[0.13604391]@,\$[2.2429357]@
\$[0.2071457]@,\$[0.18771133]@,\$[0.14795833]@,\$[0.14220528]@,\$[4.2745047]@
\$[0.17122067]@,\$[0.27769098]@,\$[0.4171958]@,\$[0.38903591]@,\$[2.8212351]@
\$[0.54459844]@,\$[0.74156765]@,\$[0.66835575]@,\$[0.26528593]@,\$[3.1115691]@
\$[0.80133855]@,\$[0.27654817]@,\$[0.88389391]@,\$[0.36191314]@,\$[3.6517772]@
\$[0.91679861]@,\$[0.49999594]@,\$[0.57713301]@,\$[0.84744054]@,\$[4.8275404]@
\$[1.1627697]@,\$[0.92717386]@,\$[1.1083552]@,\$[0.80754899]@,\$[8.5836505]@

```

BT2022_qiv_22_alldata
$[0.77305924]@,$[0.80467134]@,$[1.2832465]@,$[1.484179]@,$[21.525518]@
$[1.1448202]@,$[1.0412584]@,$[0.4913782]@,$[1.3925255]@,$[16.456912]@
$[1.7760685]@,$[1.6941104]@,$[1.7143679]@,$[1.4557124]@,$[86.169222]@
$[2.1719402]@,$[0.64616898]@,$[2.1243554]@,$[0.78979275]@,$[5.5902729]@
$[1.3967362]@,$[0.72122492]@,$[0.64974215]@,$[0.75570575]@,$[7.7268265]@
$[0.70767665]@,$[1.4244227]@,$[2.1838146]@,$[2.3561514]@,$[198.06959]@
$[0.94102137]@,$[0.85117914]@,$[1.3829848]@,$[1.6856781]@,$[35.758421]@
$[2.6994465]@,$[2.9329811]@,$[1.7288929]@,$[2.8930257]@,$[1376.4617]@
$[2.5863376]@,$[1.7458478]@,$[1.3747955]@,$[3.169551]@,$[759.10706]@
$[1.9371909]@,$[1.120117]@,$[2.9799783]@,$[2.552206]@,$[178.27857]@
$[3.2796481]@,$[3.4446822]@,$[2.4419173]@,$[1.6656283]@,$[2027.8655]@
$[3.5709689]@,$[2.9265348]@,$[1.3126755]@,$[2.2386157]@,$[1499.2385]@

```

ME18B013

alpha = 0.19947111

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X4 X4 X2 X3 + beta_2 X2 X2 X4 X2 X3 + beta_3 X3 X4 X3 X2 X1
+ beta_4 X4 X4 X1 X4 X1

PARAMATER FOR POPULATION RANGE: beta_1

DATA COLUMNS X1 X2 X3 X4 Y

```

$[0]@,$[0]@,$[0]@,$[0]@,$[2.8853939]@
$[0.15047908]@,$[0.14536377]@,$[0.147681]@,$[0.069237662]@,$[2.2627022]@
$[0.35085627]@,$[0.20870684]@,$[0.11527577]@,$[0.36947055]@,$[2.4168855]@
$[0.28060998]@,$[0.49283958]@,$[0.25721849]@,$[0.15180245]@,$[2.0471205]@
$[0.65905913]@,$[0.55757242]@,$[0.71070702]@,$[0.40663854]@,$[1.4022923]@
$[0.61883517]@,$[0.44197137]@,$[0.52293578]@,$[0.30942446]@,$[3.1336435]@
$[0.41279118]@,$[0.44933125]@,$[1.1035441]@,$[0.52017827]@,$[3.6481493]@
$[1.2919547]@,$[1.2655105]@,$[0.87584867]@,$[0.46376597]@,$[4.9807814]@
$[1.0711217]@,$[0.67686735]@,$[1.5366197]@,$[0.85103948]@,$[7.0197719]@
$[1.4129308]@,$[0.69098236]@,$[1.7114159]@,$[1.4220347]@,$[18.529033]@
$[0.56551634]@,$[1.8894904]@,$[1.2348663]@,$[0.81704928]@,$[23.451838]@
$[0.56336807]@,$[0.82209573]@,$[1.2105016]@,$[2.1131193]@,$[13.218444]@
$[2.2424983]@,$[1.7617364]@,$[1.0886966]@,$[2.0353429]@,$[112.67754]@
$[1.995646]@,$[1.9497067]@,$[2.2129407]@,$[2.166809]@,$[222.4385]@
$[1.3815613]@,$[2.2008101]@,$[2.4540556]@,$[1.3072522]@,$[132.34573]@
$[2.4040144]@,$[1.9157897]@,$[1.4251253]@,$[1.3128188]@,$[73.733564]@
$[2.0766082]@,$[1.5956113]@,$[0.94456305]@,$[2.2584262]@,$[105.40153]@
$[1.9743193]@,$[1.913446]@,$[2.0854283]@,$[1.0011605]@,$[67.195211]@
$[2.4735729]@,$[1.3136792]@,$[2.6499582]@,$[3.358532]@,$[481.77303]@
$[2.8510326]@,$[2.3054299]@,$[3.5818175]@,$[3.3453027]@,$[1258.1123]@

```

ME18B021

alpha = 0.16278933

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X3 X1 X3 X3 + beta_2 X2 X2 X4 X3 X4 + beta_3 X3 X2 X2 X1 X1
+ beta_4 X4 X4 X1 X4 X4

BT2022_qiv_22_alldata

PARAMATER FOR POPULATION RANGE: beta_2

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[2.5099292]@
\$[0.055055914]@,\$[0.14941743]@,\$[0.07022193]@,\$[0.18197852]@,\$[5.4165321]@
\$[0.39086]@,\$[0.37730733]@,\$[0.31361055]@,\$[0.28220553]@,\$[3.4667366]@
\$[0.24285733]@,\$[0.22374655]@,\$[0.37308206]@,\$[0.4038629]@,\$[7.0242577]@
\$[0.56560156]@,\$[0.60112952]@,\$[0.27158628]@,\$[0.64882518]@,\$[5.0815074]@
\$[0.41647939]@,\$[0.32293728]@,\$[0.76755138]@,\$[0.48525615]@,\$[4.5485022]@
\$[0.95943198]@,\$[0.91709959]@,\$[0.62813754]@,\$[0.64632016]@,\$[8.888436]@
\$[0.46593107]@,\$[1.0319664]@,\$[1.3241053]@,\$[0.66331771]@,\$[6.44341]@
\$[0.91156383]@,\$[1.4402672]@,\$[0.5353766]@,\$[1.4404882]@,\$[18.751017]@
\$[0.57006516]@,\$[1.750557]@,\$[0.98239919]@,\$[1.0619734]@,\$[10.81964]@
\$[1.2830922]@,\$[0.80454161]@,\$[0.99378612]@,\$[0.87199447]@,\$[13.82159]@
\$[2.1317231]@,\$[1.814834]@,\$[0.5707277]@,\$[0.87137822]@,\$[44.839633]@
\$[0.7731934]@,\$[1.3016736]@,\$[1.2163767]@,\$[1.2470955]@,\$[15.875873]@
\$[1.7732083]@,\$[2.1237893]@,\$[2.0522699]@,\$[1.2204601]@,\$[175.46637]@
\$[1.7061337]@,\$[1.693461]@,\$[2.4798975]@,\$[1.0503363]@,\$[152.69781]@
\$[2.5491645]@,\$[1.8938094]@,\$[2.9659334]@,\$[1.6836803]@,\$[554.81146]@
\$[2.2837182]@,\$[1.7838255]@,\$[1.2076824]@,\$[2.8275685]@,\$[452.51153]@
\$[1.9779485]@,\$[0.90977709]@,\$[1.7479072]@,\$[1.795367]@,\$[102.34869]@
\$[3.57011]@,\$[2.7488918]@,\$[1.782672]@,\$[2.2767747]@,\$[1075.2769]@
\$[3.385963]@,\$[2.3804221]@,\$[2.5067254]@,\$[1.0488064]@,\$[942.31739]@

ME18B023

alpha = 0.0889108

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X1 X4 X1 X2 + beta_2 X2 X3 X4 X3 X2 + beta_3 X3 X4 X2 X3 X1
+ beta_4 X4 X1 X1 X4 X4

PARAMATER FOR POPULATION RANGE: beta_2

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[-0.5592118]@
\$[0.095627583]@,\$[0.12458995]@,\$[0.056912343]@,\$[0.13844064]@,\$[1.1163389]@
\$[0.1760649]@,\$[0.29145546]@,\$[0.13538523]@,\$[0.26512014]@,\$[3.9737131]@
\$[0.18575071]@,\$[0.43099412]@,\$[0.53604118]@,\$[0.55020904]@,\$[3.0037602]@
\$[0.70069259]@,\$[0.23747729]@,\$[0.78917681]@,\$[0.48074691]@,\$[1.7756493]@
\$[0.36044325]@,\$[0.93134805]@,\$[0.56019484]@,\$[0.52497597]@,\$[2.6564298]@
\$[0.69246806]@,\$[0.57475803]@,\$[0.69725121]@,\$[1.1415725]@,\$[5.1962868]@
\$[0.75317729]@,\$[0.59681866]@,\$[1.2120735]@,\$[0.56808249]@,\$[2.6403373]@
\$[1.3563251]@,\$[1.2299618]@,\$[0.64863906]@,\$[1.5173489]@,\$[36.075844]@
\$[0.51247527]@,\$[0.943921]@,\$[0.45003814]@,\$[0.78630627]@,\$[5.4509421]@
\$[1.9186334]@,\$[1.6975611]@,\$[0.78032137]@,\$[0.95630008]@,\$[55.358388]@
\$[1.8892269]@,\$[1.5936532]@,\$[1.390281]@,\$[1.1568323]@,\$[79.214507]@
\$[2.0410967]@,\$[1.6457944]@,\$[0.93789748]@,\$[2.0348404]@,\$[191.89681]@
\$[1.9930334]@,\$[0.92721405]@,\$[2.0932284]@,\$[2.3170538]@,\$[208.67365]@
\$[1.5760817]@,\$[2.5250681]@,\$[2.7135672]@,\$[1.1215896]@,\$[254.7553]@
\$[2.7418868]@,\$[1.7630086]@,\$[2.6464069]@,\$[1.8532733]@,\$[514.56665]@
\$[2.4010557]@,\$[0.9873494]@,\$[2.6459451]@,\$[2.6618131]@,\$[450.78377]@

```

BT2022_qiv_22_alldata
$[1.5480727]@,$[1.593287]@,$[3.1192658]@,$[2.035141]@,$[298.12742]@
$[1.7494227]@,$[1.7372982]@,$[1.7632468]@,$[1.1268834]@,$[90.916658]@
$[3.7298916]@,$[1.7627479]@,$[3.1114397]@,$[1.5345595]@,$[807.13228]@

ME18B024
alpha = 0.099754512
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X1 X1 X4 X1 + beta_2 X2 X4 X1 X2 X4 + beta_3 X3 X4 X3 X4 X3
+ beta_4 X4 X3 X1 X4 X4
PARAMATER FOR POPULATION RANGE: beta_0
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@,$[3.3369981]@
$[0.095196093]@,$[0.18845236]@,$[0.11478616]@,$[0.094435772]@,$[-0.15233581]@
$[0.25757888]@,$[0.25209743]@,$[0.1019308]@,$[0.37099294]@,$[0.62292856]@
$[0.20125411]@,$[0.45547897]@,$[0.47115062]@,$[0.51585415]@,$[2.5631504]@
$[0.52725222]@,$[0.38265292]@,$[0.25160893]@,$[0.39486731]@,$[1.8756216]@
$[0.6496264]@,$[0.83133738]@,$[0.31356575]@,$[0.943186]@,$[3.0722451]@
$[0.80862981]@,$[0.96547834]@,$[1.125398]@,$[0.4155628]@,$[3.0069672]@
$[0.92235055]@,$[0.8776318]@,$[0.56715613]@,$[0.6690354]@,$[3.8728384]@
$[0.94605002]@,$[0.48821665]@,$[0.7816567]@,$[1.4201148]@,$[7.2073297]@
$[1.2324686]@,$[1.2175451]@,$[0.86856772]@,$[1.7507296]@,$[29.01974]@
$[1.3617182]@,$[0.97833647]@,$[1.7436312]@,$[1.2798929]@,$[29.169739]@
$[1.3377284]@,$[1.5998408]@,$[1.2753147]@,$[0.95834942]@,$[16.289482]@
$[1.9597455]@,$[2.1842138]@,$[1.8257787]@,$[1.2903724]@,$[81.66524]@
$[1.7268317]@,$[1.6291884]@,$[1.3976022]@,$[2.3467922]@,$[140.49014]@
$[2.1828997]@,$[0.88050939]@,$[1.9503214]@,$[2.2414698]@,$[154.08043]@
$[1.4004359]@,$[1.8305979]@,$[0.83635621]@,$[2.7788148]@,$[143.32946]@
$[2.9080568]@,$[2.9140751]@,$[1.5741496]@,$[2.6075506]@,$[699.82327]@
$[3.1936362]@,$[2.5875513]@,$[1.9923653]@,$[2.2588562]@,$[564.97269]@
$[3.3385184]@,$[2.139309]@,$[1.4819082]@,$[3.5285316]@,$[1025.4655]@
$[2.0473826]@,$[1.5733153]@,$[2.0273655]@,$[3.4618301]@,$[527.00584]@

```

```

ME18B040
alpha = 0.15604538
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X3 X2 X3 X3 + beta_2 X2 X3 X2 X1 X1 + beta_3 X3 X4 X4 X4 X2
+ beta_4 X4 X2 X2 X3 X3
PARAMATER FOR POPULATION RANGE: beta_1
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@,$[2.1783921]@
$[0.052361034]@,$[0.067728302]@,$[0.081220588]@,$[0.13493588]@,$[1.1822155]@
$[0.11850562]@,$[0.13313514]@,$[0.28537562]@,$[0.28839888]@,$[-0.83642466]@
$[0.50916248]@,$[0.3119582]@,$[0.49844255]@,$[0.47956707]@,$[1.6650868]@
$[0.5309085]@,$[0.65569415]@,$[0.73566464]@,$[0.24116717]@,$[-0.60700811]@
$[0.58549702]@,$[0.90343082]@,$[0.36357333]@,$[0.90081163]@,$[1.9248073]@
$[0.69095008]@,$[0.73321377]@,$[0.31691287]@,$[0.78806466]@,$[-0.86525649]@

```

```

BT2022_qiv_22_alldata
$[0.91618817]@,$[0.80778123]@,$[1.0329703]@,$[0.75215127]@,$[1.2894854]@
$[0.7313386]@,$[1.114369]@,$[1.3416454]@,$[0.82213161]@,$[0.92036512]@
$[0.87788791]@,$[0.63546906]@,$[0.82725367]@,$[1.1336747]@,$[-1.0023824]@
$[1.1641298]@,$[0.72038077]@,$[0.873616]@,$[1.1609301]@,$[-1.7272521]@
$[1.0164211]@,$[1.3132322]@,$[0.9497264]@,$[1.6013821]@,$[-3.5920126]@
$[2.1513824]@,$[2.0189555]@,$[1.2641568]@,$[1.4226276]@,$[-9.3655114]@
$[2.3390788]@,$[0.76931333]@,$[1.8985363]@,$[0.71031441]@,$[15.9213]@
$[1.7195907]@,$[1.0412319]@,$[0.85851608]@,$[1.1415468]@,$[-1.0241805]@
$[2.7015674]@,$[1.718528]@,$[2.4598598]@,$[1.4531527]@,$[52.515286]@
$[2.7180104]@,$[2.5878677]@,$[1.2304399]@,$[1.5260305]@,$[-24.474995]@
$[3.3420171]@,$[1.4205829]@,$[0.88112826]@,$[2.8080704]@,$[-27.723203]@
$[1.8014362]@,$[3.5760397]@,$[3.4854902]@,$[1.1706217]@,$[222.33349]@
$[3.6424909]@,$[2.8564428]@,$[3.1603242]@,$[3.0202575]@,$[-1.0282234]@

```

ME18B042

alpha = 0.058252189

MLR FIT FUNCTION

```

Y = beta_0 + beta_1 X1 X4 X4 X4 X2 + beta_2 X2 X1 X3 X4 X3 + beta_3 X3 X4 X1 X3 X4
+ beta_4 X4 X3 X3 X4 X1
PARAMATER FOR POPULATION RANGE: beta_1
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@,$[7.6101939]@
$[0.16343036]@,$[0.18538484]@,$[0.19586239]@,$[0.16863209]@,$[10.841926]@
$[0.36715274]@,$[0.10012041]@,$[0.25754165]@,$[0.14132482]@,$[6.3799216]@
$[0.24839037]@,$[0.20312092]@,$[0.57365845]@,$[0.25229089]@,$[8.1351324]@
$[0.65859775]@,$[0.57407058]@,$[0.50160515]@,$[0.35748755]@,$[9.2651723]@
$[0.95961462]@,$[0.32413247]@,$[0.35171909]@,$[0.28947464]@,$[8.9805466]@
$[1.197344]@,$[0.98581389]@,$[0.66328887]@,$[0.56024674]@,$[8.1362119]@
$[0.64430306]@,$[1.0295582]@,$[0.69414021]@,$[0.40842766]@,$[8.9751799]@
$[0.93797374]@,$[1.5268479]@,$[1.3321718]@,$[0.62511713]@,$[9.7369226]@
$[1.1519004]@,$[0.97967187]@,$[0.87148305]@,$[1.5977123]@,$[32.411812]@
$[1.7656333]@,$[0.87258753]@,$[1.7897493]@,$[0.95710847]@,$[26.125962]@
$[1.9531278]@,$[1.3268282]@,$[1.8741086]@,$[0.6975283]@,$[18.009523]@
$[0.69883788]@,$[1.7993256]@,$[1.1819834]@,$[2.1057007]@,$[64.456809]@
$[1.3401522]@,$[1.379073]@,$[1.2651912]@,$[2.0974637]@,$[97.982317]@
$[1.5494419]@,$[1.0534024]@,$[2.6131345]@,$[1.330003]@,$[70.994963]@
$[1.3202805]@,$[1.9900846]@,$[2.7549711]@,$[2.8870604]@,$[476.9038]@
$[2.6304359]@,$[1.4633271]@,$[2.4336229]@,$[0.87745301]@,$[36.419269]@
$[3.2238096]@,$[2.7840178]@,$[1.1468039]@,$[1.6330818]@,$[168.08781]@
$[1.3524248]@,$[3.3186773]@,$[1.3445453]@,$[1.1366854]@,$[31.333176]@
$[1.4309229]@,$[2.3809324]@,$[1.1125723]@,$[1.3871509]@,$[45.383417]@

```

ME18B055

alpha = 0.15713848

MLR FIT FUNCTION

```

Y = beta_0 + beta_1 X1 X3 X4 X4 X4 + beta_2 X2 X2 X1 X3 X4 + beta_3 X3 X4 X4 X4 X2

```

```

BT2022_qiv_22_alldata
+ beta_4 X4 X2 X3 X1 X4
PARAMATER FOR POPULATION RANGE: beta_4
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@[0.67021953]@
$[0.1710873]@,$[0.12907516]@,$[0.17927626]@,$[0.10798753]@,$[0.92428391]@
$[0.2704962]@,$[0.38543138]@,$[0.10476457]@,$[0.1530011]@,$[2.4205381]@
$[0.36970961]@,$[0.41821047]@,$[0.31893155]@,$[0.27659757]@,$[3.3020783]@
$[0.58260425]@,$[0.36260064]@,$[0.28121326]@,$[0.30656252]@,$[2.1728144]@
$[0.6912843]@,$[0.38134087]@,$[0.59695516]@,$[0.72483533]@,$[4.8894934]@
$[0.48437284]@,$[1.1260999]@,$[0.96983138]@,$[0.88066614]@,$[5.7792009]@
$[0.82681564]@,$[1.2352816]@,$[1.2730083]@,$[0.80108199]@,$[7.3402685]@
$[1.0788816]@,$[0.43837204]@,$[0.96551294]@,$[1.0318415]@,$[10.598934]@
$[1.6214546]@,$[1.0215226]@,$[1.2729399]@,$[0.52451237]@,$[5.4121146]@
$[1.5770839]@,$[1.3260915]@,$[1.566453]@,$[1.9138652]@,$[142.11368]@
$[2.1021932]@,$[1.2982519]@,$[1.5039298]@,$[1.8826055]@,$[161.31486]@
$[1.671863]@,$[0.60329899]@,$[0.8578863]@,$[2.0377443]@,$[73.033011]@
$[1.866781]@,$[1.8642676]@,$[2.1299295]@,$[1.2735051]@,$[79.98594]@
$[2.3549228]@,$[1.492854]@,$[2.7482679]@,$[2.4745007]@,$[722.44234]@
$[2.1939603]@,$[1.7100065]@,$[1.0741383]@,$[1.7082523]@,$[99.54999]@
$[1.584941]@,$[1.4245532]@,$[0.82836861]@,$[3.0351166]@,$[283.1138]@
$[0.86975928]@,$[2.136746]@,$[1.759567]@,$[3.0396271]@,$[519.42465]@
$[2.0968773]@,$[2.0035121]@,$[2.7100593]@,$[2.914355]@,$[1171.4591]@
$[3.6079773]@,$[2.3445813]@,$[1.7658162]@,$[0.99082478]@,$[48.468185]@

```

```

ME18B079
alpha = 0.084878478
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X2 X3 X1 X2 + beta_2 X2 X3 X4 X1 X2 + beta_3 X3 X4 X1 X4 X1
+ beta_4 X4 X2 X2 X4 X2
PARAMATER FOR POPULATION RANGE: beta_4
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@[4.278516]@
$[0.14164952]@,$[0.080053412]@,$[0.17307505]@,$[0.15912096]@,$[5.2713538]@
$[0.11672404]@,$[0.34243954]@,$[0.12660273]@,$[0.37071785]@,$[5.3237807]@
$[0.51197245]@,$[0.48534609]@,$[0.39853036]@,$[0.48844963]@,$[6.3740107]@
$[0.40527294]@,$[0.27700979]@,$[0.61334091]@,$[0.39465193]@,$[5.3632965]@
$[0.80070448]@,$[0.71382729]@,$[0.29148994]@,$[0.33101247]@,$[5.8774427]@
$[1.0858271]@,$[0.8370746]@,$[0.70720917]@,$[0.30370403]@,$[4.0109827]@
$[1.3042962]@,$[1.3578334]@,$[0.5929843]@,$[0.49009609]@,$[6.8917538]@
$[1.4294867]@,$[0.54414475]@,$[1.5185297]@,$[1.1371929]@,$[7.7227402]@
$[1.2917587]@,$[0.85230653]@,$[0.49904874]@,$[1.0977529]@,$[8.4798688]@
$[1.2798925]@,$[1.5594417]@,$[1.3411074]@,$[1.9749518]@,$[74.558799]@
$[1.9951959]@,$[1.6075305]@,$[1.1264944]@,$[1.7650224]@,$[71.566888]@
$[1.9179118]@,$[0.70608306]@,$[0.8690283]@,$[0.65930373]@,$[6.7606153]@
$[1.1979444]@,$[2.2757489]@,$[1.0620289]@,$[1.7393381]@,$[155.92133]@
$[1.0772813]@,$[1.92447]@,$[0.88565941]@,$[1.2491991]@,$[52.351677]@
$[2.4056074]@,$[2.6038634]@,$[2.4291314]@,$[2.3651332]@,$[520.72247]@

```

```

BT2022_qiv_22_alldata
$[1.1700315]@,$[2.1322948]@,$[3.0814689]@,$[1.934204]@,$[189.72978]@
$[3.2146001]@,$[2.8977952]@,$[1.2142525]@,$[2.8864161]@,$[916.62739]@
$[2.0374602]@,$[1.3139617]@,$[1.8192203]@,$[1.4250901]@,$[36.200942]@
$[2.3015168]@,$[3.7572233]@,$[2.363973]@,$[3.0364674]@,$[2199.7955]@

ME18B087
alpha = 0.14465038
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X3 X4 X2 X3 + beta_2 X2 X2 X4 X2 X1 + beta_3 X3 X4 X1 X3 X2
+ beta_4 X4 X1 X2 X3 X4
PARAMATER FOR POPULATION RANGE: beta_3
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@[3.9301149]@
$[0.083584716]@,$[0.131355]@,$[0.093271672]@,$[0.1235729]@,$[3.9662149]@
$[0.32820724]@,$[0.28318381]@,$[0.28212966]@,$[0.21499037]@,$[3.4945516]@
$[0.36642007]@,$[0.50062095]@,$[0.234735]@,$[0.30907338]@,$[4.2621199]@
$[0.31029191]@,$[0.34197724]@,$[0.68806163]@,$[0.5545282]@,$[2.8740796]@
$[0.74782022]@,$[0.7872635]@,$[0.41805927]@,$[0.91174812]@,$[4.7663617]@
$[0.99192128]@,$[1.0827687]@,$[0.78243265]@,$[0.77234679]@,$[11.551878]@
$[0.36039839]@,$[1.0208318]@,$[1.3797281]@,$[1.0954975]@,$[8.6110199]@
$[0.82503667]@,$[0.98799758]@,$[1.1518542]@,$[0.68507316]@,$[9.7689113]@
$[1.5028384]@,$[1.4933379]@,$[0.72601999]@,$[0.57920537]@,$[23.426311]@
$[1.7038854]@,$[1.7928833]@,$[1.7525296]@,$[1.234577]@,$[139.4255]@
$[1.3500604]@,$[0.63864147]@,$[1.523002]@,$[0.64946096]@,$[12.684332]@
$[0.91775476]@,$[2.1436752]@,$[1.3967513]@,$[1.7734744]@,$[136.60048]@
$[1.3235736]@,$[0.78357826]@,$[0.69390955]@,$[1.1804435]@,$[11.433716]@
$[1.8061017]@,$[2.3770083]@,$[2.0438309]@,$[0.72837898]@,$[168.9443]@
$[1.1274695]@,$[0.95100558]@,$[2.8845871]@,$[2.0920151]@,$[122.68633]@
$[3.0795439]@,$[2.9834677]@,$[2.14903]@,$[1.0158562]@,$[692.11365]@
$[1.9726327]@,$[2.6996184]@,$[1.2988496]@,$[3.2159277]@,$[934.8477]@
$[2.8932039]@,$[1.2675864]@,$[1.9218257]@,$[2.009253]@,$[239.90015]@
$[2.4455649]@,$[1.2775601]@,$[3.6485132]@,$[3.4109515]@,$[973.19459]@

ME18B102
alpha = 0.073097964
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X3 X4 X2 X4 + beta_2 X2 X2 X4 X1 X2 + beta_3 X3 X1 X4 X1 X4
+ beta_4 X4 X2 X1 X4 X4
PARAMATER FOR POPULATION RANGE: beta_1
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@[1.8003606]@
$[0.1509452]@,$[0.066980808]@,$[0.19007472]@,$[0.14615569]@,$[3.7535856]@
$[0.19456725]@,$[0.14848205]@,$[0.30078299]@,$[0.19091787]@,$[1.5917616]@
$[0.21803781]@,$[0.29253143]@,$[0.18822831]@,$[0.3841604]@,$[3.7406686]@
$[0.66814615]@,$[0.58571528]@,$[0.77883697]@,$[0.71273071]@,$[3.2768967]@
$[0.88801452]@,$[0.84570491]@,$[0.3136526]@,$[0.52043405]@,$[1.7451985]@

```

BT2022_qiv_22_alldata

$\$[0.51745952]@, \$[0.77595709]@, \$[0.86632525]@, \$[0.59282779]@, \$[2.7095089]@$
 $\$[1.0484137]@, \$[0.96591834]@, \$[0.89779732]@, \$[0.90398562]@, \$[8.0815964]@$
 $\$[1.1600903]@, \$[0.80210687]@, \$[0.7331029]@, \$[1.16708]@, \$[11.123218]@$
 $\$[0.83149906]@, \$[1.204725]@, \$[0.68439776]@, \$[1.7232921]@, \$[23.030452]@$
 $\$[0.63048743]@, \$[1.1389989]@, \$[1.9393382]@, \$[1.1780515]@, \$[8.6316853]@$
 $\$[1.4780133]@, \$[1.041084]@, \$[1.5045983]@, \$[1.0343989]@, \$[18.884871]@$
 $\$[2.2322534]@, \$[1.5220288]@, \$[1.2732668]@, \$[0.85255046]@, \$[37.992812]@$
 $\$[1.9967962]@, \$[1.6476084]@, \$[2.0444634]@, \$[0.68278654]@, \$[31.924743]@$
 $\$[2.7996355]@, \$[0.8952555]@, \$[1.7150277]@, \$[1.1573186]@, \$[58.844388]@$
 $\$[1.45705]@, \$[1.1341244]@, \$[2.647984]@, \$[1.2036115]@, \$[32.549074]@$
 $\$[1.766378]@, \$[3.1887672]@, \$[1.5779857]@, \$[1.9223375]@, \$[475.04238]@$
 $\$[0.92056676]@, \$[0.92043208]@, \$[2.0177394]@, \$[1.2192695]@, \$[13.243609]@$
 $\$[2.3461637]@, \$[3.061745]@, \$[3.1253358]@, \$[2.0630189]@, \$[697.3153]@$
 $\$[2.978966]@, \$[1.986989]@, \$[2.3874937]@, \$[2.6004235]@, \$[688.76264]@$

ME18B103

alpha = 0.11385084

MLR FIT FUNCTION

$Y = \beta_0 + \beta_1 X_1 X_1 X_2 X_1 X_1 + \beta_2 X_2 X_3 X_3 X_3 X_1 + \beta_3 X_3 X_1 X_1 X_1 X_3$
 $+ \beta_4 X_4 X_2 X_2 X_4 X_4$

PARAMATER FOR POPULATION RANGE: beta_0

DATA COLUMNS X1 X2 X3 X4 Y

$\$[0]@, \$[0]@, \$[0]@, \$[0]@, \$[3.7658726]@$
 $\$[0.17839104]@, \$[0.12487188]@, \$[0.066966305]@, \$[0.081949678]@, \$[4.3947808]@$
 $\$[0.12084583]@, \$[0.24993182]@, \$[0.1000948]@, \$[0.13209051]@, \$[1.8587646]@$
 $\$[0.34885975]@, \$[0.29815896]@, \$[0.31833667]@, \$[0.33049112]@, \$[2.6453486]@$
 $\$[0.28173674]@, \$[0.71752075]@, \$[0.70339537]@, \$[0.42580814]@, \$[2.9171398]@$
 $\$[0.54868801]@, \$[0.84686759]@, \$[0.27316078]@, \$[0.4675239]@, \$[4.5764194]@$
 $\$[0.33928481]@, \$[0.92294649]@, \$[0.66845213]@, \$[0.67321933]@, \$[5.8095737]@$
 $\$[0.99393269]@, \$[0.41820647]@, \$[0.41804671]@, \$[0.4234524]@, \$[4.7192983]@$
 $\$[0.47463851]@, \$[1.3013215]@, \$[1.0955141]@, \$[1.5624984]@, \$[25.208423]@$
 $\$[1.4434638]@, \$[0.80286345]@, \$[1.3591939]@, \$[1.6467831]@, \$[33.598559]@$
 $\$[1.4870094]@, \$[0.73575637]@, \$[1.3605139]@, \$[1.3759119]@, \$[28.276272]@$
 $\$[1.6008932]@, \$[0.61257063]@, \$[0.90302534]@, \$[2.0458457]@, \$[22.737497]@$
 $\$[1.4152758]@, \$[1.2590461]@, \$[2.1999743]@, \$[1.1655144]@, \$[102.21309]@$
 $\$[1.4763599]@, \$[2.2749127]@, \$[2.0243262]@, \$[1.8174484]@, \$[222.99047]@$
 $\$[1.9784903]@, \$[0.81507756]@, \$[2.4632109]@, \$[1.50187]@, \$[181.78038]@$
 $\$[1.9430452]@, \$[1.7005562]@, \$[0.86550747]@, \$[0.95562482]@, \$[38.802761]@$
 $\$[2.2987062]@, \$[3.0986236]@, \$[2.3701048]@, \$[2.2038684]@, \$[805.68725]@$
 $\$[1.3097183]@, \$[2.5496815]@, \$[0.86733775]@, \$[1.0283345]@, \$[37.856151]@$
 $\$[1.7509765]@, \$[1.306111]@, \$[2.6281168]@, \$[1.9993936]@, \$[259.27327]@$
 $\$[2.4642341]@, \$[3.7932587]@, \$[1.5239882]@, \$[1.1115274]@, \$[311.06764]@$

ME18B105

alpha = 0.1479626

MLR FIT FUNCTION

```

BT2022_qiv_22_alldata
Y = beta_0 + beta_1 X1 X4 X1 X3 X4 + beta_2 X2 X2 X3 X4 X3 + beta_3 X3 X2 X1 X4 X3
+ beta_4 X4 X1 X3 X1 X1
PARAMATER FOR POPULATION RANGE: beta_2
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@,$[2.9763763]@
$[0.1258627]@,$[0.1038798]@,$[0.078241446]@,$[0.069535858]@,$[2.9346969]@
$[0.23423831]@,$[0.20391111]@,$[0.3208498]@,$[0.3155233]@,$[3.8610842]@
$[0.54283155]@,$[0.3949232]@,$[0.19945199]@,$[0.27700484]@,$[3.5855837]@
$[0.32902872]@,$[0.2210508]@,$[0.43671284]@,$[0.56624282]@,$[4.7388668]@
$[0.50576343]@,$[0.8738341]@,$[0.58839528]@,$[0.44091113]@,$[4.6076201]@
$[0.57456547]@,$[0.53663964]@,$[0.83436771]@,$[0.98109304]@,$[4.8817664]@
$[0.37571829]@,$[1.2222815]@,$[1.0532365]@,$[0.88777964]@,$[10.585177]@
$[1.0978342]@,$[0.89519744]@,$[0.95580547]@,$[1.2133063]@,$[22.408301]@
$[1.2257203]@,$[1.7849862]@,$[0.99133678]@,$[1.5303365]@,$[59.263557]@
$[1.9541915]@,$[1.7587632]@,$[1.71992]@,$[0.87580142]@,$[133.11725]@
$[1.7823657]@,$[1.7163385]@,$[2.1964558]@,$[1.3657892]@,$[268.55256]@
$[2.3652223]@,$[2.183323]@,$[1.8929988]@,$[1.5332759]@,$[460.6157]@
$[1.0533148]@,$[2.2468164]@,$[1.3990296]@,$[1.1945895]@,$[81.409264]@
$[2.2010957]@,$[2.3600668]@,$[1.2857856]@,$[1.8319278]@,$[309.5924]@
$[2.110807]@,$[1.9276574]@,$[1.7525643]@,$[2.1106611]@,$[468.06376]@
$[2.6661963]@,$[2.1016469]@,$[2.954749]@,$[1.1716966]@,$[767.39744]@
$[2.3949657]@,$[3.3666968]@,$[2.9257756]@,$[3.2552172]@,$[3145.1799]@
$[1.8216268]@,$[3.5040336]@,$[3.3435434]@,$[1.3060646]@,$[1132.3343]@
$[2.4776188]@,$[2.1889838]@,$[3.7499534]@,$[3.1054435]@,$[3216.3351]@

```

ME18B106

```

alpha = 0.12339631
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X1 X4 X3 X3 + beta_2 X2 X4 X2 X2 X2 + beta_3 X3 X4 X3 X4 X4
+ beta_4 X4 X4 X4 X2 X2
PARAMATER FOR POPULATION RANGE: beta_2
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@,$[2.6836435]@
$[0.10763799]@,$[0.053108527]@,$[0.10416429]@,$[0.090053362]@,$[3.5722951]@
$[0.24830492]@,$[0.30997884]@,$[0.12211239]@,$[0.36768243]@,$[3.6952459]@
$[0.37789092]@,$[0.56152888]@,$[0.39289623]@,$[0.3445576]@,$[4.9105133]@
$[0.33744441]@,$[0.31669718]@,$[0.69221285]@,$[0.69665736]@,$[3.3382175]@
$[0.7255095]@,$[0.40344105]@,$[0.63921464]@,$[0.98624791]@,$[3.130368]@
$[0.99611753]@,$[0.81658346]@,$[0.59336648]@,$[0.76555606]@,$[6.0812305]@
$[0.82782038]@,$[0.61807444]@,$[1.1859591]@,$[0.47119489]@,$[4.4979893]@
$[1.5821979]@,$[0.92346463]@,$[0.93828637]@,$[0.93338865]@,$[12.678219]@
$[1.1429113]@,$[1.5752315]@,$[1.0590173]@,$[1.6268082]@,$[83.185092]@
$[1.8834507]@,$[1.8014038]@,$[1.3843927]@,$[0.64083326]@,$[28.571534]@
$[0.90979552]@,$[1.5846499]@,$[1.0031842]@,$[1.2196534]@,$[43.272166]@
$[1.3059918]@,$[2.1536114]@,$[1.7920057]@,$[0.78644841]@,$[57.141283]@
$[1.9022984]@,$[2.2434555]@,$[2.4433787]@,$[1.5449704]@,$[233.51003]@
$[1.5715437]@,$[1.6911175]@,$[1.9263976]@,$[2.3015687]@,$[230.76401]@

```

```

BT2022_qiv_22_alldata
$[2.5785699]@,$[2.6008698]@,$[2.3119597]@,$[2.0968909]@,$[646.84845]@
$[1.5374477]@,$[3.107823]@,$[1.3972294]@,$[1.2955392]@,$[375.21344]@
$[1.9960911]@,$[1.9028507]@,$[1.9597072]@,$[3.2324879]@,$[740.72213]@
$[2.2287131]@,$[3.0653023]@,$[1.3194318]@,$[2.8517691]@,$[1753.6075]@
$[2.0599973]@,$[2.1194227]@,$[1.6387404]@,$[1.6671817]@,$[213.42438]@

```

ME18B108

alpha = 0.12204708

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X1 X4 X2 X4 + beta_2 X2 X1 X2 X2 X1 + beta_3 X3 X1 X2 X1 X3
+ beta_4 X4 X2 X2 X2 X1

PARAMATER FOR POPULATION RANGE: beta_3

DATA COLUMNS X1 X2 X3 X4 Y

```

$[0]@,$[0]@,$[0]@,$[0]@,$[-2.7560732]@
$[0.16304806]@,$[0.11882585]@,$[0.097106267]@,$[0.16776346]@,$[-2.448059]@
$[0.32703895]@,$[0.22695534]@,$[0.39138798]@,$[0.27643258]@,$[-1.0850344]@
$[0.5838057]@,$[0.15482823]@,$[0.36987767]@,$[0.20046184]@,$[-1.1964652]@
$[0.6454916]@,$[0.78892427]@,$[0.54934489]@,$[0.56283301]@,$[1.0231445]@
$[0.72099475]@,$[0.43560407]@,$[0.32148818]@,$[0.40065269]@,$[-2.8361625]@
$[1.133724]@,$[0.47576055]@,$[0.49276671]@,$[0.565419]@,$[0.053430637]@
$[0.97453894]@,$[0.41227631]@,$[0.89934184]@,$[1.1476981]@,$[2.978021]@
$[0.61655814]@,$[1.1761936]@,$[1.479316]@,$[1.1161532]@,$[5.8628892]@
$[0.59417577]@,$[0.96225026]@,$[0.59840365]@,$[0.50244613]@,$[0.78003972]@
$[1.433709]@,$[0.82974433]@,$[0.91700926]@,$[1.0116478]@,$[15.502694]@
$[1.2559672]@,$[1.5115501]@,$[1.0575338]@,$[1.0707481]@,$[42.16175]@
$[1.4382603]@,$[2.2761576]@,$[1.4635947]@,$[2.1703887]@,$[241.04399]@
$[0.80832041]@,$[2.5477617]@,$[2.2917535]@,$[2.1980855]@,$[113.80876]@
$[1.0274419]@,$[1.1384526]@,$[1.0834844]@,$[1.7550328]@,$[29.571074]@
$[1.0104048]@,$[1.5159043]@,$[2.9796418]@,$[2.7198556]@,$[119.5764]@
$[2.2451243]@,$[1.5932223]@,$[1.5718164]@,$[0.88205033]@,$[172.96749]@
$[3.0645091]@,$[2.5666565]@,$[1.7562243]@,$[3.1300699]@,$[2090.4901]@
$[2.3516768]@,$[2.753291]@,$[3.4510881]@,$[2.8906635]@,$[1713.1573]@
$[2.3649591]@,$[2.5521493]@,$[2.1040403]@,$[2.1820959]@,$[915.81217]@

```

ME18B109

alpha = 0.18296479

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X2 X1 X1 X3 + beta_2 X2 X1 X4 X4 X3 + beta_3 X3 X1 X3 X4 X3
+ beta_4 X4 X2 X1 X2 X2

PARAMATER FOR POPULATION RANGE: beta_1

DATA COLUMNS X1 X2 X3 X4 Y

```

$[0]@,$[0]@,$[0]@,$[0]@,$[3.997448]@
$[0.06049715]@,$[0.1793363]@,$[0.17979005]@,$[0.10710186]@,$[2.8519722]@
$[0.35631517]@,$[0.36899223]@,$[0.2208665]@,$[0.36460279]@,$[3.3266322]@
$[0.49889256]@,$[0.27855557]@,$[0.47922354]@,$[0.32505129]@,$[3.6405761]@
$[0.70286068]@,$[0.6619505]@,$[0.72362087]@,$[0.34709109]@,$[5.3202335]@

```

BT2022_qiv_22_alldata

\$[0.76484805]@,\$[0.35450614]@,\$[0.41541275]@,\$[0.50727022]@,\$[4.3105303]@
 \$[0.79342891]@,\$[0.82387143]@,\$[0.54408376]@,\$[1.142495]@,\$[8.6006282]@
 \$[0.85581443]@,\$[1.3787163]@,\$[1.369948]@,\$[0.7705559]@,\$[17.296105]@
 \$[1.2448224]@,\$[1.5934915]@,\$[0.92543702]@,\$[0.42570249]@,\$[11.517158]@
 \$[1.0526686]@,\$[0.84488323]@,\$[1.6261328]@,\$[1.1668416]@,\$[32.066438]@
 \$[0.69344648]@,\$[1.0717731]@,\$[1.84116]@,\$[0.64101137]@,\$[15.936956]@
 \$[1.2267173]@,\$[1.2148786]@,\$[1.2612051]@,\$[0.78298588]@,\$[19.644782]@
 \$[1.4279804]@,\$[1.3142054]@,\$[1.942183]@,\$[2.3015959]@,\$[209.03759]@
 \$[1.399311]@,\$[1.9278589]@,\$[0.99631472]@,\$[2.4348661]@,\$[175.09656]@
 \$[1.1853431]@,\$[1.3068801]@,\$[2.5215063]@,\$[2.6703381]@,\$[343.70012]@
 \$[1.545344]@,\$[2.1822654]@,\$[1.753309]@,\$[1.3457183]@,\$[151.74263]@
 \$[0.94392462]@,\$[3.0148387]@,\$[3.1072775]@,\$[1.5689212]@,\$[386.54497]@
 \$[1.0227262]@,\$[2.2314309]@,\$[2.0287954]@,\$[1.2424754]@,\$[115.45944]@
 \$[3.0908214]@,\$[2.957041]@,\$[1.6701391]@,\$[1.0491752]@,\$[229.50361]@
 \$[2.8417124]@,\$[1.9175006]@,\$[2.1692938]@,\$[2.4339308]@,\$[673.23638]@

ME18B112

alpha = 0.14910466

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X2 X1 X3 X4 + beta_2 X2 X1 X4 X1 X2 + beta_3 X3 X2 X3 X1 X1
 + beta_4 X4 X2 X4 X2 X4

PARAMATER FOR POPULATION RANGE: beta_3

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[2.3207531]@
 \$[0.13797614]@,\$[0.053710398]@,\$[0.12431314]@,\$[0.14684464]@,\$[1.4030807]@
 \$[0.30895596]@,\$[0.18997167]@,\$[0.16052599]@,\$[0.34008604]@,\$[2.6809159]@
 \$[0.15389063]@,\$[0.17107183]@,\$[0.20095947]@,\$[0.54770459]@,\$[3.8615764]@
 \$[0.34383292]@,\$[0.27642068]@,\$[0.3055396]@,\$[0.67064044]@,\$[-0.13145805]@
 \$[0.38556199]@,\$[0.30416884]@,\$[0.32773922]@,\$[0.55354688]@,\$[0.018071907]@
 \$[0.78729271]@,\$[0.42554857]@,\$[0.75147197]@,\$[0.76909226]@,\$[3.741081]@
 \$[0.89173122]@,\$[1.0533641]@,\$[1.3877511]@,\$[0.64515338]@,\$[3.0604688]@
 \$[0.77227459]@,\$[1.4908328]@,\$[0.51124211]@,\$[1.2412986]@,\$[9.4254466]@
 \$[1.287907]@,\$[1.2286851]@,\$[0.51115157]@,\$[0.6123074]@,\$[-0.12068312]@
 \$[1.3707355]@,\$[1.1298955]@,\$[1.0794794]@,\$[0.85819403]@,\$[1.3094383]@
 \$[0.8605572]@,\$[0.83170117]@,\$[1.8114085]@,\$[1.8830862]@,\$[14.486735]@
 \$[1.6060455]@,\$[1.8340045]@,\$[2.1948603]@,\$[0.63937653]@,\$[-5.6884773]@
 \$[1.5100875]@,\$[1.3868692]@,\$[2.5264677]@,\$[0.66604529]@,\$[-3.0002576]@
 \$[1.8112368]@,\$[1.4810004]@,\$[1.2129537]@,\$[1.2959947]@,\$[1.5712914]@
 \$[2.2862312]@,\$[1.4279693]@,\$[1.3786214]@,\$[1.4873715]@,\$[-1.256984]@
 \$[1.4267322]@,\$[2.4914782]@,\$[1.6505945]@,\$[1.6615955]@,\$[47.243489]@
 \$[2.3788979]@,\$[1.5909628]@,\$[2.8886305]@,\$[2.3077133]@,\$[66.912975]@
 \$[0.99606564]@,\$[3.1016743]@,\$[1.2691408]@,\$[1.1248116]@,\$[19.8462]@
 \$[3.4163835]@,\$[2.8549584]@,\$[1.8360669]@,\$[2.0557179]@,\$[-136.45787]@

ME18B122

alpha = 0.067671601

BT2022_qiv_22_alldata

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X4 X3 X4 X1 + beta_2 X2 X3 X4 X1 X1 + beta_3 X3 X4 X4 X3 X1
+ beta_4 X4 X1 X4 X4 X1

PARAMATER FOR POPULATION RANGE: beta_0

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[0.23570073]@
\$[0.087826715]@,\$[0.084538002]@,\$[0.10042004]@,\$[0.18236615]@,\$[-0.99809821]@
\$[0.20352877]@,\$[0.29111846]@,\$[0.39522124]@,\$[0.23279585]@,\$[1.2725977]@
\$[0.37035673]@,\$[0.44020304]@,\$[0.55954779]@,\$[0.42705706]@,\$[2.8087349]@
\$[0.2445715]@,\$[0.22356063]@,\$[0.651568]@,\$[0.76576578]@,\$[2.344302]@
\$[0.40738798]@,\$[0.64716254]@,\$[0.64435612]@,\$[0.8413464]@,\$[2.3639835]@
\$[0.63179595]@,\$[0.47228156]@,\$[0.52938271]@,\$[0.95702031]@,\$[-0.074735323]@
\$[1.0012855]@,\$[0.56230681]@,\$[0.80260874]@,\$[1.042559]@,\$[1.7711184]@
\$[0.91295384]@,\$[1.2467401]@,\$[0.56799725]@,\$[1.3493482]@,\$[2.4536143]@
\$[0.98304533]@,\$[0.62475709]@,\$[0.86035843]@,\$[1.0608118]@,\$[2.7450041]@
\$[1.9359533]@,\$[0.60380554]@,\$[1.7367177]@,\$[1.2661931]@,\$[27.384544]@
\$[0.64533241]@,\$[2.1664651]@,\$[1.1159788]@,\$[0.84103978]@,\$[4.6998706]@
\$[1.6309462]@,\$[0.83530788]@,\$[2.0235798]@,\$[1.6168365]@,\$[57.331781]@
\$[1.472083]@,\$[0.83902106]@,\$[1.5608451]@,\$[1.7996153]@,\$[32.597059]@
\$[2.6219116]@,\$[1.1231942]@,\$[2.7124225]@,\$[1.2103087]@,\$[100.51604]@
\$[1.1468058]@,\$[2.518251]@,\$[1.6797298]@,\$[1.6840557]@,\$[33.72191]@
\$[3.1466121]@,\$[0.96276857]@,\$[2.4896162]@,\$[1.0171803]@,\$[68.840971]@
\$[3.0586904]@,\$[3.3640885]@,\$[1.3480198]@,\$[1.7649767]@,\$[26.049368]@
\$[0.92340402]@,\$[1.0341974]@,\$[3.2484453]@,\$[1.2339986]@,\$[60.077137]@
\$[2.4759631]@,\$[1.0018331]@,\$[3.5163562]@,\$[2.7212085]@,\$[738.1505]@

ME188123

alpha = 0.088251217

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X1 X4 X4 X2 + beta_2 X2 X1 X3 X1 X2 + beta_3 X3 X1 X4 X1 X4
+ beta_4 X4 X2 X4 X4 X1

PARAMATER FOR POPULATION RANGE: beta_2

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[-1.8375222]@
\$[0.1138831]@,\$[0.09336798]@,\$[0.16848198]@,\$[0.06285659]@,\$[-1.3369866]@
\$[0.2356447]@,\$[0.31577432]@,\$[0.33700216]@,\$[0.16474556]@,\$[-1.2505879]@
\$[0.32333601]@,\$[0.57262486]@,\$[0.36917466]@,\$[0.20395533]@,\$[-1.0034426]@
\$[0.78500449]@,\$[0.66134832]@,\$[0.57862358]@,\$[0.53823033]@,\$[-1.5239025]@
\$[0.7213713]@,\$[0.86673354]@,\$[0.40437502]@,\$[0.85543834]@,\$[0.63294314]@
\$[0.43795716]@,\$[0.94081742]@,\$[1.0996086]@,\$[0.80030928]@,\$[-1.652839]@
\$[1.023215]@,\$[0.52067339]@,\$[0.45444794]@,\$[0.8900127]@,\$[-1.4728966]@
\$[0.55186601]@,\$[0.87209414]@,\$[0.98087154]@,\$[0.9467683]@,\$[0.20063751]@
\$[0.66934156]@,\$[1.4012029]@,\$[1.6115971]@,\$[1.6774168]@,\$[23.573054]@
\$[1.0171566]@,\$[1.5331568]@,\$[0.98457918]@,\$[0.91691902]@,\$[4.3293463]@
\$[1.8834495]@,\$[1.8023752]@,\$[1.2895949]@,\$[0.94025932]@,\$[2.6748669]@
\$[1.6665095]@,\$[0.99373942]@,\$[0.92137932]@,\$[1.0955116]@,\$[6.1707156]@
\$[2.5115003]@,\$[2.4821589]@,\$[1.7956563]@,\$[1.8643897]@,\$[183.4362]@

```

BT2022_qiv_22_alldata
$[2.0987462]@,$[1.3851927]@,$[1.1090196]@,$[1.6584303]@,$[65.30659]@
$[2.5111373]@,$[0.95321586]@,$[2.2111816]@,$[1.5673774]@,$[-33.119585]@
$[1.7151242]@,$[2.6090024]@,$[2.9808239]@,$[3.1977675]@,$[766.79242]@
$[1.3167566]@,$[2.4111723]@,$[2.9185612]@,$[1.8921025]@,$[86.9689]@
$[3.0392753]@,$[2.5311393]@,$[1.0827832]@,$[2.6025427]@,$[900.43789]@
$[2.7797985]@,$[2.6338443]@,$[2.7421296]@,$[2.4925795]@,$[441.43095]@

```

ME18B126

alpha = 0.17410992

MLR FIT FUNCTION

$$Y = \beta_0 + \beta_1 X_1 X_1 X_2 X_4 X_1 + \beta_2 X_2 X_1 X_2 X_1 X_4 + \beta_3 X_3 X_2 X_4 X_1 X_4 + \beta_4 X_4 X_1 X_3 X_2 X_3$$

PARAMATER FOR POPULATION RANGE: beta_0

DATA COLUMNS X1 X2 X3 X4 Y

```

$[0]@,$[0]@,$[0]@,$[0]@,$[3.0357823]@
$[0.099807726]@,$[0.19103553]@,$[0.088368311]@,$[0.12500302]@,$[3.1496946]@
$[0.30567298]@,$[0.29442257]@,$[0.12206865]@,$[0.35989117]@,$[6.03384]@
$[0.23151625]@,$[0.34830385]@,$[0.37118088]@,$[0.36534757]@,$[4.5271266]@
$[0.28130676]@,$[0.4961913]@,$[0.49502652]@,$[0.6621262]@,$[3.9906516]@
$[0.96373658]@,$[0.60371609]@,$[0.88941691]@,$[0.75246101]@,$[8.0510689]@
$[0.92369509]@,$[1.0272029]@,$[0.42930134]@,$[0.4806687]@,$[5.8050256]@
$[0.4782839]@,$[0.63169707]@,$[0.79214603]@,$[1.158243]@,$[5.305042]@
$[1.3638526]@,$[0.73564433]@,$[0.73343055]@,$[1.1030613]@,$[11.108538]@
$[1.4576523]@,$[0.68181825]@,$[1.7400571]@,$[1.672965]@,$[20.591282]@
$[1.6121186]@,$[0.50548179]@,$[0.84825328]@,$[1.7631535]@,$[13.973607]@
$[1.7756811]@,$[0.74110043]@,$[0.88817602]@,$[1.8155687]@,$[28.608982]@
$[1.6289724]@,$[2.0867611]@,$[1.9874693]@,$[0.7582903]@,$[47.362925]@
$[1.1511303]@,$[0.71069993]@,$[1.3949983]@,$[2.0418011]@,$[16.710805]@
$[1.5392795]@,$[0.78353857]@,$[2.2501853]@,$[2.519451]@,$[42.445913]@
$[1.0278911]@,$[2.9485843]@,$[1.6481112]@,$[2.6624682]@,$[103.44411]@
$[2.3842221]@,$[1.4047035]@,$[1.1003723]@,$[1.5618749]@,$[107.44266]@
$[3.1956875]@,$[2.4966224]@,$[1.8472635]@,$[1.395314]@,$[460.42561]@
$[1.0464275]@,$[1.5888826]@,$[0.97281009]@,$[1.7571824]@,$[25.737724]@
$[1.5141869]@,$[2.9791407]@,$[1.3935256]@,$[2.7708738]@,$[222.21111]@

```

ME18B129

alpha = 0.17675621

MLR FIT FUNCTION

$$Y = \beta_0 + \beta_1 X_1 X_3 X_1 X_2 X_3 + \beta_2 X_2 X_2 X_4 X_4 X_4 + \beta_3 X_3 X_2 X_1 X_3 X_2 + \beta_4 X_4 X_2 X_2 X_3 X_2$$

PARAMATER FOR POPULATION RANGE: beta_0

DATA COLUMNS X1 X2 X3 X4 Y

```

$[0]@,$[0]@,$[0]@,$[0]@,$[6.3923306]@
$[0.18127214]@,$[0.18412944]@,$[0.10256942]@,$[0.061867984]@,$[6.9488728]@
$[0.13493419]@,$[0.15139811]@,$[0.31511581]@,$[0.13984477]@,$[6.5349838]@
$[0.38390525]@,$[0.55344645]@,$[0.23449858]@,$[0.22950613]@,$[5.9032691]@

```

BT2022_qiv_22_alldata

$\$[0.25329589]@, \$[0.23179057]@, \$[0.76981579]@, \$[0.3758698]@, \$[7.6816968]@$
 $\$[0.42977953]@, \$[0.32870998]@, \$[0.33590481]@, \$[0.36096538]@, \$[6.5647709]@$
 $\$[0.79535265]@, \$[0.61576951]@, \$[1.0282226]@, \$[0.69167399]@, \$[6.8642051]@$
 $\$[1.0115935]@, \$[0.73622201]@, \$[1.2597574]@, \$[1.1011162]@, \$[9.4403933]@$
 $\$[1.3508076]@, \$[0.71173462]@, \$[1.2436889]@, \$[0.65694295]@, \$[6.8541922]@$
 $\$[1.2158886]@, \$[1.3138646]@, \$[0.87457202]@, \$[1.370838]@, \$[16.447526]@$
 $\$[1.1518867]@, \$[0.77789519]@, \$[0.82732605]@, \$[1.0598205]@, \$[9.3830047]@$
 $\$[1.1952054]@, \$[1.1401997]@, \$[1.5866636]@, \$[1.831365]@, \$[27.517156]@$
 $\$[0.85720202]@, \$[0.91191106]@, \$[1.1468603]@, \$[1.0205639]@, \$[10.095354]@$
 $\$[0.97427399]@, \$[0.74783989]@, \$[1.3301769]@, \$[1.4342428]@, \$[10.056063]@$
 $\$[1.9186337]@, \$[2.5207029]@, \$[1.1912162]@, \$[1.064565]@, \$[68.382562]@$
 $\$[2.3786592]@, \$[0.96878129]@, \$[1.0995142]@, \$[0.90339954]@, \$[16.287315]@$
 $\$[2.6921482]@, \$[2.473377]@, \$[2.3107788]@, \$[1.3093475]@, \$[147.21399]@$
 $\$[3.386762]@, \$[1.1445891]@, \$[1.0725887]@, \$[2.9732136]@, \$[70.486581]@$
 $\$[2.6221213]@, \$[2.7588482]@, \$[1.440248]@, \$[3.0256861]@, \$[485.8291]@$
 $\$[3.6029678]@, \$[2.2577509]@, \$[2.5789928]@, \$[3.4633399]@, \$[628.50581]@$

ME18B134

alpha = 0.12224916

MLR FIT FUNCTION

$Y = \beta_0 + \beta_1 X_1 X_1 X_3 X_3 X_1 + \beta_2 X_2 X_4 X_3 X_2 X_3 + \beta_3 X_3 X_3 X_2 X_4 X_2$
 $+ \beta_4 X_4 X_4 X_4 X_1 X_4$
 PARAMATER FOR POPULATION RANGE: beta_4
 DATA COLUMNS X1 X2 X3 X4 Y
 $\$[0]@, \$[0]@, \$[0]@, \$[0]@, \$[1.5794569]@$
 $\$[0.17287424]@, \$[0.18330971]@, \$[0.10146201]@, \$[0.10112062]@, \$[-1.0720527]@$
 $\$[0.12387234]@, \$[0.25459361]@, \$[0.31428667]@, \$[0.26079551]@, \$[-0.41424449]@$
 $\$[0.21238269]@, \$[0.38188817]@, \$[0.56404386]@, \$[0.39293209]@, \$[0.19238342]@$
 $\$[0.22031244]@, \$[0.61432182]@, \$[0.69270684]@, \$[0.20145456]@, \$[-0.019534197]@$
 $\$[0.7755073]@, \$[0.79557938]@, \$[0.38330323]@, \$[0.80686619]@, \$[0.24648747]@$
 $\$[0.41524188]@, \$[0.37907874]@, \$[0.93687451]@, \$[0.59322359]@, \$[0.94218167]@$
 $\$[1.0643595]@, \$[0.48968871]@, \$[1.2853684]@, \$[0.80446476]@, \$[6.0398589]@$
 $\$[0.66651888]@, \$[0.72827727]@, \$[0.79478868]@, \$[1.3896818]@, \$[3.902643]@$
 $\$[1.6166484]@, \$[1.6972911]@, \$[1.4911244]@, \$[1.4395113]@, \$[46.773741]@$
 $\$[0.74991884]@, \$[1.5955964]@, \$[1.8534614]@, \$[0.79300305]@, \$[22.380288]@$
 $\$[1.1939581]@, \$[1.4442415]@, \$[1.1146349]@, \$[2.1838238]@, \$[34.465094]@$
 $\$[0.69893298]@, \$[2.088272]@, \$[2.3166944]@, \$[1.5150143]@, \$[94.11283]@$
 $\$[1.3603051]@, \$[1.7490939]@, \$[1.2445422]@, \$[2.0567001]@, \$[47.2828]@$
 $\$[2.4859498]@, \$[2.5062565]@, \$[0.83022788]@, \$[1.5784126]@, \$[49.135792]@$
 $\$[2.5683403]@, \$[1.3331466]@, \$[1.4588644]@, \$[2.2557986]@, \$[137.97613]@$
 $\$[1.8746147]@, \$[1.2273766]@, \$[3.0763642]@, \$[2.0374186]@, \$[223.19827]@$
 $\$[2.9360107]@, \$[1.8102855]@, \$[0.92358435]@, \$[2.3197049]@, \$[113.09833]@$
 $\$[1.0058894]@, \$[3.4562291]@, \$[3.5420492]@, \$[1.5867563]@, \$[622.22543]@$
 $\$[1.8356212]@, \$[1.8541303]@, \$[3.2765986]@, \$[1.0935528]@, \$[241.50478]@$

ME18B136

BT2022_qiv_22_alldata

```

alpha = 0.11425101
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X3 X2 X1 X1 + beta_2 X2 X3 X3 X4 X4 + beta_3 X3 X2 X1 X4 X3
+ beta_4 X4 X3 X1 X3 X1
PARAMATER FOR POPULATION RANGE: beta_4
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@[3.6011197]@
$[0.068521111]@,$[0.12676964]@,$[0.089517647]@,$[0.17737429]@,$[3.2014974]@
$[0.38568634]@,$[0.39720127]@,$[0.16547476]@,$[0.14659983]@,$[2.8295875]@
$[0.29465984]@,$[0.17731334]@,$[0.31690659]@,$[0.42041792]@,$[3.156856]@
$[0.74456507]@,$[0.2350502]@,$[0.24090668]@,$[0.3253872]@,$[3.7600513]@
$[0.81689206]@,$[0.9829025]@,$[0.98160338]@,$[0.75049252]@,$[9.9513051]@
$[1.1755134]@,$[0.41030441]@,$[0.83333262]@,$[0.87482992]@,$[7.9918415]@
$[1.1339168]@,$[0.38480733]@,$[0.55735576]@,$[1.0183983]@,$[6.7526912]@
$[1.2922772]@,$[1.500808]@,$[1.2774927]@,$[1.5460837]@,$[54.157085]@
$[1.336881]@,$[0.83366365]@,$[1.3672576]@,$[1.1117312]@,$[28.926112]@
$[1.6022373]@,$[1.6891853]@,$[0.88051015]@,$[0.97726954]@,$[37.82941]@
$[0.59211596]@,$[1.9151985]@,$[1.8849482]@,$[1.480853]@,$[56.526089]@
$[1.6500466]@,$[2.3540143]@,$[0.77870269]@,$[2.2840276]@,$[72.960458]@
$[2.317624]@,$[1.066324]@,$[2.2443862]@,$[1.2014307]@,$[209.86867]@
$[0.71084868]@,$[2.1341033]@,$[1.9390749]@,$[1.0360168]@,$[51.69045]@
$[2.8553251]@,$[1.2231265]@,$[1.7613883]@,$[1.8234081]@,$[320.71614]@
$[2.4667802]@,$[3.096959]@,$[2.0444235]@,$[1.8997439]@,$[748.14871]@
$[1.2422457]@,$[3.1746771]@,$[3.0530927]@,$[2.3766358]@,$[747.5797]@
$[1.897695]@,$[1.5695616]@,$[1.0270415]@,$[3.2333712]@,$[124.25205]@
$[2.9826008]@,$[0.98669922]@,$[3.2667308]@,$[2.1632534]@,$[771.96091]@

```

ME18B137

```

alpha = 0.13402907
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X3 X2 X4 + beta_2 X2 X4 X4 X3 X3 + beta_3 X3 X3 X1 X4 X4
+ beta_4 X4 X1 X1 X3 X2
PARAMATER FOR POPULATION RANGE: beta_4
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@[7.0295961]@
$[0.14917262]@,$[0.052457077]@,$[0.063350317]@,$[0.097797869]@,$[5.5073821]@
$[0.17254122]@,$[0.29921304]@,$[0.11961115]@,$[0.22172807]@,$[4.9017359]@
$[0.35700724]@,$[0.53535688]@,$[0.48319218]@,$[0.170195]@,$[5.4982658]@
$[0.46992112]@,$[0.51599197]@,$[0.59587895]@,$[0.77354125]@,$[5.9017567]@
$[0.83997161]@,$[0.4707474]@,$[0.97760748]@,$[0.50650478]@,$[6.3048316]@
$[0.8273767]@,$[0.83718715]@,$[0.99216245]@,$[0.39972169]@,$[4.5196524]@
$[0.79040229]@,$[0.92162485]@,$[0.48359992]@,$[1.1822289]@,$[6.4283777]@
$[0.71327436]@,$[1.4985165]@,$[1.069728]@,$[1.5102627]@,$[14.449614]@
$[0.67509413]@,$[1.0178325]@,$[1.4359922]@,$[1.1663336]@,$[14.978815]@
$[1.4167546]@,$[1.1681267]@,$[0.73103612]@,$[0.97331719]@,$[7.8166085]@
$[1.1311207]@,$[0.98044155]@,$[0.86359763]@,$[1.1909017]@,$[11.052082]@
$[1.5162625]@,$[1.0969252]@,$[1.2583877]@,$[2.393859]@,$[68.658638]@

```

```

BT2022_qiv_22_alldata
$[1.5107682]@,$[0.65286909]@,$[2.0836751]@,$[1.9126052]@,$[127.49199]@
$[0.98953011]@,$[1.6976858]@,$[2.3815364]@,$[1.7613536]@,$[100.18401]@
$[2.5579584]@,$[0.77948362]@,$[1.050341]@,$[1.439668]@,$[31.793509]@
$[3.1276384]@,$[1.8064773]@,$[2.3017043]@,$[1.5210189]@,$[188.97935]@
$[1.8103922]@,$[2.6541254]@,$[1.2489569]@,$[2.7932983]@,$[97.9641]@
$[3.2674106]@,$[3.3934388]@,$[2.2934151]@,$[1.9833793]@,$[256.31022]@
$[2.4948296]@,$[3.4606887]@,$[2.4520196]@,$[2.3748304]@,$[383.62902]@

```

ME18B139

```

alpha = 0.054842937
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X2 X2 X4 X2 + beta_2 X2 X2 X2 X3 X4 + beta_3 X3 X4 X1 X1 X2
+ beta_4 X4 X1 X4 X3 X4
PARAMATER FOR POPULATION RANGE: beta_2
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@[4.886335]@
$[0.11887091]@,$[0.16433484]@,$[0.16015471]@,$[0.12744812]@,$[3.1794913]@
$[0.17832829]@,$[0.28730982]@,$[0.36973455]@,$[0.12095735]@,$[2.7272661]@
$[0.36241363]@,$[0.41561776]@,$[0.34555114]@,$[0.4813148]@,$[2.7002865]@
$[0.35659327]@,$[0.28386438]@,$[0.48877531]@,$[0.7405941]@,$[4.455791]@
$[0.48501335]@,$[0.45472792]@,$[0.52654862]@,$[0.42784738]@,$[2.6761125]@
$[0.46164706]@,$[0.40849416]@,$[1.0646861]@,$[0.97275207]@,$[5.3732004]@
$[1.0044746]@,$[0.99229913]@,$[0.37297857]@,$[0.91978626]@,$[7.5506613]@
$[1.0495728]@,$[0.56021838]@,$[0.78562373]@,$[1.5869286]@,$[5.8372474]@
$[0.50110302]@,$[1.05931]@,$[1.1513929]@,$[0.64619346]@,$[11.115526]@
$[1.5634282]@,$[1.2340957]@,$[1.3704354]@,$[0.73315416]@,$[18.734816]@
$[1.6710947]@,$[0.94016363]@,$[0.96951081]@,$[0.83793797]@,$[10.795691]@
$[1.1138257]@,$[1.6247645]@,$[1.9745131]@,$[2.0351604]@,$[106.88644]@
$[1.7168196]@,$[1.8951447]@,$[1.3419729]@,$[1.6393301]@,$[128.48192]@
$[1.8824993]@,$[2.0551745]@,$[2.4327273]@,$[1.6087447]@,$[237.83153]@
$[2.9381198]@,$[2.8109667]@,$[1.2768743]@,$[1.4369457]@,$[479.93213]@
$[2.6540021]@,$[1.7253525]@,$[2.2579187]@,$[1.2162081]@,$[132.2634]@
$[1.1051652]@,$[2.1909841]@,$[3.0678585]@,$[1.3367242]@,$[231.70325]@
$[1.7026147]@,$[1.2152521]@,$[2.7445111]@,$[1.236794]@,$[46.771235]@
$[1.2684081]@,$[2.4881357]@,$[2.6355014]@,$[2.9366251]@,$[671.68159]@

```

ME18B140

```

alpha = 0.10697968
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X1 X3 X2 X1 + beta_2 X2 X3 X4 X3 X1 + beta_3 X3 X2 X1 X4 X1
+ beta_4 X4 X3 X2 X4 X4
PARAMATER FOR POPULATION RANGE: beta_1
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@[5.2869304]@
$[0.17665697]@,$[0.10845388]@,$[0.10815192]@,$[0.084308176]@,$[4.4824978]@
$[0.2558434]@,$[0.12815934]@,$[0.34203573]@,$[0.32303161]@,$[4.2967659]@

```

BT2022_qiv_22_alldata

$\$[0.49584247]@, \$[0.40315991]@, \$[0.15965562]@, \$[0.28618141]@, \$[3.4452228]@$
 $\$[0.25994465]@, \$[0.3506936]@, \$[0.21408078]@, \$[0.35769571]@, \$[5.4217838]@$
 $\$[0.77974564]@, \$[0.95519366]@, \$[0.93935687]@, \$[0.39721037]@, \$[5.9055951]@$
 $\$[1.1158404]@, \$[0.53669104]@, \$[1.1593409]@, \$[0.31759119]@, \$[5.8762766]@$
 $\$[0.94647229]@, \$[1.2994401]@, \$[0.53148816]@, \$[1.123103]@, \$[8.016413]@$
 $\$[1.5170922]@, \$[1.1092123]@, \$[0.41631118]@, \$[1.3932011]@, \$[9.8751532]@$
 $\$[0.84311404]@, \$[0.85627731]@, \$[0.49860872]@, \$[1.3661147]@, \$[9.7413834]@$
 $\$[0.59423568]@, \$[0.56038929]@, \$[0.92815666]@, \$[1.4250607]@, \$[12.614496]@$
 $\$[0.56405938]@, \$[2.1369542]@, \$[0.60010399]@, \$[0.68340931]@, \$[7.7683908]@$
 $\$[2.3470392]@, \$[1.3185196]@, \$[1.9916981]@, \$[1.0437842]@, \$[38.869504]@$
 $\$[2.2097141]@, \$[2.2091856]@, \$[2.05579]@, \$[1.8295214]@, \$[195.92399]@$
 $\$[1.9989132]@, \$[2.4083462]@, \$[0.99630799]@, \$[2.1338402]@, \$[117.22798]@$
 $\$[1.2881248]@, \$[2.3417448]@, \$[2.0358528]@, \$[2.898361]@, \$[432.45814]@$
 $\$[1.880765]@, \$[2.1655048]@, \$[3.1699342]@, \$[2.8615609]@, \$[766.24199]@$
 $\$[1.4664161]@, \$[2.834951]@, \$[1.8167076]@, \$[1.0266947]@, \$[56.601109]@$
 $\$[2.255531]@, \$[2.4202083]@, \$[2.525042]@, \$[1.6977012]@, \$[250.80943]@$
 $\$[3.2079091]@, \$[0.99540965]@, \$[1.5724506]@, \$[3.2989402]@, \$[283.67804]@$

ME18B143

alpha = 0.11682157

MLR FIT FUNCTION

$Y = \beta_0 + \beta_1 X_1 X_3 X_3 X_2 X_1 + \beta_2 X_2 X_2 X_3 X_3 X_2 + \beta_3 X_3 X_3 X_4 X_3 X_2$
 $+ \beta_4 X_4 X_1 X_2 X_3 X_4$

PARAMATER FOR POPULATION RANGE: beta_2

DATA COLUMNS X1 X2 X3 X4 Y

$\$[0]@, \$[0]@, \$[0]@, \$[0]@, \$[5.3391643]@$
 $\$[0.11430294]@, \$[0.062526498]@, \$[0.16552727]@, \$[0.06809539]@, \$[5.0802278]@$
 $\$[0.27686155]@, \$[0.25343768]@, \$[0.12867387]@, \$[0.27637251]@, \$[3.4824689]@$
 $\$[0.35496857]@, \$[0.2552045]@, \$[0.55736273]@, \$[0.49905686]@, \$[4.5678359]@$
 $\$[0.28672134]@, \$[0.37616085]@, \$[0.78390234]@, \$[0.44224126]@, \$[4.3401805]@$
 $\$[0.27579597]@, \$[0.70814413]@, \$[0.68582107]@, \$[0.27625037]@, \$[4.6193249]@$
 $\$[0.98940628]@, \$[0.41368972]@, \$[1.0913065]@, \$[0.68842623]@, \$[9.9278596]@$
 $\$[0.91370913]@, \$[0.46424781]@, \$[0.71366389]@, \$[1.1878198]@, \$[7.5651453]@$
 $\$[1.0307841]@, \$[0.81581815]@, \$[1.294948]@, \$[0.93931868]@, \$[26.801925]@$
 $\$[0.59897971]@, \$[1.0401301]@, \$[1.1494905]@, \$[0.61520669]@, \$[16.861669]@$
 $\$[1.5297702]@, \$[0.55117516]@, \$[1.5386505]@, \$[1.8874646]@, \$[56.945672]@$
 $\$[1.4852445]@, \$[1.3695062]@, \$[1.3941651]@, \$[1.0533881]@, \$[74.003421]@$
 $\$[0.85535992]@, \$[0.94884354]@, \$[1.3288384]@, \$[0.91622687]@, \$[29.016063]@$
 $\$[0.91405069]@, \$[2.594097]@, \$[1.1263857]@, \$[0.82494595]@, \$[77.834198]@$
 $\$[1.0599578]@, \$[0.80480081]@, \$[1.1031903]@, \$[1.4724354]@, \$[27.164474]@$
 $\$[2.3164239]@, \$[2.4625986]@, \$[2.9975902]@, \$[1.2318256]@, \$[1386.9633]@$
 $\$[1.7787047]@, \$[3.1589244]@, \$[0.95691962]@, \$[2.102352]@, \$[210.82114]@$
 $\$[2.6124174]@, \$[1.8350366]@, \$[2.5892295]@, \$[1.9687576]@, \$[1021.2374]@$
 $\$[2.5775251]@, \$[1.4457185]@, \$[3.0274642]@, \$[0.97719654]@, \$[765.35608]@$
 $\$[2.0256982]@, \$[3.3867001]@, \$[3.3194861]@, \$[3.5529272]@, \$[4902.5149]@$

BT2022_qiv_22_alldata

ME18B151
alpha = 0.097508811
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X3 X1 X1 X1 + beta_2 X2 X1 X1 X4 X4 + beta_3 X3 X1 X3 X1 X2
+ beta_4 X4 X2 X2 X1 X4
PARAMATER FOR POPULATION RANGE: beta_2
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@[3.0997666]@
\$[0.16046852]@,\$[0.0783212]@,\$[0.11279941]@,\$[0.14534065]@,\$[3.6818122]@
\$[0.13193286]@,\$[0.21590104]@,\$[0.19378107]@,\$[0.25793264]@,\$[3.1125836]@
\$[0.26334695]@,\$[0.3250707]@,\$[0.56297173]@,\$[0.39522505]@,\$[3.4440338]@
\$[0.40432734]@,\$[0.71920326]@,\$[0.32101338]@,\$[0.25543023]@,\$[3.8882533]@
\$[0.70533515]@,\$[0.56831074]@,\$[0.38584831]@,\$[0.52504323]@,\$[6.5414861]@
\$[1.1986152]@,\$[0.830238]@,\$[1.0830701]@,\$[0.59950166]@,\$[19.963459]@
\$[0.84340877]@,\$[1.0655727]@,\$[1.3208324]@,\$[0.47967966]@,\$[13.541348]@
\$[1.0176988]@,\$[0.44856648]@,\$[0.5052131]@,\$[1.2826474]@,\$[7.7281719]@
\$[1.3832173]@,\$[0.60324037]@,\$[1.3833734]@,\$[0.77736929]@,\$[28.40205]@
\$[1.7595847]@,\$[1.1923216]@,\$[0.90197338]@,\$[1.7296898]@,\$[79.934066]@
\$[0.66254573]@,\$[1.1613762]@,\$[2.0752562]@,\$[1.4061476]@,\$[27.450413]@
\$[2.1088611]@,\$[1.4663859]@,\$[1.7246682]@,\$[0.94838669]@,\$[221.32545]@
\$[2.5896006]@,\$[2.3921658]@,\$[2.2607586]@,\$[2.5496647]@,\$[1215.7189]@
\$[1.979244]@,\$[1.9210883]@,\$[2.3237881]@,\$[1.9487508]@,\$[472.18011]@
\$[1.0062007]@,\$[1.7249627]@,\$[1.413589]@,\$[2.1792629]@,\$[98.429903]@
\$[2.817131]@,\$[1.3054552]@,\$[1.2916918]@,\$[1.205617]@,\$[329.51339]@
\$[2.6340841]@,\$[2.1668089]@,\$[1.3430895]@,\$[0.91810475]@,\$[365.10173]@
\$[1.1142648]@,\$[1.9637012]@,\$[2.8837357]@,\$[2.3324783]@,\$[253.50792]@
\$[2.0404367]@,\$[1.1048976]@,\$[2.4012334]@,\$[3.364117]@,\$[398.45054]@

ME18B153
alpha = 0.14308996
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X4 X3 X3 X1 + beta_2 X2 X2 X3 X3 X3 + beta_3 X3 X3 X1 X2 X1
+ beta_4 X4 X4 X4 X2 X3
PARAMATER FOR POPULATION RANGE: beta_3
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@[0.97781816]@
\$[0.19912681]@,\$[0.18496381]@,\$[0.054869731]@,\$[0.15461376]@,\$[0.027502703]@
\$[0.23487575]@,\$[0.16757217]@,\$[0.22949857]@,\$[0.36691152]@,\$[2.7480789]@
\$[0.20913807]@,\$[0.45556677]@,\$[0.57750049]@,\$[0.49259937]@,\$[2.4731956]@
\$[0.51467216]@,\$[0.41736918]@,\$[0.34376177]@,\$[0.45884328]@,\$[1.7608709]@
\$[0.42423032]@,\$[0.8150638]@,\$[0.9149564]@,\$[0.62786673]@,\$[4.4749635]@
\$[0.60616222]@,\$[0.63003452]@,\$[0.99744848]@,\$[0.54942119]@,\$[4.7134227]@
\$[1.0596982]@,\$[0.61996941]@,\$[1.3094114]@,\$[0.96065981]@,\$[15.783605]@
\$[0.5526319]@,\$[1.4746637]@,\$[1.3953449]@,\$[0.77904378]@,\$[18.939036]@
\$[0.71590211]@,\$[0.56922812]@,\$[1.1000177]@,\$[0.49386727]@,\$[5.4541252]@
\$[1.3750335]@,\$[1.4677845]@,\$[1.758967]@,\$[1.2394623]@,\$[91.38084]@
\$[0.91137611]@,\$[1.5107304]@,\$[2.1589761]@,\$[1.7001136]@,\$[113.48185]@

```

BT2022_qiv_22_alldata
$[0.60927061]@,$[1.8973285]@,$[2.1287106]@,$[1.2616634]@,$[99.834845]@
$[1.9355079]@,$[1.8733507]@,$[2.3490569]@,$[2.269322]@,$[484.79627]@
$[1.9294978]@,$[1.0399042]@,$[0.75606244]@,$[1.8039849]@,$[31.35831]@
$[2.8110897]@,$[2.1560641]@,$[1.1218464]@,$[2.0866842]@,$[205.28486]@
$[0.86924335]@,$[2.6106363]@,$[2.7103855]@,$[2.675529]@,$[553.74604]@
$[1.2130797]@,$[2.6071392]@,$[1.5550306]@,$[2.3772377]@,$[190.00534]@
$[3.3824931]@,$[1.8676656]@,$[2.1239474]@,$[3.0452454]@,$[1180.37]@
$[1.1897934]@,$[3.6405256]@,$[2.2328928]@,$[3.0774459]@,$[782.76982]@

```

ME18B154

alpha = 0.1865849

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X4 X4 X4 X2 + beta_2 X2 X1 X2 X1 X2 + beta_3 X3 X2 X3 X2 X1
+ beta_4 X4 X4 X2 X3 X4

PARAMATER FOR POPULATION RANGE: beta_4

DATA COLUMNS X1 X2 X3 X4 Y

```

$[0]@,$[0]@,$[0]@,$[0]@,$[-1.7425643]@
$[0.13905093]@,$[0.18180141]@,$[0.10582029]@,$[0.18267113]@,$[-2.7357062]@
$[0.246816]@,$[0.19899352]@,$[0.12252085]@,$[0.3557611]@,$[-1.6366431]@
$[0.56879421]@,$[0.55695778]@,$[0.59746694]@,$[0.30297203]@,$[-1.8604222]@
$[0.56203376]@,$[0.27061466]@,$[0.67958959]@,$[0.60452378]@,$[-1.176886]@
$[0.37194517]@,$[0.98842158]@,$[0.92621995]@,$[0.55940893]@,$[1.6437872]@
$[1.0180554]@,$[0.95442329]@,$[1.1801238]@,$[1.1336269]@,$[16.398606]@
$[0.86841597]@,$[0.64990163]@,$[0.68110671]@,$[0.44228301]@,$[-0.80513603]@
$[0.94790571]@,$[1.599236]@,$[0.86560158]@,$[0.88093398]@,$[15.841793]@
$[1.5130164]@,$[1.2554934]@,$[0.78705273]@,$[1.2912844]@,$[38.117554]@
$[0.57275812]@,$[0.6321619]@,$[0.90363245]@,$[0.79475059]@,$[-0.11931517]@
$[1.8192335]@,$[0.96540664]@,$[0.84147208]@,$[0.64974746]@,$[7.958568]@
$[1.9507532]@,$[0.96314769]@,$[0.78633593]@,$[0.64013496]@,$[6.0342398]@
$[1.9423015]@,$[0.91942576]@,$[1.9878187]@,$[1.6267407]@,$[89.937444]@
$[1.8624372]@,$[1.5623088]@,$[2.5279684]@,$[1.7628749]@,$[245.57968]@
$[1.3077952]@,$[1.7886927]@,$[1.0780109]@,$[2.2532761]@,$[253.44162]@
$[2.0226536]@,$[2.1229575]@,$[2.6438765]@,$[1.6664694]@,$[393.40603]@
$[1.0063439]@,$[2.0150819]@,$[2.1220494]@,$[2.4515493]@,$[404.04047]@
$[1.5947345]@,$[3.5093199]@,$[2.7475182]@,$[2.6210277]@,$[1560.571]@
$[2.9225956]@,$[2.4451576]@,$[3.4809483]@,$[2.6700961]@,$[1958.8067]@

```

ME18B158

alpha = 0.18021079

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X4 X3 X1 X1 + beta_2 X2 X2 X1 X1 X1 + beta_3 X3 X1 X4 X4 X3
+ beta_4 X4 X4 X2 X4

PARAMATER FOR POPULATION RANGE: beta_1

DATA COLUMNS X1 X2 X3 X4 Y

```

$[0]@,$[0]@,$[0]@,$[0]@,$[2.3526152]@
$[0.15733361]@,$[0.078815527]@,$[0.13658426]@,$[0.065779943]@,$[3.8494131]@

```

```

BT2022_qiv_22_alldata
$[0.23090104]@,$[0.15306098]@,$[0.21902291]@,$[0.26770892]@,$[1.6833389]@
$[0.19393402]@,$[0.31415844]@,$[0.59402428]@,$[0.34302436]@,$[2.3340908]@
$[0.25667954]@,$[0.33360718]@,$[0.68953479]@,$[0.69364763]@,$[3.112268]@
$[0.27572578]@,$[0.78409701]@,$[0.84998024]@,$[0.77875823]@,$[1.1673624]@
$[0.47175316]@,$[0.54437133]@,$[1.0965618]@,$[0.96670412]@,$[5.9372034]@
$[1.322488]@,$[0.68831596]@,$[1.1291083]@,$[0.55303195]@,$[17.534877]@
$[0.95782142]@,$[0.71335794]@,$[0.80656543]@,$[1.4233632]@,$[20.118441]@
$[0.95736849]@,$[0.91882699]@,$[0.99456113]@,$[1.5179088]@,$[32.995243]@
$[1.8731497]@,$[1.6810989]@,$[1.867165]@,$[0.53759988]@,$[166.56504]@
$[1.4768792]@,$[1.0388136]@,$[1.2759372]@,$[1.4136814]@,$[85.868828]@
$[1.3236308]@,$[0.88376464]@,$[2.1099517]@,$[2.1476006]@,$[259.70695]@
$[0.67186721]@,$[1.7091069]@,$[2.0123563]@,$[1.3140415]@,$[48.629482]@
$[1.8921813]@,$[0.81895476]@,$[1.2477618]@,$[1.788426]@,$[162.16404]@
$[2.4975742]@,$[2.6403884]@,$[1.7702375]@,$[2.4050055]@,$[1423.2667]@
$[0.93482771]@,$[2.5584971]@,$[1.035937]@,$[1.5245363]@,$[79.927134]@
$[3.0290705]@,$[2.9868834]@,$[1.0468573]@,$[2.5081968]@,$[2299.0396]@
$[3.0058931]@,$[0.9850985]@,$[1.897379]@,$[1.1653098]@,$[499.62889]@
$[2.9258667]@,$[1.5495474]@,$[2.9488839]@,$[1.9914866]@,$[1645.7497]@

```

ME18B159

alpha = 0.088094366

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X3 X4 X3 X1 + beta_2 X2 X4 X2 X2 X3 + beta_3 X3 X3 X3 X1 X2
+ beta_4 X4 X1 X2 X1 X4

PARAMATER FOR POPULATION RANGE: beta_2

DATA COLUMNS X1 X2 X3 X4 Y

```

$[0]@,$[0]@,$[0]@,$[0]@,$[2.1573602]@
$[0.11294398]@,$[0.17235744]@,$[0.1256776]@,$[0.17747647]@,$[0.13080246]@
$[0.18786367]@,$[0.15516062]@,$[0.38052977]@,$[0.24227]@,$[1.8118658]@
$[0.4112119]@,$[0.21646664]@,$[0.58443019]@,$[0.42530649]@,$[2.3404474]@
$[0.76467192]@,$[0.69350043]@,$[0.5200234]@,$[0.51515038]@,$[1.3143359]@
$[0.57643337]@,$[0.41818716]@,$[0.38298752]@,$[0.74703337]@,$[-1.1156294]@
$[0.81367856]@,$[1.0372944]@,$[0.93179387]@,$[0.47874891]@,$[2.9601114]@
$[0.5010629]@,$[1.3331444]@,$[0.69026728]@,$[1.0566367]@,$[3.4397849]@
$[0.52922259]@,$[0.66109756]@,$[0.44065317]@,$[1.5084395]@,$[1.2319925]@
$[1.6543099]@,$[1.3198903]@,$[0.65902847]@,$[0.57172236]@,$[5.5003585]@
$[1.9359551]@,$[1.0089355]@,$[1.711626]@,$[1.9886602]@,$[37.629098]@
$[2.0263935]@,$[1.7373656]@,$[1.9091116]@,$[2.0695864]@,$[107.06405]@
$[1.8803693]@,$[1.1621869]@,$[2.2274108]@,$[2.1693518]@,$[62.995879]@
$[1.3758938]@,$[2.1734991]@,$[1.504565]@,$[2.172839]@,$[92.667894]@
$[1.1965828]@,$[2.7219555]@,$[1.6192841]@,$[2.5813698]@,$[175.6991]@
$[2.9613668]@,$[1.8010613]@,$[1.3543398]@,$[1.9046794]@,$[144.57421]@
$[1.6651392]@,$[1.9544074]@,$[1.6883254]@,$[3.1724624]@,$[176.46937]@
$[1.9299979]@,$[2.7008006]@,$[1.4263777]@,$[2.8395283]@,$[283.05886]@
$[3.5699543]@,$[2.0368823]@,$[3.0652076]@,$[1.5277667]@,$[341.80455]@
$[1.5708801]@,$[3.6780246]@,$[1.9899157]@,$[2.8567242]@,$[561.68174]@

```

BT2022_qiv_22_alldata

ME18B160
alpha = 0.064635377
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X4 X1 X2 X2 + beta_2 X2 X3 X1 X1 X3 + beta_3 X3 X4 X4 X1 X1
+ beta_4 X4 X1 X3 X1 X1
PARAMATER FOR POPULATION RANGE: beta_0
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[0.92741562]@
\$[0.11669145]@,\$[0.15254163]@,\$[0.1913298]@,\$[0.17782946]@,\$[1.0193644]@
\$[0.27316079]@,\$[0.36386172]@,\$[0.16606231]@,\$[0.13187802]@,\$[2.019466]@
\$[0.36336934]@,\$[0.46232586]@,\$[0.59470543]@,\$[0.40837686]@,\$[0.055518154]@
\$[0.66531586]@,\$[0.79766629]@,\$[0.692242]@,\$[0.43326521]@,\$[-0.13076902]@
\$[0.29533877]@,\$[0.7295042]@,\$[0.4873804]@,\$[0.88189175]@,\$[0.88213347]@
\$[0.97892333]@,\$[0.66607713]@,\$[0.88807693]@,\$[0.68160944]@,\$[4.9172484]@
\$[1.3962515]@,\$[0.75710293]@,\$[0.70742576]@,\$[1.3354725]@,\$[20.880811]@
\$[1.1808568]@,\$[0.83519735]@,\$[0.40140778]@,\$[1.3792799]@,\$[10.991282]@
\$[1.0508624]@,\$[0.47093444]@,\$[1.520388]@,\$[1.1879504]@,\$[15.831249]@
\$[1.3372012]@,\$[0.68470052]@,\$[0.65127189]@,\$[1.8045351]@,\$[26.528357]@
\$[1.3568585]@,\$[1.4787644]@,\$[1.2551656]@,\$[1.3706]@,\$[43.013974]@
\$[0.99117515]@,\$[0.67137162]@,\$[1.7033385]@,\$[1.2988264]@,\$[21.532553]@
\$[2.5151304]@,\$[2.1668345]@,\$[1.8526324]@,\$[1.6731766]@,\$[384.29412]@
\$[2.5241364]@,\$[1.9518103]@,\$[1.7863734]@,\$[1.1506265]@,\$[214.47523]@
\$[2.6355924]@,\$[1.9534642]@,\$[1.5569859]@,\$[2.9567913]@,\$[803.6196]@
\$[3.1364266]@,\$[2.7644833]@,\$[1.5055848]@,\$[3.1564286]@,\$[1584.0048]@
\$[1.8800673]@,\$[2.1284358]@,\$[0.92206509]@,\$[1.4282124]@,\$[107.62845]@
\$[2.9558386]@,\$[1.3941742]@,\$[3.5368323]@,\$[1.1473462]@,\$[475.95759]@
\$[3.2044292]@,\$[3.721278]@,\$[2.7288491]@,\$[3.2235659]@,\$[3182.1447]@

ME18B165
alpha = 0.17149953
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X2 X4 X3 X2 + beta_2 X2 X1 X1 X2 X2 + beta_3 X3 X3 X4 X3 X3
+ beta_4 X4 X3 X1 X4 X4
PARAMATER FOR POPULATION RANGE: beta_2
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[0.79446517]@
\$[0.14462586]@,\$[0.11310763]@,\$[0.056893241]@,\$[0.15226908]@,\$[-0.25238874]@
\$[0.33787541]@,\$[0.22497514]@,\$[0.2831423]@,\$[0.30129526]@,\$[-0.11335165]@
\$[0.55044005]@,\$[0.3115236]@,\$[0.4829819]@,\$[0.41350292]@,\$[0.61676848]@
\$[0.24302762]@,\$[0.4286739]@,\$[0.45605435]@,\$[0.55447243]@,\$[0.14055187]@
\$[0.59975111]@,\$[0.86032699]@,\$[0.37800067]@,\$[0.7008835]@,\$[1.9557669]@
\$[0.33130439]@,\$[0.58708956]@,\$[0.72419699]@,\$[0.7938686]@,\$[2.6996492]@
\$[0.67979901]@,\$[0.60001747]@,\$[1.3839006]@,\$[0.40526495]@,\$[4.5074395]@
\$[1.0872814]@,\$[1.1811321]@,\$[0.94675883]@,\$[0.40612569]@,\$[1.9862495]@
\$[1.3871098]@,\$[1.6483075]@,\$[0.7882046]@,\$[1.3383106]@,\$[18.269467]@
\$[1.0976509]@,\$[0.94271729]@,\$[1.4671594]@,\$[0.69114131]@,\$[12.189834]@

BT2022_qiv_22_alldata

\$[0.82675666]@,\$[1.001163]@,\$[0.87847606]@,\$[0.56379264]@,\$[1.7343825]@
 \$[2.1216348]@,\$[1.9105571]@,\$[1.1100858]@,\$[0.96180337]@,\$[31.210026]@
 \$[1.3644438]@,\$[2.0472794]@,\$[1.6281544]@,\$[0.71400089]@,\$[34.482327]@
 \$[1.1545532]@,\$[2.4025704]@,\$[1.0758029]@,\$[0.91174769]@,\$[24.691219]@
 \$[2.3216166]@,\$[1.7119156]@,\$[2.2164956]@,\$[2.6987995]@,\$[425.47261]@
 \$[2.5246685]@,\$[2.3635249]@,\$[1.1090616]@,\$[1.9461925]@,\$[127.07699]@
 \$[3.2225243]@,\$[1.9137896]@,\$[1.8135043]@,\$[0.87275489]@,\$[85.027382]@
 \$[2.3593405]@,\$[2.5013034]@,\$[1.7438558]@,\$[1.0622465]@,\$[112.95446]@
 \$[2.0054858]@,\$[3.3949727]@,\$[2.3984714]@,\$[3.0554079]@,\$[943.24612]@

ME18B167

alpha = 0.069898947

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X3 X3 X4 X2 + beta_2 X2 X1 X2 X1 X1 + beta_3 X3 X2 X3 X2 X1
 + beta_4 X4 X2 X2 X4 X1

PARAMATER FOR POPULATION RANGE: beta_2

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[-0.43955619]@
 \$[0.058982287]@,\$[0.1163191]@,\$[0.082124433]@,\$[0.16926759]@,\$[-2.7337107]@
 \$[0.29188842]@,\$[0.17542353]@,\$[0.12308827]@,\$[0.21297589]@,\$[0.33424377]@
 \$[0.16629268]@,\$[0.44823488]@,\$[0.37726143]@,\$[0.36960213]@,\$[0.05894283]@
 \$[0.72839069]@,\$[0.54751945]@,\$[0.62549529]@,\$[0.46494365]@,\$[1.7524136]@
 \$[0.40121424]@,\$[0.80802249]@,\$[0.94252953]@,\$[0.76803167]@,\$[1.9624505]@
 \$[0.61544167]@,\$[0.57285921]@,\$[0.87865426]@,\$[0.96822259]@,\$[2.4827053]@
 \$[1.1129771]@,\$[0.43746416]@,\$[1.3152403]@,\$[0.9864383]@,\$[4.4023243]@
 \$[1.1876045]@,\$[0.48698674]@,\$[0.61130826]@,\$[1.4892213]@,\$[4.3601845]@
 \$[1.7286461]@,\$[1.5260688]@,\$[0.57260505]@,\$[1.1172439]@,\$[49.645605]@
 \$[1.5401686]@,\$[1.1316764]@,\$[1.519575]@,\$[0.93540491]@,\$[41.951093]@
 \$[0.7211954]@,\$[0.5680055]@,\$[0.84185257]@,\$[0.81709275]@,\$[2.1367225]@
 \$[1.4916658]@,\$[1.7406396]@,\$[1.7105983]@,\$[1.1097264]@,\$[106.13772]@
 \$[1.1370725]@,\$[1.4421059]@,\$[2.1078394]@,\$[1.5640334]@,\$[92.046631]@
 \$[1.618562]@,\$[2.3730969]@,\$[1.5775625]@,\$[1.4753019]@,\$[221.10214]@
 \$[1.7882874]@,\$[1.9479988]@,\$[2.3095337]@,\$[0.843273]@,\$[223.98503]@
 \$[2.2659325]@,\$[2.0140938]@,\$[1.4822892]@,\$[2.0055968]@,\$[341.00728]@
 \$[1.4705379]@,\$[3.1022764]@,\$[2.5821669]@,\$[1.0097342]@,\$[475.79196]@
 \$[1.5836917]@,\$[2.9691926]@,\$[3.2989629]@,\$[0.90720797]@,\$[692.72807]@
 \$[3.4259498]@,\$[2.1371833]@,\$[3.2162608]@,\$[1.1742954]@,\$[1304.3975]@

ME18B174

alpha = 0.062435793

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X1 X4 X4 X2 + beta_2 X2 X4 X4 X3 X3 + beta_3 X3 X4 X4 X1 X4
 + beta_4 X4 X1 X1 X3 X3

PARAMATER FOR POPULATION RANGE: beta_0

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[1.5904918]@

```

BT2022_qiv_22_alldata
$[0.13301085]@,$[0.070631147]@,$[0.078974017]@,$[0.10811222]@,$[0.63615542]@
$[0.34814804]@,$[0.177886]@,$[0.38417864]@,$[0.14033514]@,$[1.5928356]@
$[0.55040145]@,$[0.5951579]@,$[0.31801745]@,$[0.20102218]@,$[1.3058047]@
$[0.74727147]@,$[0.78605683]@,$[0.30269515]@,$[0.70045194]@,$[2.6400715]@
$[0.68282332]@,$[0.49886029]@,$[0.79491637]@,$[0.79391956]@,$[2.3374581]@
$[0.5439418]@,$[0.74888124]@,$[1.1272177]@,$[0.73207125]@,$[0.98266877]@
$[1.2041722]@,$[0.92654204]@,$[1.198298]@,$[1.0283078]@,$[13.246299]@
$[0.73676383]@,$[0.83552868]@,$[0.91209988]@,$[0.84751366]@,$[3.9504518]@
$[1.792552]@,$[0.49521853]@,$[1.6066758]@,$[1.0828954]@,$[25.932483]@
$[1.4619585]@,$[1.3915671]@,$[1.913984]@,$[1.0259283]@,$[28.231856]@
$[1.0179802]@,$[1.2334031]@,$[0.75708166]@,$[1.4041208]@,$[14.948744]@
$[0.66065959]@,$[1.0031978]@,$[1.8311999]@,$[1.1834307]@,$[14.234361]@
$[1.0993664]@,$[1.8660624]@,$[1.1110457]@,$[1.2551417]@,$[20.174862]@
$[0.89752981]@,$[0.8949243]@,$[2.0818918]@,$[1.3706624]@,$[26.991495]@
$[1.3651208]@,$[1.2133601]@,$[1.1783845]@,$[2.4593481]@,$[96.070221]@
$[1.0932679]@,$[1.6045873]@,$[3.1667539]@,$[1.2618841]@,$[66.853545]@
$[2.2604084]@,$[2.9710638]@,$[0.96173746]@,$[1.324809]@,$[82.343081]@
$[1.6275505]@,$[3.2230045]@,$[1.0464509]@,$[2.6459206]@,$[231.5287]@
$[2.294429]@,$[1.0266134]@,$[3.1035433]@,$[3.7969643]@,$[1327.0148]@

```

MM16B102

alpha = 0.16330521

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X1 X2 X1 X2 + beta_2 X2 X3 X3 X4 X4 + beta_3 X3 X2 X1 X4 X1
+ beta_4 X4 X1 X2 X2 X3

PARAMATER FOR POPULATION RANGE: beta_4

DATA COLUMNS X1 X2 X3 X4 Y

```

$[0]@,$[0]@,$[0]@,$[0]@,$[1.6131024]@
$[0.1009766]@,$[0.10754067]@,$[0.063766185]@,$[0.079002573]@,$[0.5413836]@
$[0.37825331]@,$[0.13099933]@,$[0.38597832]@,$[0.34763501]@,$[1.8759687]@
$[0.18336984]@,$[0.5253077]@,$[0.38666905]@,$[0.56071028]@,$[0.74426694]@
$[0.21136364]@,$[0.7865112]@,$[0.38125667]@,$[0.628565]@,$[1.0656318]@
$[0.26314859]@,$[0.9403185]@,$[0.70695412]@,$[0.58921]@,$[4.0548573]@
$[1.1948187]@,$[0.95141772]@,$[0.47714254]@,$[0.70499727]@,$[3.341688]@
$[0.80493129]@,$[1.3725983]@,$[0.81835348]@,$[0.71888411]@,$[5.5874783]@
$[0.56126584]@,$[1.0638225]@,$[0.57727952]@,$[1.454423]@,$[4.4637432]@
$[1.0597366]@,$[1.6604287]@,$[0.82644275]@,$[0.6363537]@,$[3.0780924]@
$[1.2797812]@,$[0.66745193]@,$[1.1871622]@,$[1.3020771]@,$[10.408937]@
$[1.0821758]@,$[0.77188377]@,$[2.1378686]@,$[1.9297756]@,$[47.920259]@
$[2.3347788]@,$[1.5600251]@,$[2.3668893]@,$[1.334145]@,$[68.537534]@
$[1.1301169]@,$[1.8066178]@,$[1.800489]@,$[2.1351127]@,$[107.06169]@
$[2.5979434]@,$[2.6912872]@,$[2.3394507]@,$[0.76406674]@,$[-51.439518]@
$[2.308762]@,$[2.7013095]@,$[2.157565]@,$[1.4127872]@,$[90.420799]@
$[1.3329265]@,$[2.9737994]@,$[1.047127]@,$[1.3832755]@,$[29.07658]@
$[2.0665953]@,$[3.3032359]@,$[1.5567721]@,$[2.4288259]@,$[212.47775]@
$[2.3793645]@,$[3.1030694]@,$[1.7753249]@,$[1.7249407]@,$[90.962173]@
$[1.8876522]@,$[1.0434005]@,$[3.123262]@,$[1.5353918]@,$[100.68762]@

```

BT2022_qiv_22_alldata

MM17B105
alpha = 0.14964601
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X4 X2 X3 X2 + beta_2 X2 X1 X3 X1 X1 + beta_3 X3 X3 X1 X1 X1
+ beta_4 X4 X3 X4 X1 X3
PARAMATER FOR POPULATION RANGE: beta_1
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[2.112452]@
\$[0.095075768]@,\$[0.11288605]@,\$[0.052447206]@,\$[0.13334936]@,\$[2.51325]@
\$[0.17389083]@,\$[0.33198992]@,\$[0.37878262]@,\$[0.26673865]@,\$[2.9616521]@
\$[0.29197462]@,\$[0.24737007]@,\$[0.59958134]@,\$[0.57827519]@,\$[1.5613416]@
\$[0.76082005]@,\$[0.70649159]@,\$[0.3128033]@,\$[0.71266373]@,\$[1.4746556]@
\$[0.61278437]@,\$[0.71943573]@,\$[0.88232097]@,\$[0.32793595]@,\$[0.93686572]@
\$[0.84062169]@,\$[0.88481935]@,\$[0.59216986]@,\$[0.57884593]@,\$[2.0118585]@
\$[0.7499015]@,\$[1.2969256]@,\$[1.0500426]@,\$[1.0946974]@,\$[-0.795115]@
\$[1.5329578]@,\$[1.3312447]@,\$[1.4064876]@,\$[0.97246216]@,\$[16.500716]@
\$[1.3962957]@,\$[0.82019607]@,\$[1.3263223]@,\$[0.71383845]@,\$[12.034817]@
\$[1.7701279]@,\$[1.8074585]@,\$[1.2349702]@,\$[1.2687428]@,\$[8.3960319]@
\$[1.3163897]@,\$[1.3768285]@,\$[0.668625]@,\$[1.4361987]@,\$[1.1629375]@
\$[2.3160265]@,\$[2.3663051]@,\$[0.67836363]@,\$[0.78631777]@,\$[16.682122]@
\$[2.4711331]@,\$[1.7379376]@,\$[2.301415]@,\$[1.3596133]@,\$[168.21946]@
\$[1.5700152]@,\$[0.79203389]@,\$[0.93577908]@,\$[1.3914967]@,\$[11.702117]@
\$[1.2567827]@,\$[0.84230915]@,\$[2.8392075]@,\$[1.1025047]@,\$[45.097523]@
\$[2.6490205]@,\$[3.1926033]@,\$[2.6542321]@,\$[1.1643032]@,\$[167.06334]@
\$[1.5533872]@,\$[1.2661521]@,\$[2.6510846]@,\$[2.9616223]@,\$[167.6248]@
\$[3.4066575]@,\$[1.238709]@,\$[3.0598918]@,\$[1.6687145]@,\$[822.89317]@
\$[3.3675592]@,\$[2.168826]@,\$[3.4784269]@,\$[1.4812078]@,\$[967.25734]@

MM17B106
alpha = 0.12318032
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X2 X3 X1 X1 + beta_2 X2 X3 X1 X1 X4 + beta_3 X3 X4 X3 X3 X2
+ beta_4 X4 X2 X1 X3 X4
PARAMATER FOR POPULATION RANGE: beta_0
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[1.540435]@
\$[0.11893421]@,\$[0.18068652]@,\$[0.057665626]@,\$[0.060783758]@,\$[1.8889271]@
\$[0.14662568]@,\$[0.33314988]@,\$[0.12857059]@,\$[0.27195948]@,\$[1.0489909]@
\$[0.52129804]@,\$[0.51712738]@,\$[0.57457149]@,\$[0.48958992]@,\$[2.4742154]@
\$[0.4240105]@,\$[0.55138354]@,\$[0.59180824]@,\$[0.77545952]@,\$[2.2921082]@
\$[0.98888358]@,\$[0.46728825]@,\$[0.36178019]@,\$[0.93619004]@,\$[1.2259013]@
\$[0.33888935]@,\$[0.34706718]@,\$[0.37442313]@,\$[0.45755111]@,\$[1.389635]@
\$[0.65527501]@,\$[0.44072919]@,\$[0.38947264]@,\$[0.96185844]@,\$[2.3672721]@
\$[0.6512558]@,\$[1.0067623]@,\$[1.1976807]@,\$[1.522256]@,\$[3.7282211]@
\$[1.5928208]@,\$[0.66064445]@,\$[1.4426072]@,\$[0.54862216]@,\$[13.768568]@

```

BT2022_qiv_22_alldata
$[0.94693847]@,$[0.78134561]@,$[1.2693225]@,$[1.59733]@,$[4.3108935]@
$[1.1816457]@,$[0.6338461]@,$[1.6419328]@,$[1.5437564]@,$[7.7913712]@
$[2.0462989]@,$[1.7359841]@,$[2.3622451]@,$[2.0357193]@,$[118.06584]@
$[0.84151494]@,$[2.0377705]@,$[2.0119128]@,$[2.2832556]@,$[12.722622]@
$[1.6804432]@,$[1.5683385]@,$[2.5778142]@,$[2.5800257]@,$[71.211068]@
$[1.205061]@,$[2.0233407]@,$[1.5109409]@,$[2.9832189]@,$[41.018683]@
$[2.0621813]@,$[2.6963386]@,$[2.0735595]@,$[2.5163938]@,$[180.96195]@
$[1.352466]@,$[1.3613672]@,$[1.9307471]@,$[2.986869]@,$[38.171614]@
$[1.1410697]@,$[1.0254409]@,$[3.5764926]@,$[2.8450306]@,$[5.6797771]@
$[1.3115336]@,$[2.5252279]@,$[1.4902955]@,$[2.5742208]@,$[45.327172]@

```

MM18B002

```

alpha = 0.053006088
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X2 X2 X4 X3 + beta_2 X2 X2 X3 X1 X4 + beta_3 X3 X2 X2 X3 X1
+ beta_4 X4 X1 X3 X3 X3
PARAMATER FOR POPULATION RANGE: beta_0
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@,$[3.0732848]@
$[0.1191924]@,$[0.086265326]@,$[0.1038486]@,$[0.12395193]@,$[1.873478]@
$[0.13208328]@,$[0.12404911]@,$[0.13746401]@,$[0.18477347]@,$[3.1107308]@
$[0.28192256]@,$[0.58110323]@,$[0.28761787]@,$[0.43470811]@,$[1.1321306]@
$[0.43306516]@,$[0.46336152]@,$[0.78838459]@,$[0.3148724]@,$[-0.42811085]@
$[0.48594118]@,$[0.76293]@,$[0.91263564]@,$[0.79762763]@,$[2.0697784]@
$[0.90662509]@,$[1.0830128]@,$[0.35266945]@,$[0.43824956]@,$[1.9566685]@
$[0.43911623]@,$[0.93139045]@,$[0.36852803]@,$[0.68721429]@,$[1.2654333]@
$[1.356662]@,$[1.2467181]@,$[1.3644996]@,$[0.43835627]@,$[21.918293]@
$[1.4783922]@,$[1.6643393]@,$[1.30887]@,$[1.2999075]@,$[33.513128]@
$[1.3417705]@,$[0.77523755]@,$[1.8700124]@,$[0.66575217]@,$[21.440655]@
$[0.95306306]@,$[2.1937816]@,$[1.224637]@,$[1.4591853]@,$[28.913492]@
$[1.4097186]@,$[1.9323252]@,$[1.4996526]@,$[1.4092197]@,$[56.890557]@
$[1.9268368]@,$[1.784018]@,$[1.3591084]@,$[2.307158]@,$[42.459242]@
$[1.8242156]@,$[1.4573479]@,$[1.3331162]@,$[1.1835241]@,$[35.883309]@
$[2.6085308]@,$[0.82291737]@,$[2.1004822]@,$[2.77467]@,$[100.69769]@
$[1.9682469]@,$[2.5418359]@,$[2.0479468]@,$[2.6805291]@,$[231.41256]@
$[1.2666203]@,$[2.9089447]@,$[1.6943201]@,$[3.0421466]@,$[99.146299]@
$[1.6707108]@,$[1.4194608]@,$[3.5452949]@,$[0.93999084]@,$[297.34838]@
$[1.6134787]@,$[1.1121017]@,$[2.5669914]@,$[1.082963]@,$[98.219188]@

```

MM18B003

```

alpha = 0.063024673
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X1 X3 X1 X2 + beta_2 X2 X1 X3 X1 X2 + beta_3 X3 X3 X2 X2 X4
+ beta_4 X4 X4 X4 X1 X1
PARAMATER FOR POPULATION RANGE: beta_1
DATA COLUMNS X1 X2 X3 X4 Y

```

BT2022_qiv_22_alldata

$\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[2.2701936]@$
 $\$[0.12150668]@,\$[0.18196911]@,\$[0.15917486]@,\$[0.19633542]@,\$[0.44342573]@$
 $\$[0.27929691]@,\$[0.36020966]@,\$[0.17960991]@,\$[0.39022741]@,\$[1.4212262]@$
 $\$[0.55094551]@,\$[0.29525882]@,\$[0.41088613]@,\$[0.44469888]@,\$[2.5436499]@$
 $\$[0.74283259]@,\$[0.31722993]@,\$[0.38904358]@,\$[0.23135223]@,\$[2.9630356]@$
 $\$[0.26938383]@,\$[0.40783667]@,\$[0.9992537]@,\$[0.69981113]@,\$[3.0440997]@$
 $\$[0.54693352]@,\$[1.1027079]@,\$[0.70583653]@,\$[0.73014981]@,\$[6.5160177]@$
 $\$[1.0801655]@,\$[0.75102276]@,\$[0.88873715]@,\$[0.97600362]@,\$[12.11996]@$
 $\$[1.416005]@,\$[0.46217552]@,\$[0.73829109]@,\$[0.61960166]@,\$[8.1265915]@$
 $\$[0.6503153]@,\$[1.427977]@,\$[1.7422795]@,\$[1.7880475]@,\$[81.528263]@$
 $\$[0.77021695]@,\$[1.0042524]@,\$[1.2304024]@,\$[0.64943899]@,\$[11.385624]@$
 $\$[0.68345727]@,\$[1.6844408]@,\$[1.657085]@,\$[1.8527753]@,\$[103.81407]@$
 $\$[0.79961542]@,\$[0.61039669]@,\$[0.76680904]@,\$[0.8325976]@,\$[4.7642628]@$
 $\$[1.2734184]@,\$[1.332939]@,\$[0.75941653]@,\$[2.3507673]@,\$[100.14104]@$
 $\$[1.2125659]@,\$[1.2776849]@,\$[1.8242245]@,\$[1.9957846]@,\$[128.41795]@$
 $\$[0.97442289]@,\$[1.6337891]@,\$[1.560068]@,\$[0.83619011]@,\$[48.040745]@$
 $\$[1.3879766]@,\$[2.5807932]@,\$[0.81308127]@,\$[1.0538124]@,\$[67.810725]@$
 $\$[2.0202231]@,\$[1.8409582]@,\$[1.6432746]@,\$[1.9183478]@,\$[322.25205]@$
 $\$[1.0620305]@,\$[1.7943461]@,\$[3.4463515]@,\$[2.087306]@,\$[554.00064]@$
 $\$[3.7836614]@,\$[1.1775307]@,\$[0.96745075]@,\$[2.8643847]@,\$[1476.3939]@$

MM18B009

```

alpha = 0.086324137
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X1 X4 X4 X2 + beta_2 X2 X2 X1 X3 X4 + beta_3 X3 X3 X1 X2 X4
+ beta_4 X4 X3 X4 X4 X1
PARAMATER FOR POPULATION RANGE: beta_2
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@,$[1.8422212]@
$[0.078173006]@,$[0.15635413]@,$[0.17859624]@,$[0.060500987]@,$[1.7294331]@
$[0.15093513]@,$[0.33288584]@,$[0.34115084]@,$[0.38785633]@,$[3.6872874]@
$[0.44627436]@,$[0.59924248]@,$[0.42170709]@,$[0.27843408]@,$[1.5250815]@
$[0.30506942]@,$[0.55999978]@,$[0.37186882]@,$[0.32704767]@,$[3.5642099]@
$[0.66916612]@,$[0.94254708]@,$[0.88568891]@,$[0.9169238]@,$[4.4105689]@
$[0.60417782]@,$[0.70054778]@,$[0.80595518]@,$[1.0421486]@,$[6.1125803]@
$[1.2272335]@,$[1.1825027]@,$[0.54221093]@,$[0.76341884]@,$[6.5847802]@
$[0.60869095]@,$[0.93835918]@,$[0.54806396]@,$[0.85658683]@,$[3.139259]@
$[1.5588419]@,$[1.1940922]@,$[0.71825881]@,$[1.2737015]@,$[22.217027]@
$[0.69114448]@,$[0.78260584]@,$[0.75789844]@,$[1.6004139]@,$[12.071008]@
$[0.96036441]@,$[1.6137388]@,$[0.62512066]@,$[1.7329387]@,$[25.459624]@
$[1.3853972]@,$[2.0581838]@,$[1.8851787]@,$[2.3863079]@,$[239.52662]@
$[0.77515272]@,$[2.5094971]@,$[1.8848216]@,$[1.1625542]@,$[47.396528]@
$[1.4139042]@,$[1.1655312]@,$[1.1453158]@,$[2.3351329]@,$[105.30313]@
$[1.2360113]@,$[2.6073074]@,$[2.341423]@,$[2.516897]@,$[355.45724]@
$[1.1727307]@,$[2.7691339]@,$[1.180003]@,$[3.1504824]@,$[282.07454]@
$[3.3576937]@,$[1.3872446]@,$[2.322965]@,$[2.8134828]@,$[951.57676]@
$[2.8658396]@,$[3.2803108]@,$[2.9653551]@,$[1.5771586]@,$[722.23066]@

```

BT2022_qiv_22_alldata

\$[3.6800203]@,\$[3.4290232]@,\$[2.2756365]@,\$[1.0383592]@,\$[426.2242]@

MM18B018

alpha = 0.063133973

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X3 X2 X2 X4 + beta_2 X2 X2 X2 X4 X4 + beta_3 X3 X4 X3 X3 X4
+ beta_4 X4 X3 X2 X3 X1

PARAMATER FOR POPULATION RANGE: beta_0

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[1.8245535]@
\$[0.15309523]@,\$[0.054693493]@,\$[0.050052452]@,\$[0.11498954]@,\$[2.2716466]@
\$[0.33112759]@,\$[0.37418996]@,\$[0.20428297]@,\$[0.1908755]@,\$[3.1903893]@
\$[0.18400735]@,\$[0.50465579]@,\$[0.54610563]@,\$[0.53251267]@,\$[1.1451056]@
\$[0.34893649]@,\$[0.47585813]@,\$[0.37173717]@,\$[0.23203484]@,\$[2.4195327]@
\$[0.77830376]@,\$[0.51741544]@,\$[0.55294354]@,\$[0.33049505]@,\$[2.6060441]@
\$[0.337544]@,\$[0.99333959]@,\$[0.7640843]@,\$[0.66770284]@,\$[5.5075191]@
\$[1.2200543]@,\$[1.1614102]@,\$[0.75007931]@,\$[0.67130039]@,\$[10.69133]@
\$[0.55882627]@,\$[0.96025631]@,\$[0.86851053]@,\$[1.1745531]@,\$[10.395088]@
\$[0.55824012]@,\$[1.0565274]@,\$[0.97539394]@,\$[0.52194101]@,\$[5.4429566]@
\$[0.65235095]@,\$[1.8430281]@,\$[1.6541991]@,\$[0.86478606]@,\$[38.035865]@
\$[1.5893034]@,\$[0.77818469]@,\$[1.021654]@,\$[1.0327132]@,\$[11.396114]@
\$[1.3466486]@,\$[1.4200042]@,\$[0.84289457]@,\$[0.68060717]@,\$[16.851157]@
\$[1.9329613]@,\$[1.6022685]@,\$[1.7936419]@,\$[1.9107985]@,\$[155.97812]@
\$[2.7982925]@,\$[2.6498118]@,\$[1.5560011]@,\$[1.3731931]@,\$[410.98721]@
\$[1.9220144]@,\$[2.3488432]@,\$[2.0769976]@,\$[1.2626344]@,\$[261.51371]@
\$[2.0371166]@,\$[1.8422573]@,\$[2.7314521]@,\$[3.0656518]@,\$[373.22893]@
\$[3.0282179]@,\$[3.0118169]@,\$[3.3806699]@,\$[3.1220615]@,\$[2636.4533]@
\$[1.2913908]@,\$[1.3326799]@,\$[3.1433786]@,\$[3.2291162]@,\$[-279.39792]@
\$[2.0429983]@,\$[1.8903616]@,\$[1.8844558]@,\$[3.1888167]@,\$[492.42543]@

MM18B019

alpha = 0.096367258

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X1 X2 X4 X3 + beta_2 X2 X2 X3 X2 X2 + beta_3 X3 X3 X4 X1 X3
+ beta_4 X4 X3 X3 X4 X3

PARAMATER FOR POPULATION RANGE: beta_1

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@,\$[2.346641]@
\$[0.1098132]@,\$[0.084477817]@,\$[0.18838025]@,\$[0.18806164]@,\$[3.6574565]@
\$[0.11033092]@,\$[0.1555126]@,\$[0.17304949]@,\$[0.16100671]@,\$[0.51628507]@
\$[0.23324955]@,\$[0.15473799]@,\$[0.38776103]@,\$[0.24848384]@,\$[0.76352814]@
\$[0.51136728]@,\$[0.35077849]@,\$[0.51306927]@,\$[0.52118023]@,\$[1.3184327]@
\$[0.44219877]@,\$[0.89507143]@,\$[0.87521353]@,\$[0.27605029]@,\$[2.4686781]@
\$[0.37377024]@,\$[0.6204883]@,\$[0.43500128]@,\$[0.60415665]@,\$[2.4978003]@
\$[0.57853362]@,\$[0.44178031]@,\$[0.873887]@,\$[1.0762658]@,\$[5.0222225]@
\$[1.4861258]@,\$[0.88699325]@,\$[0.66918697]@,\$[0.64816457]@,\$[3.8465272]@

BT2022_qiv_22_alldata

```

$[0.5195124]@,$[1.1799388]@,$[1.292907]@,$[0.94243437]@,$[4.6164013]@
$[1.2556986]@,$[0.87611939]@,$[1.2020281]@,$[1.7897591]@,$[23.789083]@
$[0.68861877]@,$[0.55942043]@,$[0.6648886]@,$[1.4934539]@,$[4.3294061]@
$[2.2214523]@,$[1.3981299]@,$[1.9614895]@,$[2.2520925]@,$[174.79077]@
$[1.7105395]@,$[1.5673245]@,$[0.84486179]@,$[0.9766972]@,$[3.3433573]@
$[1.1621255]@,$[0.91903959]@,$[1.6820965]@,$[0.82993472]@,$[14.459894]@
$[1.5564124]@,$[0.97352656]@,$[2.3799872]@,$[2.6271724]@,$[340.68557]@
$[1.041064]@,$[1.5119943]@,$[2.3299502]@,$[2.1164125]@,$[190.72634]@
$[1.4181973]@,$[2.2497113]@,$[2.2158255]@,$[3.2868435]@,$[385.16795]@
$[2.3484224]@,$[2.969073]@,$[1.7908038]@,$[1.233733]@,$[-143.49784]@
$[2.054228]@,$[3.0405505]@,$[3.1755781]@,$[2.4793277]@,$[359.90466]@

```

MM18B026

alpha = 0.15306555

MLR FIT FUNCTION

```

Y = beta_0 + beta_1 X1 X3 X3 X2 X2 + beta_2 X2 X3 X2 X3 X3 + beta_3 X3 X3 X1 X1 X4
+ beta_4 X4 X1 X1 X4 X4
PARAMATER FOR POPULATION RANGE: beta_2
DATA COLUMNS X1 X2 X3 X4 Y
$[0]@,$[0]@,$[0]@,$[0]@[3.2680063]@
$[0.054394778]@,$[0.1120674]@,$[0.19586985]@,$[0.15666642]@,$[0.8568887]@
$[0.1428344]@,$[0.29235445]@,$[0.29942181]@,$[0.15490581]@,$[4.2157015]@
$[0.34259174]@,$[0.54446896]@,$[0.36339612]@,$[0.22403486]@,$[2.4037855]@
$[0.40351515]@,$[0.37608981]@,$[0.79942893]@,$[0.76671144]@,$[4.0892819]@
$[0.47994848]@,$[0.95846005]@,$[0.90437811]@,$[0.84351401]@,$[5.7684237]@
$[0.56028816]@,$[0.36511211]@,$[0.77580834]@,$[0.7258888]@,$[3.3791516]@
$[0.64488154]@,$[0.7514318]@,$[1.3080527]@,$[1.1578088]@,$[9.261705]@
$[1.5102936]@,$[0.53260186]@,$[1.2979979]@,$[0.50581863]@,$[6.5170363]@
$[0.84410593]@,$[1.557054]@,$[1.0934521]@,$[0.6109467]@,$[13.206667]@
$[1.0372044]@,$[1.818873]@,$[1.0876644]@,$[1.0578264]@,$[20.557927]@
$[0.69214629]@,$[1.7120652]@,$[1.2784257]@,$[1.3866982]@,$[22.482538]@
$[1.0606018]@,$[2.2672222]@,$[1.4912694]@,$[1.0258807]@,$[58.935917]@
$[1.6476119]@,$[1.3917066]@,$[0.83863919]@,$[1.850376]@,$[12.727157]@
$[2.5413891]@,$[2.3274044]@,$[1.4007132]@,$[1.914465]@,$[107.0825]@
$[2.0898417]@,$[2.130638]@,$[2.7821002]@,$[1.9153812]@,$[415.12017]@
$[1.3630216]@,$[2.9639622]@,$[2.4382327]@,$[1.1716318]@,$[393.20492]@
$[1.5897505]@,$[2.9125314]@,$[1.2467283]@,$[1.9887004]@,$[79.297996]@
$[1.4199487]@,$[2.9104361]@,$[2.5595198]@,$[2.7640646]@,$[466.83825]@
$[3.5337669]@,$[1.9977696]@,$[2.0302917]@,$[1.3040919]@,$[264.73426]@

```

MM18B029

alpha = 0.15434804

MLR FIT FUNCTION

```

Y = beta_0 + beta_1 X1 X3 X1 X1 X4 + beta_2 X2 X3 X1 X4 X4 + beta_3 X3 X3 X1 X2 X4
+ beta_4 X4 X4 X2 X2 X3
PARAMATER FOR POPULATION RANGE: beta_3

```

BT2022_qiv_22_alldata

DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@[0]@[0]@[0]@[0]@[2.0187443]@
\$[0.11577742]@[0.067110611]@[0.081958075]@[0.062524925]@[0.94988955]@
\$[0.35322956]@[0.29451554]@[0.27019176]@[0.16979706]@[2.8102837]@
\$[0.3560981]@[0.19213347]@[0.37488763]@[0.30687432]@[3.1210576]@
\$[0.58939153]@[0.68649782]@[0.36084316]@[0.26647721]@[2.7999226]@
\$[0.62489194]@[0.60502692]@[0.45722694]@[0.32938972]@[2.66198]@
\$[0.79199209]@[0.70697367]@[0.62329662]@[1.0804014]@[7.9884251]@
\$[1.3743816]@[1.3910592]@[1.1798577]@[0.82404789]@[22.722131]@
\$[1.3574234]@[0.71881064]@[1.5417694]@[1.56406]@[46.067827]@
\$[1.7232827]@[1.0684096]@[0.96442262]@[1.6728938]@[57.569982]@
\$[1.2547175]@[1.2083151]@[1.2626937]@[0.88881209]@[22.000766]@
\$[2.0360903]@[1.3567776]@[1.1461944]@[1.9218456]@[132.61404]@
\$[1.1820514]@[1.2571918]@[0.79808606]@[1.2805424]@[23.987107]@
\$[0.88259352]@[1.2181295]@[1.8021591]@[1.828846]@[74.38732]@
\$[2.0380448]@[2.4381725]@[1.2853744]@[1.2415994]@[134.04591]@
\$[1.5997593]@[0.89240848]@[1.7676858]@[1.6407012]@[85.443839]@
\$[2.6723978]@[1.8705908]@[2.4553228]@[1.6667012]@[510.21676]@
\$[2.5451112]@[1.4720589]@[1.3358126]@[2.7914216]@[410.15011]@
\$[2.7865375]@[3.4140997]@[2.064176]@[2.441518]@[1388.262]@
\$[1.7675199]@[3.1719667]@[1.7316583]@[2.3896386]@[682.23968]@

MM18B032
alpha = 0.14178803
MLR FIT FUNCTION
Y = beta_0 + beta_1 X1 X1 X2 X3 X1 + beta_2 X2 X3 X4 X2 X1 + beta_3 X3 X1 X4 X4 X2
+ beta_4 X4 X4 X4 X4 X1
PARAMATER FOR POPULATION RANGE: beta_4
DATA COLUMNS X1 X2 X3 X4 Y
\$[0]@[0]@[0]@[0]@[4.0531689]@
\$[0.16543669]@[0.068226159]@[0.16791808]@[0.097973865]@[3.0329347]@
\$[0.32265638]@[0.19699004]@[0.3892257]@[0.12327758]@[4.6135126]@
\$[0.48013658]@[0.58572384]@[0.28987418]@[0.32913105]@[3.6624711]@
\$[0.48415792]@[0.35900222]@[0.7394349]@[0.44011593]@[4.2046227]@
\$[0.61115087]@[0.78367036]@[0.75236114]@[0.91990755]@[5.5796232]@
\$[0.45655731]@[0.72288295]@[0.4210993]@[0.58901695]@[4.7140148]@
\$[1.0806522]@[1.351132]@[1.3850927]@[0.62142532]@[14.180213]@
\$[0.88975903]@[0.42588999]@[1.4567081]@[1.1555154]@[6.4351978]@
\$[1.5372056]@[1.143659]@[0.57433441]@[1.6861623]@[26.80146]@
\$[0.94157021]@[1.3923721]@[1.3654004]@[1.669818]@[39.362276]@
\$[1.3900408]@[0.70962598]@[0.8115889]@[0.85951571]@[7.6877793]@
\$[2.0978184]@[0.93448931]@[1.9960849]@[0.84655643]@[40.218303]@
\$[1.7306174]@[1.8582991]@[2.1434176]@[2.0460626]@[222.16044]@
\$[1.929875]@[2.5970211]@[2.0835713]@[1.2382548]@[239.19283]@
\$[2.8569153]@[0.97638823]@[1.8753131]@[1.4135452]@[106.53211]@
\$[3.1456329]@[2.1666623]@[3.0589641]@[0.93148762]@[452.48307]@
\$[2.4993177]@[1.7308996]@[3.2043565]@[0.89909929]@[220.07653]@

BT2022_qiv_22_alldata
\$[1.7194391]@,\$[1.8940681]@,\$[2.3760415]@,\$[2.4073355]@,\$[314.50792]@
\$[2.2088909]@,\$[3.2359084]@,\$[1.4542803]@,\$[3.7707103]@,\$[1208.1491]@

MM18B104

alpha = 0.13889114

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X3 X2 X3 X3 + beta_2 X2 X2 X1 X2 X2 + beta_3 X3 X1 X2 X4 X2
+ beta_4 X4 X3 X3 X1 X2

PARAMATER FOR POPULATION RANGE: beta_1

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@[1.35622]@
\$[0.14349232]@,\$[0.087893543]@,\$[0.067033929]@,\$[0.1397599]@,\$[0.46957757]@
\$[0.19360114]@,\$[0.27493482]@,\$[0.30860878]@,\$[0.14964135]@,\$[1.937421]@
\$[0.45173695]@,\$[0.3929349]@,\$[0.40476031]@,\$[0.38631032]@,\$[2.2085534]@
\$[0.26623124]@,\$[0.62581745]@,\$[0.77063682]@,\$[0.61182964]@,\$[2.8814214]@
\$[0.64836694]@,\$[0.93195042]@,\$[0.99542497]@,\$[0.55212417]@,\$[6.092412]@
\$[0.59095598]@,\$[1.1523433]@,\$[1.1359132]@,\$[0.55862379]@,\$[9.6986692]@
\$[0.76833967]@,\$[1.0775413]@,\$[1.0427359]@,\$[1.1083962]@,\$[8.9575248]@
\$[1.3332999]@,\$[0.77226953]@,\$[1.1149484]@,\$[0.9582433]@,\$[8.4583519]@
\$[1.5652277]@,\$[0.89367203]@,\$[1.6582886]@,\$[0.5950852]@,\$[22.814161]@
\$[1.9018531]@,\$[1.0107502]@,\$[0.85384573]@,\$[1.2257224]@,\$[13.55194]@
\$[1.3520217]@,\$[0.73025504]@,\$[1.3543037]@,\$[1.133524]@,\$[12.107729]@
\$[1.5392478]@,\$[0.63579946]@,\$[1.5664502]@,\$[0.70992702]@,\$[15.767211]@
\$[1.1562758]@,\$[1.1997122]@,\$[1.1878448]@,\$[2.594253]@,\$[17.669889]@
\$[1.5805369]@,\$[1.4144327]@,\$[0.73599642]@,\$[1.6032347]@,\$[29.029671]@
\$[1.6082808]@,\$[1.777371]@,\$[0.92039819]@,\$[1.4943504]@,\$[67.700562]@
\$[0.91983734]@,\$[1.4717745]@,\$[2.464218]@,\$[2.9981829]@,\$[84.073009]@
\$[1.1603259]@,\$[2.7410649]@,\$[2.4236973]@,\$[0.98537616]@,\$[377.85632]@
\$[0.93759677]@,\$[2.3169437]@,\$[1.6583802]@,\$[2.5105576]@,\$[125.59407]@
\$[2.0005485]@,\$[3.3189973]@,\$[1.119616]@,\$[2.2196474]@,\$[925.70181]@

MM18B108

alpha = 0.1047446

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X2 X3 X3 X1 + beta_2 X2 X2 X3 X2 X4 + beta_3 X3 X1 X3 X3 X1
+ beta_4 X4 X4 X2 X3 X3

PARAMATER FOR POPULATION RANGE: beta_0

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@[5.7741344]@
\$[0.18001322]@,\$[0.050877579]@,\$[0.087393648]@,\$[0.12917482]@,\$[4.2222801]@
\$[0.2856942]@,\$[0.34697396]@,\$[0.2447113]@,\$[0.29449404]@,\$[4.3588891]@
\$[0.33470672]@,\$[0.58541574]@,\$[0.35041273]@,\$[0.22885101]@,\$[3.5181281]@
\$[0.47477387]@,\$[0.32123372]@,\$[0.70152094]@,\$[0.74646248]@,\$[6.2055151]@
\$[0.31617475]@,\$[0.7707486]@,\$[0.62137789]@,\$[0.41072995]@,\$[6.6231624]@
\$[0.6548345]@,\$[0.98639476]@,\$[0.33974662]@,\$[0.94763021]@,\$[7.1630731]@
\$[1.0433414]@,\$[0.60087438]@,\$[1.3751824]@,\$[0.63479456]@,\$[7.395019]@

```

BT2022_qiv_22_alldata
$[1.5061709]@,$[0.45729312]@,$[1.5641764]@,$[0.68878352]@,$[4.3290934]@
$[1.1432566]@,$[1.4413688]@,$[0.95972052]@,$[0.91233911]@,$[15.860699]@
$[1.4932196]@,$[1.4822114]@,$[1.299112]@,$[1.0933008]@,$[24.908933]@
$[1.2254993]@,$[1.5590614]@,$[2.0578884]@,$[0.7491102]@,$[26.520575]@
$[2.0233413]@,$[1.9608058]@,$[1.77375]@,$[0.89806255]@,$[44.708128]@
$[1.8551796]@,$[1.6832492]@,$[2.5093079]@,$[2.5557818]@,$[276.37881]@
$[1.5859181]@,$[1.7978074]@,$[2.4764726]@,$[0.84621065]@,$[44.350885]@
$[2.8916447]@,$[0.88503034]@,$[0.91826304]@,$[2.2382961]@,$[18.696171]@
$[1.8845167]@,$[0.98395742]@,$[2.4365563]@,$[1.1984255]@,$[15.356055]@
$[2.0808666]@,$[2.0896635]@,$[2.647326]@,$[2.5711227]@,$[435.23576]@
$[1.3059346]@,$[1.5357549]@,$[1.7613753]@,$[3.3139342]@,$[219.41547]@
$[1.8911459]@,$[2.032824]@,$[1.9228017]@,$[2.5341453]@,$[254.19246]@

```

MM20B041

alpha = 0.19891034

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X1 X2 X4 X4 + beta_2 X2 X2 X4 X2 X4 + beta_3 X3 X4 X3 X1 X4
+ beta_4 X4 X3 X4 X4 X4

PARAMATER FOR POPULATION RANGE: beta_0

DATA COLUMNS X1 X2 X3 X4 Y

```

$[0]@,$[0]@,$[0]@,$[0]@,$[2.1610655]@
$[0.16188374]@,$[0.16458308]@,$[0.1835232]@,$[0.1438459]@,$[0.95739847]@
$[0.11364877]@,$[0.33956386]@,$[0.15066137]@,$[0.16173549]@,$[1.5341641]@
$[0.34403101]@,$[0.16704592]@,$[0.43351165]@,$[0.39207978]@,$[1.4259461]@
$[0.26777667]@,$[0.77307159]@,$[0.21544453]@,$[0.39578295]@,$[1.1746229]@
$[0.85017265]@,$[0.48904911]@,$[0.25303392]@,$[0.74962627]@,$[2.6259781]@
$[0.42620194]@,$[1.1152489]@,$[0.62599072]@,$[0.52681511]@,$[2.7723324]@
$[1.0814893]@,$[0.41293039]@,$[0.73255559]@,$[0.53217238]@,$[0.30779242]@
$[1.2907725]@,$[1.3175574]@,$[0.50093598]@,$[1.0495217]@,$[10.031852]@
$[1.1032039]@,$[1.5460076]@,$[0.91564256]@,$[1.2991039]@,$[25.11327]@
$[1.6949447]@,$[0.5501424]@,$[1.0960298]@,$[0.76681526]@,$[5.2206039]@
$[2.1094429]@,$[0.9920283]@,$[0.9578242]@,$[1.8866548]@,$[70.633911]@
$[0.92006821]@,$[1.5196677]@,$[0.61767588]@,$[1.8243185]@,$[42.208537]@
$[1.4934032]@,$[1.9212774]@,$[1.4035349]@,$[0.67074321]@,$[14.113135]@
$[2.6503217]@,$[1.1490766]@,$[2.3959356]@,$[2.5286822]@,$[504.10695]@
$[2.3298906]@,$[1.6698569]@,$[2.5034408]@,$[2.5156957]@,$[536.46845]@
$[1.9441315]@,$[1.4149107]@,$[1.8656093]@,$[3.069296]@,$[535.39664]@
$[1.2295279]@,$[2.927588]@,$[2.423368]@,$[2.9129234]@,$[841.462]@
$[1.4360597]@,$[1.7327968]@,$[3.1979468]@,$[3.3526181]@,$[1176.764]@
$[3.3013274]@,$[3.7819818]@,$[1.874656]@,$[1.8840036]@,$[724.10287]@

```

NA18B012

alpha = 0.1347283

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X1 X3 X2 X1 + beta_2 X2 X3 X3 X1 X4 + beta_3 X3 X1 X3 X4 X1
+ beta_4 X4 X4 X2 X4 X2

BT2022_qiv_22_alldata

PARAMATER FOR POPULATION RANGE: beta_3

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@[2.8422008]@
\$[0.096435276]@,\$[0.06570376]@,\$[0.13933688]@,\$[0.19264347]@,\$[0.30755318]@
\$[0.25207425]@,\$[0.32278808]@,\$[0.25982189]@,\$[0.10754143]@,\$[1.639883]@
\$[0.50338771]@,\$[0.29375218]@,\$[0.16663427]@,\$[0.46784799]@,\$[0.44578254]@
\$[0.73192784]@,\$[0.41684434]@,\$[0.75181678]@,\$[0.7022445]@,\$[2.3755139]@
\$[0.7093127]@,\$[0.40548408]@,\$[0.77741687]@,\$[0.69991383]@,\$[1.8933489]@
\$[1.0117634]@,\$[0.7611307]@,\$[0.85895326]@,\$[0.30201446]@,\$[3.6039693]@
\$[1.2340258]@,\$[0.45932943]@,\$[0.75013146]@,\$[0.64309491]@,\$[1.6824849]@
\$[1.4537827]@,\$[1.5581801]@,\$[0.81601405]@,\$[0.81997135]@,\$[15.076454]@
\$[0.95043097]@,\$[0.91831929]@,\$[1.6422697]@,\$[0.80508011]@,\$[12.142101]@
\$[1.2922008]@,\$[0.80951139]@,\$[1.3603717]@,\$[1.6365846]@,\$[21.048146]@
\$[0.71743731]@,\$[0.75436465]@,\$[1.4651659]@,\$[0.97943143]@,\$[5.8351256]@
\$[0.83850292]@,\$[0.7182017]@,\$[2.3636712]@,\$[0.62844927]@,\$[13.404288]@
\$[1.7510241]@,\$[2.0284193]@,\$[2.3392349]@,\$[1.9927581]@,\$[222.08101]@
\$[0.90922066]@,\$[1.6374343]@,\$[2.3425175]@,\$[1.5497973]@,\$[57.641306]@
\$[0.75583718]@,\$[2.0439772]@,\$[1.2349763]@,\$[1.8976022]@,\$[38.156434]@
\$[1.6187563]@,\$[1.3277369]@,\$[2.9815285]@,\$[3.0577269]@,\$[316.43715]@
\$[2.94561]@,\$[2.0129846]@,\$[2.6773463]@,\$[3.2194642]@,\$[963.8767]@
\$[2.7535996]@,\$[1.3157599]@,\$[0.93361423]@,\$[1.8907775]@,\$[86.837929]@
\$[2.6475566]@,\$[1.9405837]@,\$[3.7383019]@,\$[1.6636766]@,\$[790.3341]@

NA18B019

alpha = 0.1558668

MLR FIT FUNCTION

Y = beta_0 + beta_1 X1 X1 X4 X3 X2 + beta_2 X2 X3 X1 X4 X2 + beta_3 X3 X1 X1 X2 X2
+ beta_4 X4 X1 X3 X2 X4

PARAMATER FOR POPULATION RANGE: beta_2

DATA COLUMNS X1 X2 X3 X4 Y

\$[0]@,\$[0]@,\$[0]@,\$[0]@[1.3249434]@
\$[0.11035145]@,\$[0.068816758]@,\$[0.094871147]@,\$[0.062742681]@,\$[-0.10005236]@
\$[0.39555488]@,\$[0.16184068]@,\$[0.27410333]@,\$[0.29446941]@,\$[1.0849015]@
\$[0.3144878]@,\$[0.58337787]@,\$[0.19392582]@,\$[0.32884706]@,\$[1.2870735]@
\$[0.24373882]@,\$[0.6004999]@,\$[0.45858007]@,\$[0.512912]@,\$[0.34146327]@
\$[0.8025105]@,\$[0.41191271]@,\$[0.46497699]@,\$[0.80099343]@,\$[0.59762888]@
\$[0.81678938]@,\$[0.97524607]@,\$[0.6063296]@,\$[0.78631145]@,\$[6.3691127]@
\$[0.83531385]@,\$[0.9823276]@,\$[0.50399246]@,\$[0.52064031]@,\$[4.0220537]@
\$[0.94049848]@,\$[1.4768047]@,\$[1.2271685]@,\$[1.4561741]@,\$[35.601407]@
\$[0.51246548]@,\$[1.2414417]@,\$[1.4935684]@,\$[1.4210286]@,\$[13.785522]@
\$[0.72070385]@,\$[1.9802885]@,\$[1.0316094]@,\$[1.8209741]@,\$[42.052336]@
\$[2.1898736]@,\$[0.75815918]@,\$[1.4555342]@,\$[2.0705938]@,\$[91.404132]@
\$[2.3609472]@,\$[2.1277283]@,\$[0.62105059]@,\$[1.9138677]@,\$[176.82972]@
\$[1.206875]@,\$[2.2402965]@,\$[1.3647442]@,\$[1.4665348]@,\$[120.4562]@
\$[2.6560253]@,\$[1.5821121]@,\$[2.465122]@,\$[1.1414281]@,\$[367.38777]@
\$[2.1583943]@,\$[2.4755689]@,\$[1.5735248]@,\$[1.6427222]@,\$[438.67126]@
\$[1.3850588]@,\$[2.6104567]@,\$[1.6324874]@,\$[1.8762896]@,\$[276.89025]@

BT2022_qiv_22_alldata
\$[1.6731512]@,\$[3.1579889]@,\$[1.437791]@,\$[2.5432951]@,\$[576.36496]@
\$[2.0978614]@,\$[1.0763646]@,\$[1.333467]@,\$[3.3676674]@,\$[190.4641]@
\$[1.3905656]@,\$[2.4294765]@,\$[2.289822]@,\$[3.7713397]@,\$[639.50079]@