```
Exponential Discounting t=
        "delta ( δ )" * "Exponential Discounting t - 1"
        ~       Dmnl
        ~               |

Real Instanteneous Utility=
        "Utility ( u )" * Exponential Discounting t
        ~       Util / Year
        ~               |

"Labor Income ( Y )"=
        "Normal Labor Income (Y)" * (1 - Retirement Switch)
        ~       Dollar/Year
        ~               |

MPC=
        ZIDZ(Current Consumption, "Labor Income ( Y )")
        ~       Dmnl
        ~               ~       :SUPPLEMENTARY
        |

Consumption=
        ("Initial Wealth ( W )" + (Retirement Time - INITIAL TIME) * "Normal Labor Income (Y)"\
                ) / (FINAL TIME - INITIAL TIME )
        ~       Dollar/Year
        ~               |

"Wealth ( W )"= INTEG (
        "Labor Income ( Y )"-Current Consumption,
                "Initial Wealth ( W )")
        ~       Dollar
        ~               ~       :SUPPLEMENTARY
        |

Current Consumption=
        Consumption
        ~       Dollar/Year
        ~               |

"Utility ( u )"=
        IF THEN ELSE ("Coefficient of Relative Risk Aversion ( ρ )" = 1, IF THEN ELSE(Current
Consumption
         = 0, 0, ln (
         Current Consumption / Normal Consumption)
        ) * Util per Year
         , ((( Current Consumption
         / Normal Consumption) ^ (1 - "Coefficient of Relative Risk Aversion ( ρ )" )) / (1\
                 - "Coefficient of Relative Risk Aversion ( ρ )"
         )) * Util per Year )
        ~       Util / Year
        ~               |

"Real Lifetime Utility ( U )"= INTEG (
        Real Instanteneous Utility,
                "Initial Real Lifetime Utility (U)")
        ~       Util
        ~               ~       :SUPPLEMENTARY
        |

Chge in Exponential Discounting t 1=
        IF THEN ELSE(Time = INTEGER (Time), ( Exponential Discounting t - Exponential Discounting
t 1\
                ) / TIME STEP, 0)
        ~       Dmnl/Year
        ~               |
```

```
"Coefficient of Relative Risk Aversion ( ρ )"=
        0.67
        ~       Dmnl
        ~               |

"delta ( δ )"=
        0.99
        ~       Dmnl
        ~               |

"Exponential Discounting t - 1"=
        IF THEN ELSE(Time = INTEGER(Time), Exponential Discounting t 1, Lagged Exponential
Discounting t 1\
                )
        ~       Dmnl
        ~               |

Exponential Discounting t 1= INTEG (
        Chge in Exponential Discounting t 1,
                Initial Exponential Discounting t 1)
        ~       Dmnl
        ~               |

Initial Exponential Discounting t 1=
        1
        ~       Dmnl
        ~               |

"Initial Real Lifetime Utility (U)"=
        1
        ~       Util
        ~               |

"Initial Wealth ( W )"=
        1000
        ~       Dollar
        ~               |

Lagged Exponential Discounting t 1=
        DELAY FIXED( Exponential Discounting t 1, 1 , Exponential Discounting t 1 )
        ~       Dmnl
        ~               |

Normal Consumption=
        1
        ~       Dollar/Year
        ~               |

"Normal Labor Income (Y)"=
        1200
        ~       Dollar/Year
        ~               |

Retirement Switch=
        STEP (1, Retirement Time + TIME STEP)
        ~       Dmnl
        ~               |

Retirement Time=
        58
        ~       Year
        ~               |

Util per Year=
        1
        ~       Util/Year
```

```
        ~              |

********************************************************
        .Control
********************************************************~
                Simulation Control Parameters
        |

FINAL TIME  = 78
        ~       Year
        ~       The final time for the simulation.
        |

INITIAL TIME  = 18
        ~       Year
        ~       The initial time for the simulation.
        |

SAVEPER  =
         TIME STEP
        ~       Year [0,?]
        ~       The frequency with which output is stored.
        |

TIME STEP  = 0.0625
        ~       Year [0,?]
        ~       The time step for the simulation.
        |

\\\---/// Sketch information - do not modify anything except names
V300  Do not put anything below this section - it will be ignored
*View 1
$192-192-192,0,Open Sans|10||0-0-0|0-0-0|0-0-255|-1--1--1|255-255-255|96,96,80,0
10,1,"Wealth ( W )",817,321,41,26,3,131,0,0,0,0,0,0,0,0,0,0,0,0
12,2,48,594,326,10,8,0,3,0,40,-1,0,0,0,0-0-0,0-0-0,Open Sans|10||0-0-0,0,0,0,0,0,0
1,3,5,1,4,0,0,22,0,0,0,-1--1--1,,1|(731,326)|
1,4,5,2,100,0,0,22,0,0,0,-1--1--1,,1|(639,326)|
11,5,48,681,326,6,8,34,3,0,0,1,0,0,0,0,0,0,0,0,0,0
10,6,"Labor Income ( Y )",681,344,56,10,40,3,0,40,-1,0,0,0,0-0-0,0-0-0,Open Sans|10||0-0-
0,0,0,0,0,0,0
12,7,48,1030,332,10,8,0,3,0,40,-1,0,0,0,0-0-0,0-0-0,Open Sans|10||0-0-0,0,0,0,0,0,0
1,8,10,7,4,0,0,22,0,0,0,-1--1--1,,1|(977,327)|
1,9,10,1,100,0,0,22,0,0,0,-1--1--1,,1|(890,327)|
11,10,48,928,327,6,8,34,3,0,0,1,0,0,0,0,0,0,0,0,0,0
10,11,Current Consumption,928,353,52,18,40,3,0,0,-1,0,0,0,0,0,0,0,0,0
10,12,"Initial Wealth ( W )",817,257,41,17,8,131,0,8,0,0,0,0,0-0-0,0-0-0,|9||0-0-0,0,0,0,0,0,0
1,13,12,1,0,1,0,0,0,128,1,-1--1--1,,1|(817,277)|
10,14,Normal Consumption,1246,390,44,18,8,3,0,40,-1,0,0,0,0-0-0,0-0-0,Open Sans|10||0-0-
0,0,0,0,0,0,0
10,15,Util per Year,1105,361,38,10,8,3,0,40,-1,0,0,0,0-0-0,0-0-0,Open Sans|10||0-0-0,0,0,0,0,0,0
10,16,Retirement Time,700,489,52,10,8,131,0,40,0,0,0,0,0-0-0,0-0-0,Open Sans|10||0-0-
0,0,0,0,0,0,0
10,17,"Normal Labor Income (Y)",605,414,44,18,8,3,0,40,0,0,0,0,0-0-0,0-0-0,Open Sans|10||0-0-
0,0,0,0,0,0,0
1,18,17,6,1,0,0,0,0,64,0,-1--1--1,,1|(615,376)|
10,19,TIME STEP,1651,342,40,10,8,2,1,43,-1,0,0,0,128-128-128,0-0-0,Open Sans|10||128-128-
128,0,0,0,0,0,0
10,20,TIME STEP,884,-72,40,10,8,2,1,43,-1,0,0,0,128-128-128,0-0-0,Open Sans|10||128-128-
128,0,0,0,0,0,0
10,21,TIME STEP,989,633,40,10,8,2,1,43,-1,0,0,0,128-128-128,0-0-0,Open Sans|10||128-128-
128,0,0,0,0,0,0
10,22,Retirement Switch,716,419,57,10,8,131,0,0,0,0,0,0,0,0,0,0,0,0
1,23,16,22,1,0,0,0,0,64,0,-1--1--1,,1|(714,466)|
1,24,22,6,1,0,0,0,0,128,0,-1--1--1,,1|(709,378)|
10,25,Time,1061,396,24,10,8,2,1,3,-1,0,0,0,128-128-128,0-0-0,|12||128-128-128,0,0,0,0,0,0
10,26,TIME STEP,738,161,40,10,8,2,1,3,-1,0,0,0,128-128-128,0-0-0,|12||128-128-128,0,0,0,0,0,0
```

```
10,27,"delta ( δ )",643,898,30,10,8,131,0,0,0,0,0,0,0,0,0,0,0,0
10,28,Time,847,75,24,10,8,2,1,3,-1,0,0,0,128-128-128,0-0-0,|10||128-128-128,0,0,0,0,0,0
10,29,"Coefficient of Relative Risk Aversion ( ρ )",953,503,68,18,8,3,0,0,0,0,0,0,0,0,0,0,0
10,30,FINAL TIME,1010,241,44,10,8,2,1,3,-1,0,0,0,128-128-128,0-0-0,|10||128-128-128,0,0,0,0,0,0
10,31,FINAL TIME,920,500,44,10,8,2,1,3,-1,0,0,0,128-128-128,0-0-0,|10||128-128-128,0,0,0,0,0,0
10,32,Time,934,451,24,10,8,2,1,3,-1,0,0,0,128-128-128,0-0-0,|10||128-128-128,0,0,0,0,0,0
10,33,TIME STEP,817,509,40,10,8,2,1,3,-1,0,0,0,128-128-128,0-0-0,|10||128-128-128,0,0,0,0,0,0
1,34,33,22,1,1,0,0,0,128,0,-1--1--1,,1|(778,467)|
10,35,"Initial Real Lifetime Utility (U)",1299,502,55,17,8,3,0,8,0,0,0,0,0-0-0,0-0-0,|9||0-0-
0,0,0,0,0,0,0
10,36,Exponential Discounting t 1,787,654,50,28,3,131,0,0,0,0,0,0,0,0,0,0,0,0
12,37,48,543,657,10,8,0,3,0,0,-1,0,0,0,0,0,0,0,0,0,0
1,38,40,36,4,0,0,22,2,0,0,-1--1--1,,|10||0-0-0,1|(695,657)|
1,39,40,37,100,0,0,22,2,0,0,-1--1--1,,|10||0-0-0,1|(597,657)|
11,40,48,648,657,6,8,34,3,0,0,3,0,0,0,0,0,0,0,0,0
10,41,Chge in Exponential Discounting t 1,648,631,62,18,40,3,0,0,-1,0,0,0,0,0,0,0,0,0,0
10,42,Lagged Exponential Discounting t 1,880,763,62,18,8,3,0,0,0,0,0,0,0,0,0,0,0,0,0
10,43,"Exponential Discounting t - 1",1021,686,51,18,8,3,0,0,0,0,0,0,0,0,0,0,0,0
10,44,Exponential Discounting t,748,831,42,18,8,3,0,0,0,0,0,0,0,0,0,0,0,0
1,45,36,40,1,0,0,0,0,128,0,-1--1--1,,1|(714,695)|
1,46,36,42,1,0,0,0,0,128,0,-1--1--1,,1|(837,759)|
1,47,42,43,1,0,0,0,0,128,0,-1--1--1,,1|(966,741)|
1,48,36,43,1,0,0,0,0,128,0,-1--1--1,,1|(917,634)|
1,49,43,44,1,0,0,0,0,128,0,-1--1--1,,1|(905,828)|
1,50,44,40,1,0,0,0,0,128,0,-1--1--1,,1|(672,778)|
10,51,Initial Exponential Discounting t 1,789,579,57,18,8,3,0,0,0,0,0,0,0,0,0,0,0,0
1,52,51,36,0,1,0,0,0,128,1,-1--1--1,,1|(788,604)|
10,53,Time,935,1063,24,10,8,2,1,3,-1,0,0,0,128-128-128,0-0-0,|10||128-128-128,0,0,0,0,0,0
10,54,Time,1437,812,24,10,8,2,1,3,-1,0,0,0,128-128-128,0-0-0,|10||128-128-128,0,0,0,0,0,0
1,55,54,41,1,1,0,0,0,64,0,-1--1--1,,1|(936,602)|
1,56,53,43,1,1,0,0,0,128,0,-1--1--1,,1|(986,691)|
10,57,TIME STEP,1337,790,40,10,8,2,1,3,-1,0,0,0,128-128-128,0-0-0,|10||128-128-128,0,0,0,0,0,0
1,58,57,41,1,1,0,0,0,64,0,-1--1--1,,1|(951,577)|
1,59,27,44,1,0,0,0,0,128,0,-1--1--1,,1|(672,860)|
10,60,"Utility ( u )",1135,465,58,10,8,3,0,0,0,0,0,0,0,0,0,0,0,0
1,61,14,60,1,0,0,0,0,128,0,-1--1--1,,1|(1174,415)|
1,62,29,60,1,0,0,0,0,128,0,-1--1--1,,1|(1064,505)|
1,63,15,60,1,0,0,0,0,128,0,-1--1--1,,1|(1108,418)|
10,64,"Real Lifetime Utility ( U )",1298,569,45,24,3,131,0,0,0,0,0,0,0,0,0,0,0,0
12,65,48,1049,570,10,8,0,3,0,0,-1,0,0,0,0,0,0,0,0,0,0
1,66,68,64,4,0,0,22,0,0,0,-1--1--1,,1|(1209,566)|
1,67,68,65,100,0,0,22,0,0,0,-1--1--1,,1|(1107,566)|
11,68,48,1160,566,5,8,34,3,0,0,1,0,0,0,0,0,0,0,0,0,0
10,69,Real Instanteneous Utility,1160,607,46,27,40,131,0,0,-1,0,0,0,0,0,0,0,0,0,0
1,70,60,68,1,0,0,0,0,128,0,-1--1--1,,1|(1158,508)|
1,71,35,64,0,1,0,0,0,64,1,-1--1--1,,1|(1298,525)|
10,72,FINAL TIME,1198,606,44,10,8,2,1,3,-1,0,0,0,128-128-128,0-0-0,|10||128-128-128,0,0,0,0,0,0
10,73,Time,1305,617,24,10,8,2,1,3,-1,0,0,0,128-128-128,0-0-0,|10||128-128-128,0,0,0,0,0,0
10,74,TIME STEP,839,548,40,10,8,2,1,3,-1,0,0,0,128-128-128,0-0-0,|10||128-128-128,0,0,0,0,0,0
10,75,Consumption,1089,190,43,10,8,3,0,0,0,0,0,0,0,0,0,0,0,0
10,76,Retirement Time,1026,84,59,10,8,2,0,3,-1,0,0,0,128-128-128,0-0-0,|10||128-128-
128,0,0,0,0,0,0
1,77,76,75,1,0,0,0,0,128,0,-1--1--1,,1|(1059,114)|
10,78,INITIAL TIME,1185,114,48,10,8,2,0,3,-1,0,0,0,128-128-128,0-0-0,|10||128-128-128,0,0,0,0,0,0
10,79,FINAL TIME,1235,180,44,10,8,2,0,3,-1,0,0,0,128-128-128,0-0-0,|10||128-128-128,0,0,0,0,0,0
1,80,78,75,1,0,0,0,0,128,0,-1--1--1,,1|(1129,137)|
1,81,79,75,1,0,0,0,0,128,0,-1--1--1,,1|(1159,174)|
1,82,75,10,1,0,0,0,0,128,0,-1--1--1,,1|(982,250)|
10,83,"Normal Labor Income (Y)",929,145,48,18,8,2,0,3,-1,0,0,0,128-128-128,0-0-0,|10||128-128-
128,0,0,0,0,0,0
1,84,83,75,1,0,0,0,0,128,0,-1--1--1,,1|(1012,153)|
1,85,11,60,1,0,0,0,0,128,0,-1--1--1,,1|(964,416)|
10,86,"Initial Wealth ( W )",1112,279,66,15,8,130,0,3,-1,0,0,0,128-128-128,0-0-0,|10||128-128-
128,0,0,0,0,0,0
10,87,MPC,821,188,16,10,8,3,0,0,0,0,0,0,0,0,0,0,0,0
1,88,5,87,1,0,0,0,0,128,0,-1--1--1,,1|(697,264)|
```

1,89,10,87,1,0,0,0,0,128,0,-1--1--1,,1|(898,251)|
1,90,86,75,1,0,0,0,0,128,0,-1--1--1,,1|(1119,239)|
1,91,44,69,1,0,0,0,0,128,0,-1--1--1,,1|(878,866)|