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LAMPIRAN

Lampiran 1. Program 1 – simulasi.m

```
function Kontrol
=simulasi(lamda,miu,u11,u111,u1111,uu1,uuu1,uuu2,uu2,tau,gamma,phi
,delta,u22,u222,u2222,alpa,A,B,D,P0,C0,R0,RR0,Ta,TP0,sigma,eta)
M =300;
t=linspace(0,Ta,M+1);
h=Ta/M;
h2 = h/2;

P=zeros(1,M+1);
C=zeros(1,M+1);
R=zeros(1,M+1);
RR=zeros(1,M+1);
TP=zeros(1,M+1);

P1=zeros(1,M+1);
C1=zeros(1,M+1);
R1=zeros(1,M+1);
RR1=zeros(1,M+1);
TP1=zeros(1,M+1);

P2=zeros(1,M+1);
C2=zeros(1,M+1);
R2=zeros(1,M+1);
RR2=zeros(1,M+1);
TP2=zeros(1,M+1);

P3=zeros(1,M+1);
C3=zeros(1,M+1);
R3=zeros(1,M+1);
RR3=zeros(1,M+1);
TP3=zeros(1,M+1);

P4=zeros(1,M+1);
C4=zeros(1,M+1);
R4=zeros(1,M+1);
RR4=zeros(1,M+1);
TP4=zeros(1,M+1);

P5=zeros(1,M+1);
C5=zeros(1,M+1);
R5=zeros(1,M+1);
RR5=zeros(1,M+1);
TP5=zeros(1,M+1);

;
;
;
R0;
TP0;
```

```
P1(1)=P0;
C1(1)=C0;
R1(1)=R0;
RR1  (1)= RR0;
TP1(1)= TP0;

P2(1)=P0;
C2(1)=C0;
R2(1)=R0;
RR2(1)=RR0;
TP2(1)= TP0;

P3(1)=P0;
C3(1)=C0;
R3(1)=R0;
RR3(1)=RR0;
TP3(1)= TP0;

P4(1)=P0;
C4(1)=C0;
R4(1)=R0;
RR4(1)=RR0;
TP4(1)= TP0;

P5(1)=P0;
C5(1)=C0;
R5(1)=R0;
RR5(1)=RR0;
TP5(1)= TP0;

lambdaP=zeros(1,M+1);
lambdaC=zeros(1,M+1);
lambdaR=zeros(1,M+1);
lambdaRR=zeros(1,M+1);

u1=zeros(1,M+1);
u2=zeros(1,M+1);
kk=0
test=-1
deta=0.0001;

%while((tempu1>deta)&&(tempu2>deta))
while (test<0.1)
oldu1 = u1;
oldu2 = u2;

oldP  =P;
oldC  =C;
oldR  =R;
          =RR;

          daP =lambdaP;
          daC = lambdaC;
          daR = lambdaR;
          daRR = lambdaRR;
```

```
for i = 1:M
kk=kk+1;
oldu1 = u1;
oldu2 = u2;

N = TP(i)
N1= TP1(i)
fprintf('iterasi ke = %i \n ',kk)

%program dengan kontrol%
for i = 1:M

m1P = lamda- miu*P(i)- alpa*P(i)*(C(i)/N)+delta*RR(i);
m1C = alpa*P(i)*(C(i)/N)-miu*C(i)-phi*C(i)-(tau*C(i)*RR(i))/N;
m1R = phi*C(i)- miu*R(i)-sigma*u1(i)*R(i)-eta*u2(i)*R(i)-
(gamma*R(i)*RR(i))/N;
m1RR =
(gamma*R(i)*RR(i))/N+(tau*C(i)*RR(i))/N+sigma*u1(i)*R(i)+eta*u2(i)
*R(i)-miu*RR(i)-delta*RR(i);

m2P = lamda- miu*(P(i)+h2*m1P)-
alpa*(P(i)+h2*m1P)*((C(i)+h2*m1C)/N)+delta*(RR(i)+h2*m1RR);
m2C = alpa*(P(i)+h2*m1P)*((C(i)+h2*m1C)/N)-miu*(C(i)+h2*m1C)-
phi*(C(i)+h2*m1C)-(tau*(C(i)+h2*m1C)*(RR(i)+h2*m1RR))/N;
m2R = phi*(C(i)+h2*m1C)- miu*(R(i)+h2*m1R)-
sigma*0.5*(u1(i)+u1(i+1))*(R(i)+h2*m1R)-
eta*0.5*(u2(i)+u2(i+1))*(R(i)+h2*m1R)-
(gamma*(R(i)+h2*m1R)*(RR(i)+h2*m1RR)/N);
m2RR =
(gamma*(R(i)+h2*m1R)*(RR(i)+h2*m1RR))/N+(tau*(C(i)+h2*m1C)*(RR(i)+
h2*m1RR))/N+sigma*0.5*(u1(i)+u1(i+1))*(R(i)+h2*m1R)+eta*0.5*(u2(i)
+u2(i+1))*(R(i)+h2*m1R)-miu*(RR(i)+h2*m1RR)-delta*(RR(i)+h2*m1RR);

m3P = lamda- miu*(P(i)+h2*m2P)-
alpa*(P(i)+h2*m2P)*((C(i)+h2*m2C)/N)+delta*(RR(i)+h2*m2RR);
m3C = alpa*(P(i)+h2*m2P)*((C(i)+h2*m2C)/N)-miu*(C(i)+h2*m2C)-
phi*(C(i)+h2*m2C)-(tau*(C(i)+h2*m2C)*(RR(i)+h2*m2RR))/N;
m3R = phi*(C(i)+h2*m2C)- miu*(R(i)+h2*m2R)-
sigma*0.5*(u1(i)+u1(i+1))*(R(i)+h2*m2R)-
eta*0.5*(u2(i)+u2(i+1))*(R(i)+h2*m2R)-
(gamma*(R(i)+h2*m2R)*(RR(i)+h2*m2RR)/N);
m3RR =
(gamma*(R(i)+h2*m2R)*(RR(i)+h2*m2RR))/N+(tau*(C(i)+h2*m2C)*(RR(i)+
h2*m2RR))/N+sigma*0.5*(u1(i)+u1(i+1))*(R(i)+h2*m2R)+eta*0.5*(u2(i)
+u2(i+1))*(R(i)+h2*m2R)-miu*(RR(i)+h2*m2RR)-delta*(RR(i)+h2*m2RR);

m4P = lamda- miu*(P(i)+h*m3P)-
alpa*(P(i)+h*m3P)*((C(i)+h*m3C)/N)+delta*(RR(i)+h*m3RR);
        lpa*(P(i)+h*m3P)*((C(i)+h*m3C)/N)-miu*(C(i)+h*m3C)-
        i)+h*m3C)-(tau*(C(i)+h*m3C)*(RR(i)+h*m3RR))/N;
        hi*(C(i)+h*m3C)- miu*(R(i)+h*m3R)-
        .5*(u1(i)+u1(i+1))*(R(i)+h*m3R)-
        *(u2(i)+u2(i+1))*(R(i)+h*m3R)-
        R(i)+h*m3R)*(RR(i)+h*m3RR)/N;
```

```
m4RR =
(gamma*(R(i)+h*m3R)*(RR(i)+h*m3RR))/N+(tau*(C(i)+h*m3C)*(RR(i)+h*m
3RR))/N+sigma*0.5*(u1(i)+u1(i+1))*(R(i)+h*m3R)+eta*0.5*(u2(i)+u2(i
+1))*(R(i)+h*m3R)-miu*(RR(i)+h*m3RR)-delta*(RR(i)+h*m3RR);

P(i+1)  = P(i)  +  (h/6)*(m1P + 2*m2P + 2*m3P + m4P );
C(i+1)  = C(i)  +  (h/6)*(m1C + 2*m2C + 2*m3C + m4C );
R(i+1)  = R(i)  +  (h/6)*(m1R + 2*m2R + 2*m3R  + m4R);
RR(i+1)= RR(i)+(h/6)*(m1RR + 2*m2RR + 2*m3RR +m4RR );

TP(i+1)= P(i+1)+ C(i+1)+ R(i+1)+ RR(i+1);

end
for i = 1:M
j = M + 2 - i;

m1P = (lambdaP(j)-lambdaC(j)).*(alpa*C(j)/N)+miu*lambdaP(j);
m1C = (lambdaP(j)-lambdaC(j))*(alpa*P(j)/N)+(lambdaC(j)-
lambdaR(j))*phi+(lambdaC(j)-
lambdaRR(j))*(tau*RR(j)/N)+miu*lambdaC(j);
m1R = -A+(lambdaR(j)-
lambdaRR(j))*(gamma*RR(j)/N+sigma*u1(j)+eta*u2(j))+miu*lambdaR(j);
m1RR = (lambdaRR(j)-lambdaP(j))*(delta)+(lambdaRR(j)-
lambdaC(j))*(-tau*C(j)/N)+(lambdaRR(j)-lambdaR(j))*(-
gamma*P(j)/N)+miu*lambdaRR(j);

m2P = ((lambdaP(j)-h2*m1P)-(lambdaC(j)-h2*m1C)).*(alpa*(C(j)+C(j-
1))/N)+miu*(lambdaP(j)-h2*m1P);
m2C = ((lambdaP(j)-h2*m1P)-(lambdaC(j)-h2*m1C))*(alpa*(P(j)+P(j-
1))/N)+((lambdaC(j)-h2*m1C)-(lambdaR(j)-h2*m1R))*phi+((lambdaC(j)-
h2*m1C)-(lambdaRR(j)-h2*m1RR))*(tau*(RR(j)+RR(j-
1))/N)+miu*(lambdaC(j)-h2*m1C);
m2R = -A+((lambdaR(j)-h2*m1R)-(lambdaRR(j)-
h2*m1RR))*(gamma*(RR(j)+RR(j-1))/N+sigma*0.5.*(u1(j)+u1(j-
1))+eta*0.5.*(u2(j)+u2(j-1)))+miu*(lambdaR(j)-h2*m1R);
m2RR= ((lambdaRR(j)-h2*m1RR)-(lambdaP(j)-
h2*m1P))*(delta)+((lambdaRR(j)-h2*m1RR)-(lambdaC(j)-h2*m1C))*(-
tau*(C(j)+C(j-1))/N)+((lambdaRR(j)-h2*m1RR)-(lambdaR(j)-
h2*m1R))*(-gamma*(P(j)+P(j-1))/N)+miu*(lambdaRR(j)-h2*m1RR);

m3P = ((lambdaP(j)-h2*m2P)-(lambdaC(j)-h2*m2C)).*(alpa*(C(j)+C(j-
1))/N)+miu*(lambdaP(j)-h2*m2P);
m3C = ((lambdaP(j)-h2*m2P)-(lambdaC(j)-h2*m2C))*(alpa*(P(j)+P(j-
1))/N)+((lambdaC(j)-h2*m2C)-(lambdaR(j)-h2*m2R))*phi+((lambdaC(j)-
h2*m2C)-(lambdaRR(j)-h2*m2RR))*(tau*(RR(j)+RR(j-
1))/N)+miu*(lambdaC(j)-h2*m2C);
m3R = -A+((lambdaR(j)-h2*m2R)-(lambdaRR(j)-
h2*m2RR))*(gamma*(RR(j)+RR(j-1))/N+sigma*0.5*(u1(j)+u1(j-
1))+eta*0.5*(u2(j)+u2(j-1)))+miu*(lambdaR(j)-h2*m2R);
            (lambdaRR(j)-h2*m2RR)-(lambdaP(j)-
            )*(delta)+((lambdaRR(j)-h2*m2RR)-(lambdaC(j)-h2*m2C))*(-
            j)+C(j-1))/N)+((lambdaRR(j)-h2*m2RR)-(lambdaR(j)-
            )*(-gamma*(P(j)+P(j-1))/N)+miu*(lambdaRR(j)-h2*m2RR);
```

```
m4P = ((lambdaP(j)-h*m3P)-(lambdaC(j)-h*m3C)).*(alpa*(C(j)+C(j-
1))/N)+miu*(lambdaP(j)-h*m3P);
m4C = ((lambdaP(j)-h*m3P)-(lambdaC(j)-h*m3C))*(alpa*(P(j)+P(j-
1))/N)+((lambdaC(j)-h*m3C)-(lambdaR(j)-h*m3R))*phi+((lambdaC(j)-
h*m3C)-(lambdaRR(j)-h*m3RR))*(tau*(RR(j)+RR(j-
1))/N)+miu*(lambdaC(j)-h*m3C);
m4R = -A+((lambdaR(j)-h*m3R)-(lambdaRR(j)-
h*m3RR))*(gamma*(RR(j)+RR(j-1))/N+sigma*0.5*(u1(j)+u1(j-
1))+eta*0.5*(u2(j)+u2(j-1)))+miu*(lambdaR(j)-h*m3R);
m4RR= ((lambdaRR(j)-h*m3RR)-(lambdaP(j)-
h*m3P))*(delta)+((lambdaRR(j)-h*m3RR)-(lambdaC(j)-h*m3C))*(-
tau*(C(j)+C(j-1))/N)+((lambdaRR(j)-h*m3RR)-(lambdaR(j)-h*m3R))*(-
gamma*(P(j)+P(j-1))/N)+miu*(lambdaRR(j)-h*m3RR);

lambdaP(j-1)  = lambdaP(j)-  (h/6)*(m1P + 2*m2P + 2*m3P + m4P );
lambdaC(j-1)  = lambdaC(j)  -  (h/6)*(m1C + 2*m2C + 2*m3C +m4C );
lambdaR(j-1)  = lambdaR(j)  -  (h/6)*(m1R + 2*m2R + 2*m3R +m4R);
lambdaRR(j-1)= lambdaRR(j)  -  (h/6)*(m1RR + 2*m2RR + 2*m3RR +m4RR);

u1(j)= min(1,max(0,((lambdaR(j)-lambdaRR(j))*sigma.*R(i)/B)));
u2(j)= min(1,max(0,((lambdaR(j)-lambdaRR(j))*eta.*R(i)/D)));

end
for i = 1:M

m1P1 = lamda- miu*P1(i)- alpa*P1(i)*(C1(i)/N1)+delta*RR1(i);
m1C1 = alpa*P1(i)*(C1(i)/N1)-miu*C1(i)-phi*C1(i)-
(tau*C1(i)*RR1(i))/N1;
m1R1 = phi*C1(i)- miu*R1(i)-sigma*u11*R1(i)-eta*u22*R1(i)-
(gamma*R1(i)*RR1(i))/N1;
m1RR1 =
(gamma*R1(i)*RR1(i))/N1+(tau*C1(i)*RR1(i))/N1+sigma*u11*R1(i)+eta*
u22*R1(i)-miu*RR1(i)-delta*RR1(i);

m2P1 = lamda- miu*(P1(i)+h2*m1P1)-
alpa*(P1(i)+h2*m1P1)*((C1(i)+h2*m1C1)/N1)+delta*(RR1(i)+h2*m1RR1);
m2C1 = alpa*(P1(i)+h2*m1P1)*((C1(i)+h2*m1C1)/N1)-
miu*(C1(i)+h2*m1C1)-phi*(C1(i)+h2*m1C1)-
(tau*(C1(i)+h2*m1C1)*(RR1(i)+h2*m1RR1))/N1;
m2R1 = phi*(C1(i)+h2*m1C1)- miu*(R1(i)+h2*m1R1)-
sigma*u11*(R1(i)+h2*m1R1)-eta*u22*(R1(i)+h2*m1R1)-
(gamma*(R1(i)+h2*m1R1)*(RR1(i)+h2*m1RR1))/N1;
m2RR1 =
(gamma*(R1(i)+h2*m1R1)*(RR1(i)+h2*m1RR1))/N1+(tau*(C1(i)+h2*m1C1)*
(RR1(i)+h2*m1RR1))/N1+sigma*u11*(R1(i)+h2*m1R1)+eta*u22*(R1(i)+h2*
m1R1)-miu*(RR1(i)+h2*m1RR1)-delta*(RR1(i)+h2*m1RR1);

m3P1 = lamda- miu*(P1(i)+h2*m2P1)-
alpa*(P1(i)+h2*m2P1)*((C1(i)+h2*m2C1)/N1)+delta*(RR1(i)+h2*m2RR1);
        alpa*(P1(i)+h2*m2P1)*((C1(i)+h2*m2C1)/N1)-
        (i)+h2*m2C1)-phi*(C1(i)+h2*m2C1)-
        1(i)+h2*m2C1)*(RR1(i)+h2*m2RR1))/N1;
        phi*(C1(i)+h2*m2C1)- miu*(R1(i)+h2*m2R1)-
        11*(R1(i)+h2*m2R1)-eta*u22*(R1(i)++h2*m2R1)-
        (R1(i)+h2*m2R1)*(RR1(i)+h2*m2RR1))/N1;
```

```
m3RR1 =
(gamma*(R1(i)+h2*m2R1)*(RR1(i)+h2*m2RR1))/N1+(tau*(C1(i)+h2*m2C1)*
(RR1(i)+h2*m2RR1))/N1+sigma*u11*(R1(i)+h2*m2R1)+eta*u22*(R1(i)+h2*
m2R1)-miu*(RR1(i)+h2*m2RR1)-delta*(RR1(i)+h2*m2RR1);

m4P1 = lamda- miu*(P1(i)+h*m3P1)-
alpa*(P1(i)+h*m3P1)*((C1(i)+h*m3C1)/N1)+delta*(RR1(i)+h*m3RR1);
m4C1 = alpa*(P1(i)+h*m3P1)*((C1(i)+h*m3C1)/N1)-miu*(C1(i)+h*m3C1)-
phi*(C1(i)+h*m3C1)-(tau*(C1(i)+h*m3C1)*(RR1(i)+h*m3RR1))/N1;
m4R1 = phi*(C1(i)+h*m3C1)- miu*(R1(i)+h*m3R1)-
sigma*u11*(R1(i)+h*m3R1)-eta*u22*(R1(i)++h*m3R1)-
(gamma*(R1(i)+h*m3R1)*(RR1(i)+h*m3RR1))/N1;
m4RR1 =
(gamma*(R1(i)+h*m3R1)*(RR1(i)+h*m3RR1))/N1+(tau*(C1(i)+h*m3C1)*(RR
1(i)+h*m3RR1))/N1+sigma*u11*(R1(i)+h*m3R1)+eta*u22*(R1(i)+h*m3R1)-
miu*(RR1(i)+h*m3RR1)-delta*(RR1(i)+h*m3RR1);

P1(i+1)  = P1(i)  +  (h/6)*(m1P1  + 2*m2P1  + 2*m3P1  + m4P1);
C1(i+1)  = C1(i)  +  (h/6)*(m1C1  + 2*m2C1  + 2*m3C1  + m4C1 );
R1(i+1)  = R1(i)  +  (h/6)*(m1R1  + 2*m2R1  + 2*m3R1  + m4R1 );
RR1(i+1)  = RR1(i)  +  (h/6)*(m1RR1  + 2*m2RR1  + 2*m3RR1  + m4RR1);

TP1(i+1)= P1(i+1)+ C1(i+1)+ R1(i+1)+ RR1(i+1);

end%hhhhh
for i = 1:M

m1P2 = lamda- miu*P2(i)- alpa*P2(i)*(C2(i)/N1)+delta*RR2(i);
m1C2 = alpa*P2(i)*(C2(i)/N1)-miu*C2(i)-phi*C2(i)-
(tau*C2(i)*RR2(i))/N1;
m1R2 = phi*C2(i)- miu*R2(i)-sigma*u111*R2(i)-eta*u222*R2(i)-
(gamma*R2(i)*RR2(i))/N1;
m1RR2 =
(gamma*R2(i)*RR2(i))/N1+(tau*C2(i)*RR2(i))/N1+sigma*u111*R2(i)+eta
*u222*R2(i)-miu*RR2(i)-delta*RR2(i);

m2P2 = lamda- miu*(P2(i)+h2*m1P2)-
alpa*(P2(i)+h2*m1P2)*((C2(i)+h2*m1C2)/N1)+delta*(RR2(i)+h2*m1RR2);
m2C2 = alpa*(P2(i)+h2*m1P2)*((C2(i)+h2*m1C2)/N1)-
miu*(C2(i)+h2*m1C2)-phi*(C2(i)+h2*m1C2)-
(tau*(C2(i)+h2*m1C2)*(RR2(i)+h2*m1RR2))/N1;
m2R2 = phi*(C2(i)+h2*m1C2)- miu*(R2(i)+h2*m1R2)-
sigma*u111*(R2(i)+h2*m1R2)-eta*u222*(R2(i)+h2*m1R2)-
(gamma*(R2(i)+h2*m1R2)*(RR2(i)+h2*m1RR2))/N1;
m2RR2 =
(gamma*(R2(i)+h2*m1R2)*(RR2(i)+h2*m1RR2))/N1+(tau*(C2(i)+h2*m1C2)*
(RR2(i)+h2*m1RR2))/N1+sigma*u111*(R2(i)+h2*m1R2)+eta*u222*(R2(i)+h
2*m1R2)-miu*(RR2(i)+h2*m1RR2)-delta*(RR2(i)+h2*m1RR2);

            lamda- miu*(P2(i)+h2*m2P2)-
            2(i)+h2*m2P2)*((C2(i)+h2*m2C2)/N1)+delta*(RR2(i)+h2*m2RR2);
            alpa*(P2(i)+h2*m2P2)*((C2(i)+h2*m2C2)/N1)-
            (i)+h2*m2C2)-phi*(C2(i)+h2*m2C2)-
            2(i)+h2*m2C2)*(RR2(i)+h2*m2RR2))/N1;
```

```
m3R2 = phi*(C2(i)+h2*m2C2)- miu*(R2(i)+h2*m2R2)-
sigma*u111*(R2(i)+h2*m2R2)-eta*u222*(R2(i)+h2*m2R2)-
(gamma*(R2(i)+h2*m2R2)*(RR2(i)+h2*m2RR2))/N1;
m3RR2 =
(gamma*(R2(i)+h2*m2R2)*(RR2(i)+h2*m2RR2))/N1+(tau*(C2(i)+h2*m2C2)*
(RR2(i)+h2*m2RR2))/N1+sigma*u111*(R2(i)+h2*m2R2)+eta*u222*(R2(i)+h
2*m2R2)-miu*(RR2(i)+h2*m2RR2)-delta*(RR2(i)+h2*m2RR2);

m4P2 = lamda- miu*(P2(i)+h*m3P2)-
alpa*(P2(i)+h*m3P2)*((C2(i)+h*m3C2)/N1)+delta*(RR2(i)+h*m3RR2);
m4C2 = alpa*(P2(i)+h*m3P2)*((C2(i)+h*m3C2)/N1)-miu*(C2(i)+h*m3C2)-
phi*(C2(i)+h*m3C2)-(tau*(C2(i)+h*m3C2)*(RR2(i)+h*m3RR2))/N1;
m4R2 = phi*(C2(i)+h*m3C2)- miu*(R2(i)+h*m3R2)-
sigma*u111*(R2(i)+h*m3R2)-eta*u222*(R2(i)+h*m3R2)-
(gamma*(R2(i)+h*m3R2)*(RR2(i)+h*m3RR2))/N1;
m4RR2 =
(gamma*(R2(i)+h*m3R2)*(RR2(i)+h*m3RR2))/N1+(tau*(C2(i)+h*m3C2)*(RR
2(i)+h*m3RR2))/N1+sigma*u111*(R2(i)+h*m3R2)+eta*u222*(R2(i)+h*m3R2
)-miu*(RR2(i)+h*m3RR2)-delta*(RR2(i)+h*m3RR2);

P2(i+1) = P2(i) + (h/6)*(m1P2 + 2*m2P2 + 2*m3P2 + m4P2);
C2(i+1) = C2(i) + (h/6)*(m1C2 + 2*m2C2 + 2*m3C2 + m4C2);
R2(i+1) = R2(i) + (h/6)*(m1R2 + 2*m2R2 + 2*m3R2 + m4R2);
RR2(i+1) = RR2(i) + (h/6)*(m1RR2 + 2*m2RR2 + 2*m3RR2 + m4RR2);

P2(i+1)= P2(i+1)+ C2(i+1)+ R2(i+1)+RR2(i+1);

end
%%%%%3333
for i = 1:M

m1P3 = lamda- miu*P3(i)- alpa*P3(i)*(C3(i)/N1)+delta*RR3(i);
m1C3 = alpa*P3(i)*(C3(i)/N1)-miu*C3(i)-phi*C3(i)-
(tau*C3(i)*RR3(i))/N1;
m1R3 = phi*C3(i)- miu*R3(i)-sigma*u1111*R3(i)-eta*u2222*R3(i)-
(gamma*R3(i)*RR3(i))/N1;
m1RR3 =
(gamma*R3(i)*RR3(i))/N1+(tau*C3(i)*RR3(i))/N1+sigma*u1111*R3(i)+et
a*u2222*R3(i)-miu*RR3(i)-delta*RR3(i);

m2P3 = lamda- miu*(P3(i)+h2*m1P3)-
alpa*(P3(i)+h2*m1P3)*((C3(i)+h2*m1C3)/N1)+delta*(RR3(i)+h2*m1RR3);
m2C3 = alpa*(P3(i)+h2*m1P3)*((C3(i)+h2*m1C3)/N1)-
miu*(C3(i)+h2*m1C3)-phi*(C3(i)+h2*m1C3)-
(tau*(C3(i)+h2*m1C3)*(RR3(i)+h2*m1RR3))/N1;
m2R3 = phi*(C3(i)+h2*m1C3)- miu*(R3(i)+h2*m1R3)-
sigma*u1111*(R3(i)+h2*m1R3)-eta*u2222*(R3(i)+h2*m1R3)-
(gamma*(R3(i)+h2*m1R3)*(RR3(i)+h2*m1RR3))/N1;
m2RR3 =
(        (R3(i)+h2*m1R3)*(RR3(i)+h2*m1RR3))/N1+(tau*(C3(i)+h2*m1C3)*
         +h2*m1RR3))/N1+sigma*u1111*(R3(i)+h2*m1R3)+eta*u2222*(R3(i)
         3)-miu*(RR3(i)+h2*m1RR3)-delta*(RR3(i)+h2*m1RR3);
```

```
m3P3 = lamda- miu*(P3(i)+h2*m2P3)-
alpa*(P3(i)+h2*m2P3)*((C3(i)+h2*m2C3)/N1)+delta*(RR3(i)+h2*m2RR3);
m3C3 = alpa*(P3(i)+h2*m2P3)*((C3(i)+h2*m2C3)/N1)-
miu*(C3(i)+h2*m2C3)-phi*(C3(i)+h2*m2C3)-
(tau*(C3(i)+h2*m2C3)*(RR3(i)+h2*m2RR3))/N1;
m3R3 = phi*(C3(i)+h2*m2C3)- miu*(R3(i)+h2*m2R3)-
sigma*u1111*(R3(i)+h2*m2R3)-eta*u2222*(R3(i)+h2*m2R3)-
(gamma*(R3(i)+h2*m2R3)*(RR3(i)+h2*m2RR3))/N1;
m3RR3 =
(gamma*(R3(i)+h2*m2R3)*(RR3(i)+h2*m2RR3))/N1+(tau*(C3(i)+h2*m2C3)*
(RR3(i)+h2*m2RR3))/N1+sigma*u1111*(R3(i)+h2*m2R3)+eta*u2222*(R3(i)
+h2*m2R3)-miu*(RR3(i)+h2*m2RR3)-delta*(RR3(i)+h2*m2RR3);

m4P3 = lamda- miu*(P3(i)+h*m3P3)-
alpa*(P3(i)+h*m3P3)*((C3(i)+h*m3C3)/N1)+delta*(RR3(i)+h*m3RR3);
m4C3 = alpa*(P3(i)+h*m3P3)*((C3(i)+h*m3C3)/N1)-miu*(C3(i)+h*m3C3)-
phi*(C3(i)+h*m3C3)-(tau*(C3(i)+h*m3C3)*(RR3(i)+h*m3RR3))/N1;
m4R3 = phi*(C3(i)+h*m3C3)- miu*(R3(i)+h*m3R3)-
sigma*u1111*(R3(i)+h*m3R3)-eta*u2222*(R3(i)++h*m3R3)-
(gamma*(R3(i)+h*m3R3)*(RR3(i)+h*m3RR3))/N1;
m4RR3 =
(gamma*(R3(i)+h*m3R3)*(RR3(i)+h*m3RR3))/N1+(tau*(C3(i)+h*m3C3)*(RR
3(i)+h*m3RR3))/N1+sigma*u1111*(R3(i)+h*m3R3)+eta*u2222*(R3(i)+h*m3
R3)-miu*(RR3(i)+h*m3RR3)-delta*(RR3(i)+h*m3RR3);

P3(i+1)  = P3(i)  + (h/6)*(m1P3 + 2*m2P3 + 2*m3P3 + m4P3);
C3(i+1)  = C3(i)  + (h/6)*(m1C3 + 2*m2C3 + 2*m3C3 + m4C3);
R3(i+1)  = R3(i)  + (h/6)*(m1R3 + 2*m2R3 + 2*m3R3 + m4R3);
RR3(i+1)= RR3(i)+ (h/6)*(m1RR3 + 2*m2RR3 + 2*m3RR3 + m4RR3);

TP3(i+1)= P3(i+1)+ C3(i+1)+ R3(i+1)+ RR3(i+1);

end%hhhhh
for i = 1:M

m1P4 = lamda- miu*P4(i)- alpa*P4(i)*(C4(i)/N1)+delta*RR4(i);
m1C4 = alpa*P4(i)*(C4(i)/N1)-miu*C4(i)-phi*C4(i)-
(tau*C4(i)*RR4(i))/N1;
m1R4 = phi*C4(i)- miu*R4(i)-sigma*uu1*R4(i)-eta*uu2*R4(i)-
(gamma*R4(i)*RR4(i))/N1;
m1RR4 =
(gamma*R4(i)*RR4(i))/N1+(tau*C4(i)*RR4(i))/N1+sigma*uu1*R4(i)+eta*
uu2*R4(i)-miu*RR4(i)-delta*RR4(i);

m2P4 = lamda- miu*(P4(i)+h2*m1P4)-
alpa*(P4(i)+h2*m1P4)*((C4(i)+h2*m1C4)/N1)+delta*(RR4(i)+h2*m1RR4);
m2C4 = alpa*(P4(i)+h2*m1P4)*((C4(i)+h2*m1C4)/N1)-
miu*(C4(i)+h2*m1C4)-phi*(C4(i)+h2*m1C4)-
(tau*(C4(i)+h2*m1C4)*(RR4(i)+h2*m1RR4))/N1;
           hi*(C4(i)+h2*m1C4)- miu*(R4(i)+h2*m1R4)-
           1*(R4(i)+h2*m1R4)-eta*uu2*(R4(i)+h2*m1R4)-
           (R4(i)+h2*m1R4)*(RR4(i)+h2*m1RR4))/N1;

           (R4(i)+h2*m1R4)*(RR4(i)+h2*m1RR4))/N1+(tau*(C4(i)+h2*m1C4)*
```

```
(RR4(i)+h2*m1RR4))/N1+sigma*uu1*(R4(i)+h2*m1R4)+eta*uu2*(R4(i)+h2*
m1R4)-miu*(RR4(i)+h2*m1RR4)-delta*(RR4(i)+h2*m1RR4);

m3P4 = lamda- miu*(P4(i)+h2*m2P4)-
alpa*(P4(i)+h2*m2P4)*((C4(i)+h2*m2C4)/N1)+delta*(RR4(i)+h2*m2RR4);
m3C4 = alpa*(P4(i)+h2*m2P4)*((C4(i)+h2*m2C4)/N1)-
miu*(C4(i)+h2*m2C4)-phi*(C4(i)+h2*m2C4)-
(tau*(C4(i)+h2*m2C4)*(RR4(i)+h2*m2RR4))/N1;
m3R4 = phi*(C4(i)+h2*m2C4)- miu*(R4(i)+h2*m2R4)-
sigma*uu1*(R4(i)+h2*m2R4)-eta*uu2*(R4(i)+h2*m2R4)-
(gamma*(R4(i)+h2*m2R4)*(RR4(i)+h2*m2RR4))/N1;
m3RR4 =
(gamma*(R4(i)+h2*m2R4)*(RR4(i)+h2*m2RR4))/N1+(tau*(C4(i)+h2*m2C4)*
(RR4(i)+h2*m2RR4))/N1+sigma*uu1*(R4(i)+h2*m2R4)+eta*uu2*(R4(i)+h2*
m2R4)-miu*(RR4(i)+h2*m2RR4)-delta*(RR4(i)+h2*m2RR4);

m4P4 = lamda- miu*(P4(i)+h*m3P4)-
alpa*(P4(i)+h*m3P4)*((C4(i)+h*m3C4)/N1)+delta*(RR4(i)+h*m3RR4);
m4C4 = alpa*(P4(i)+h*m3P4)*((C4(i)+h*m3C4)/N1)-miu*(C4(i)+h*m3C4)-
phi*(C4(i)+h*m3C4)-(tau*(C4(i)+h*m3C4)*(RR4(i)+h*m3RR4))/N1;
m4R4 = phi*(C4(i)+h*m3C4)- miu*(R4(i)+h*m3R4)-
sigma*uu1*(R4(i)+h*m3R4)-eta*uu2*(R4(i)+h*m3R4)-
(gamma*(R4(i)+h*m3R4)*(RR4(i)+h*m3RR4))/N1;
m4RR4 =
(gamma*(R4(i)+h*m3R4)*(RR4(i)+h*m3RR4))/N1+(tau*(C4(i)+h*m3C4)*(RR
4(i)+h*m3RR4))/N1+sigma*uu1*(R4(i)+h*m3R4)+eta*uu2*(R4(i)+h*m3R4)-
miu*(RR4(i)+h*m3RR4)-delta*(RR4(i)+h*m3RR4);

P4(i+1)  = P4(i)  +  (h/6)*(m1P4  + 2*m2P4  + 2*m3P4  + m4P4);
C4(i+1)  = C4(i)  +  (h/6)*(m1C4  + 2*m2C4  + 2*m3C4  + m4C4);
R4(i+1)  = R4(i)  +  (h/6)*(m1R4  + 2*m2R4  + 2*m3R4  + m4R4);
RR4(i+1)= RR4(i)  +  (h/6)*(m1RR4  + 2*m2RR4  + 2*m3RR4  + m4RR4);

TP4(i+1)= P4(i+1)+ C4(i+1)+ R4(i+1)+ RR4(i+1);

end
%%%%555
%%%%%%%44444
for i = 1:M

m1P5 = lamda- miu*P5(i)- alpa*P5(i)*(C5(i)/N1)+delta*RR5(i);
m1C5 = alpa*P5(i)*(C5(i)/N1)-miu*C5(i)-phi*C5(i)-
(tau*C5(i)*RR5(i))/N1;
m1R5 = phi*C5(i)- miu*R5(i)-sigma*uuu1*R5(i)-eta*uuu2*R5(i)-
(gamma*R5(i)*RR5(i))/N1;
m1RR5 =
(gamma*R5(i)*RR5(i))/N1+(tau*C5(i)*RR5(i))/N1+sigma*uuu1*R5(i)+eta
*uuu2*R5(i)-miu*RR5(i)-delta*RR5(i);

       lamda- miu*(P5(i)+h2*m1P5)-
       5(i)+h2*m1P5)*((C5(i)+h2*m1C5)/N1)+delta*(RR5(i)+h2*m1RR5);
       alpa*(P5(i)+h2*m1P5)*((C5(i)+h2*m1C5)/N1)-
       (i)+h2*m1C5)-phi*(C5(i)+h2*m1C5)-
       5(i)+h2*m1C5)*(RR5(i)+h2*m1RR5))/N1;
```

```
m2R5 = phi*(C5(i)+h2*m1C5)- miu*(R5(i)+h2*m1R5)-
sigma*uuu1*(R5(i)+h2*m1R5)-eta*uuu2*(R5(i)+h2*m1R5)-
(gamma*(R5(i)+h2*m1R5)*(RR5(i)+h2*m1RR5))/N1;
m2RR5 =
(gamma*(R5(i)+h2*m1R5)*(RR5(i)+h2*m1RR5))/N1+(tau*(C5(i)+h2*m1C5)*
(RR5(i)+h2*m1RR5))/N1+sigma*uuu1*(R5(i)+h2*m1R5)+eta*uuu2*(R5(i)+h
2*m1R5)-miu*(RR5(i)+h2*m1RR5)-delta*(RR5(i)+h2*m1RR5);

m3P5 = lamda- miu*(P5(i)+h2*m2P5)-
alpa*(P5(i)+h2*m2P5)*((C5(i)+h2*m2C5)/N1)+delta*(RR5(i)+h2*m2RR5);
m3C5 = alpa*(P5(i)+h2*m2P5)*((C5(i)+h2*m2C5)/N1)-
miu*(C5(i)+h2*m2C5)-phi*(C5(i)+h2*m2C5)-
(tau*(C5(i)+h2*m2C5)*(RR5(i)+h2*m2RR5))/N1;
m3R5 = phi*(C5(i)+h2*m2C5)- miu*(R5(i)+h2*m2R5)-
sigma*uuu1*(R5(i)+h2*m2R5)-eta*uuu2*(R5(i)+h2*m2R5)-
(gamma*(R5(i)+h2*m2R5)*(RR5(i)+h2*m2RR5))/N1;
m3RR5 =
(gamma*(R5(i)+h2*m2R5)*(RR5(i)+h2*m2RR5))/N1+(tau*(C5(i)+h2*m2C5)*
(RR5(i)+h2*m2RR5))/N1+sigma*uuu1*(R5(i)+h2*m2R5)+eta*uuu2*(R5(i)+h
2*m2R5)-miu*(RR5(i)+h2*m2RR5)-delta*(RR5(i)+h2*m2RR5);

m4P5 = lamda- miu*(P5(i)+h*m3P5)-
alpa*(P5(i)+h*m3P5)*((C5(i)+h*m3C5)/N1)+delta*(RR5(i)+h*m3RR5);
m4C5 = alpa*(P5(i)+h*m3P5)*((C5(i)+h*m3C5)/N1)-miu*(C5(i)+h*m3C5)-
phi*(C5(i)+h*m3C5)-(tau*(C5(i)+h*m3C5)*(RR5(i)+h*m3RR5))/N1;
m4R5 = phi*(C5(i)+h*m3C5)- miu*(R5(i)+h*m3R5)-
sigma*uuu1*(R5(i)+h*m3R5)-eta*uuu2*(R5(i)+h*m3R5)-
(gamma*(R5(i)+h*m3R5)*(RR5(i)+h*m3RR5))/N1;
m4RR5 =
(gamma*(R5(i)+h*m3R5)*(RR5(i)+h*m3RR5))/N1+(tau*(C5(i)+h*m3C5)*(RR
5(i)+h*m3RR5))/N1+sigma*uuu1*(R5(i)+h*m3R5)+eta*uuu2*(R5(i)+h*m3R5
)-miu*(RR5(i)+h*m3RR5)-delta*(RR5(i)+h*m3RR5);

P5(i+1)  = P5(i)  +  (h/6)*(m1P5  + 2*m2P5  + 2*m3P5  + m4P5);
C5(i+1)  = C5(i)  +  (h/6)*(m1C5  + 2*m2C5  + 2*m3C5  + m4C5);
R5(i+1)  = R5(i)  +  (h/6)*(m1R5  + 2*m2R5  + 2*m3R5  + m4R5);
RR5(i+1)  = RR5(i)  +  (h/6)*(m1RR5  + 2*m2RR5  + 2*m3RR5  + m4RR5);

TP5(i+1)= P5(i+1)+ C5(i+1)+ R5(i+1)+RR5(i+1);

end
%%%%%
temp1 =(lambdaR(j)-lambdaRR(j)).*R*sigma/B;
temp2 =(lambdaR(j)-lambdaRR(j)).*R*eta/D;

ua = min(1,max(0,temp1));
ub = min(1,max(0,temp2));

u1 = 0.5*(ua + oldu1);
                5*(ub + oldu2);

               1 = deta*sum(abs(u1)) - sum(abs(oldu1 - u1));
               2 = deta*sum(abs(u2)) - sum(abs(oldu2 - u2));

                = deta*sum(abs(P)) - sum(abs(oldP - P));
```

```
   tempC = deta*sum(abs(C)) - sum(abs(oldC - C));
   tempR = deta*sum(abs(R)) - sum(abs(oldR - R));
  tempRR = deta*sum(abs(RR)) - sum(abs(oldRR - RR));

   templP = deta*sum(abs(lambdaP)) - sum(abs(oldlambdaP -
lambdaP));
   templC = deta*sum(abs(lambdaC)) - sum(abs(oldlambdaC -
lambdaC));
   templR = deta*sum(abs(lambdaR)) - sum(abs(oldlambdaR -
lambdaR));
   templRR = deta*sum(abs(lambdaRR)) - sum(abs(oldlambdaRR -
lambdaRR));

   test1= min(min(tempP,tempC),tempR);

test = min (test1,tempRR);

disp(['it: ', num2str(kk),', Test: ', num2str(test)]);

end
end
fprintf('jumlah iterasi = %i ',kk)
Kontrol(1,:) = t;
Kontrol(2,:) = P;
Kontrol(3,:) = C;
Kontrol(4,:) = R;
Kontrol(5,:) = RR;

Kontrol(6,:) = u1;
Kontrol(7,:) = u2;

Kontrol(8,:) = P1;
Kontrol(9,:) = C1;
Kontrol(10,:) = R1;
Kontrol(11,:) = RR1;

Kontrol(12,:)= TP;
Kontrol(13,:)= TP1;
Kontrol(14,:) = P2;
Kontrol(15,:) = C2;
Kontrol(16,:) = R2;
Kontrol(17,:) = RR2;

Kontrol(18,:) = P3;
Kontrol(19,:) = C3;
Kontrol(20,:) = R3;
Kontrol(21,:) = RR3;

Kontrol(22,:) = P4;
       (23,:) = C4;
       (24,:) = R4;
       (25,:) = RR4;

       (26,:)= TP2;
```

```
Kontrol(27,:)= TP3;
Kontrol(28,:)= TP4;
fprintf('Hasil Akhir = Ko(:,end) ')
```

Lampiran 2. Program 2 – simulasi_thesis.m

```
close
clear
clc
pilih1=0;
pilih2=0;

lamda = 150000;
miu = 0.3;
eta=0.01;
sigma=0.5;
u11=0;
u111=0.28;
u1111=0.56;
uu1=0.28;
uuu1=0.28;
gamma = 0.01;
delta = 0.021;

u22 =0;
u222=0.28;
u2222=0.56;
uu2=0.28;
uuu2=0.28;

alpa=0.05;

phi=0.0055;
tau=0.01;

%N =TP0= 2000;
A=50;
B=15;
D=25;

P0 = 400000;
C0 = 90000;
R0 = 3000;
RR0= 7000;
Ta = 10;

TP0 = 500000;
%du22=0.001;


       i(lamda,miu,u11,u111,u1111,uu1,uuu1,tau,gamma,phi,delta,uuu
       22,u222,u2222,alpa,A,B,D,P0,C0,R0,RR0,Ta,TP0,sigma,eta);

       ')
```

```
clc
while(pilih1==0)
disp('=======================================================')
disp('  PILIH GRAFIK HASIL SIMULASI YANG INGIN DITAMPILKAN   ')
disp('                ATAU MENGAKHIRI SIMULASI                ')
disp('=======================================================')
disp('')
disp(' 1. INDIVIDU RENTAN KORUPSI')
disp(' 2. INDIVIDU KORUPSI BIASA')
disp(' 3. INDIVIDU KORUPSI POLITIK ')
disp(' 4. INDIVIDU RECOVER ')
disp(' 5. TINGKAT KONTROL U1 DAN U2')
disp(' 6. SELESAI')
disp('')
disp('')
pilih2=input('SILAHKAN PILIH 1, 2, 3, 4, 5, 6 : ');
disp('')
disp('')
if pilih2==1

plot(Koo(1,:),Koo(2,:),'--
black',Koo(1,:),Koo(8,:),'red','linewidth',2)
hold on
plot(Koo(1,:),Koo(18,:),'b',Koo(1,:),Koo(22,:),'g','linewidth',2)

xlabel('Waktu (dalam tahun)')
ylabel('S(t)')
legend('S dengan Kontrol Optimal','S tanpa Kontrol','S dengan
Kontrol Konstan Kasus 1','S dengan Kontrol Konstan Kasus 2')
grid on;

pilih1=0;
elseif(pilih2==2)
plot(Koo(1,:),Koo(3,:),'--
black',Koo(1,:),Koo(9,:),'red','linewidth',2)
hold on
plot(Koo(1,:),Koo(19,:),'b','linewidth',2)
hold on
plot (Koo(1,:),Koo(23,:),'g','linewidth',2)

xlabel('Waktu (dalam tahun)')
ylabel('C(t)')
legend('C dengan Kontrol Optimal','C tanpa Kontrol','C dengan
Kontrol Konstan Kasus 1','C dengan Kontrol Konstan Kasus 2')
grid on;

pilih1=0;
elseif(pilih2==3)
%figure 1
        o(1,:),Koo(4,:),'--
        Koo(1,:),Koo(10,:),'red','linewidth',2)

        o(1,:),Koo(24,:),'g','linewidth',2)

        o(1,:),Koo(20,:),'b','linewidth',2)
```

```
xlabel('Waktu (dalam tahun)')
ylabel('P(t)')
legend('P dengan Kontrol Optimal','P tanpa Kontrol','P dengan
Kontrol Konstan Kasus 2','P dengan Kontrol Konstan Kasus 1')
grid on;

pilih1=0;
elseif(pilih2==4)
%figure 1
plot(Koo(1,:),Koo(5,:),'--
black',Koo(1,:),Koo(11,:),'red','linewidth',2)
hold on
plot(Koo(1,:),Koo(25,:),'g','linewidth',2)
hold on
plot(Koo(1,:),Koo(21,:),'b','linewidth',2)

xlabel('Waktu (dalam tahun)')
ylabel('R(t)')
legend('R dengan Kontrol Optimal','R tanpa Kontrol','R dengan
Kontrol Konstan Kasus 2','R dengan Kontrol Konstan Kasus 1')
grid on;

pilih1=0;
elseif(pilih2==5)
%figure 1
plot(Koo(1,:),Koo(6,:),'blue',Koo(1,:),Koo(7,:),'red','linewidth',
3)
xlabel('waktu (dalam tahun),')
ylabel('u1*,u2* ')
legend('u1* Penindakan KPK','u2* Upaya Penyadaran Diri')
grid on;

pilih1=0;
elseif(pilih2==6)
pilih1=1;
end
end

clc

disp('')
disp('')
disp('')
disp('')
disp('HASIL AKHIR SIMULASI')
Koo(:,end)
pilih1=1;
disp('SELESAI')
```

Lampiran 3. Jumlahan Riemann pada Excel dengan 500 Iterasi

P1	P2	P3	P4	L
3000	3000	3000	3000	0,6
4099,97571	4140,63415	4166,43084	4191,438111	0,6
5121,31109	5215,51746	5274,53233	5332,094792	0,6
6068,17554	6227,43468	6326,46361	6423,617971	0,6
6944,53948	7179,06578	7324,31241	7467,606593	0,6
7754,18354	8072,98962	8270,09724	8465,612043	0,6
8500,70713	8911,68761	9165,76961	9419,139512	0,6
9187,53678	9697,54715	10013,2162	10329,64934	0,6
9817,93402	10432,865	10814,2607	11198,5583	0,6
10395,0029	11119,8505	11570,666	12027,24088	0,6
10921,6973	11760,6287	12284,1362	12817,03046	0,6
11400,8277	12357,2434	12956,3182	13569,22055	0,6
11835,0677	12911,6599	13588,8034	14285,06592	0,6
12226,9604	13425,7683	14183,1301	14965,78371	0,6
12578,9247	13901,3853	14740,7843	15612,55452	0,6
12893,2602	14340,2579	15263,2023	16226,52349	0,6
13172,1536	14744,0651	15751,7714	16808,80128	0,6
13417,6834	15114,4207	16207,8319	17360,46512	0,6
13631,8247	15452,8754	16632,6787	17882,55973	0,6
13816,4548	15760,9197	17027,5624	18376,09829	0,6
13973,3568	16039,9851	17393,691	18842,06333	0,6
14104,2245	16291,4471	17732,231	19281,40764	0,6
14210,6665	16516,6268	18044,309	19695,05511	0,6
14294,21	16716,793	18331,0127	20083,90158	0,6
14356,3047	16893,1639	18593,3924	20448,81565	0,6
14398,3263	17046,9094	18832,4618	20790,63944	0,6
14421,5803	17179,1524	19049,1998	21110,18942	0,6
14427,3048	17290,9705	19244,551	21408,25708	0,6
14416,6742	17383,3983	19419,427	21685,60973	0,6
14390,8016	17457,4281	19574,7078	21942,99112	0,6
14350,7422	17514,012	19711,2422	22181,12218	0,6
14297,4957	17554,0633	19829,8493	22400,70168	0,6
14232,0093	17578,458	19931,3192	22602,40685	0,6
14155,1797	17588,0357	20016,414	22786,89402	0,6
[illegible]7,856	17583,6017	20085,8689	22954,7992	0,6
[illegible],8415	17565,9276	20140,3927	23106,73873	0,6
[illegible],8964	17535,753	20180,6689	23243,3098	0,6
[illegible],7393	17493,7863	20207,3564	23365,09103	0,6

13629,0497	17440,7065	20221,0906	23472,64299	0,6
13500,4697	17377,1634	20222,4836	23566,50877	0,6
13365,6055	17303,7795	20212,1256	23647,21443	0,6
13225,0298	17221,1506	20190,585	23715,26955	0,6
13079,2828	17129,847	20158,4098	23771,16768	0,6
12928,8742	17030,4142	20116,1275	23815,38684	0,6
12774,2843	16923,3741	20064,2463	23848,38991	0,6
12615,9661	16809,226	20003,2559	23870,62516	0,6
12454,3457	16688,4469	19933,6272	23882,52661	0,6
12289,8246	16561,493	19855,8141	23884,51447	0,6
12122,7803	16428,8003	19770,2531	23876,99556	0,6
11953,5675	16290,7849	19677,3645	23860,36369	0,6
11782,5197	16147,8445	19577,5526	23835,00004	0,6
11609,9498	16000,3587	19471,2063	23801,27351	0,6
11436,1513	15848,6896	19358,6997	23759,54115	0,6
11261,3995	15693,183	19240,3926	23710,14843	0,6
11085,9519	15534,1683	19116,6307	23653,42963	0,6
10910,0496	15371,9598	18987,7466	23589,70816	0,6
10733,9181	15206,8568	18854,0598	23519,29688	0,6
10557,7676	15039,1446	18715,8771	23442,49839	0,6
10381,7945	14869,0947	18573,4935	23359,60538	0,6
10206,1817	14696,9657	18427,1921	23270,90088	0,6
10031,0992	14523,0033	18277,2448	23176,65859	0,6
9856,70516	14347,4415	18123,9125	23077,1431	0,6
9683,14627	14170,5025	17967,4458	22972,61022	0,6
9510,55839	13992,3973	17808,0847	22863,3072	0,6
9339,06717	13813,3264	17646,0599	22749,47301	0,6
9168,78858	13633,4799	17481,5921	22631,33857	0,6
8999,82944	13453,0382	17314,8931	22509,12702	0,6
8832,2879	13272,1722	17146,1659	22383,05389	0,6
8666,25396	13091,0437	16975,6048	22253,32742	0,6
8501,80985	12909,806	16803,3961	22120,1487	0,6
8339,03053	12728,6039	16629,7177	21983,71191	0,6
8177,98405	12547,5743	16454,7404	21844,20455	0,6
8018,73197	12366,8465	16278,6271	21701,80761	0,6
7861,32971	12186,5424	16101,5338	21556,69579	0,6
7705,82691	12006,7769	15923,6095	21409,03769	0,6
[illegible]6777	11827,6584	15744,9967	21258,99595	0,6
[illegible]9134	11649,2886	15565,8314	21106,72751	0,6
[illegible]3188	11471,7631	15386,2432	20952,38371	0,6
[illegible]1907	11295,1717	15206,3562	20796,11051	0,6

6958,17835	11119,5985	15026,2882	20638,04862	0,6
6814,83115	10945,1223	14846,152	20478,33368	0,6
6673,59513	10771,8165	14666,0547	20317,09642	0,6
6534,48443	10599,7499	14486,0983	20154,46279	0,6
6397,50988	10428,9864	14306,3799	19990,55412	0,6
6262,67922	10259,5854	14126,9919	19825,48726	0,6
6129,99731	10091,6021	13948,0219	19659,37472	0,6
5999,46626	9925,08738	13769,5531	19492,32482	0,6
5871,08571	9760,08843	13591,6647	19324,44177	0,6
5744,8529	9596,6486	13414,4314	19155,82585	0,6
5620,76291	9434,80766	13237,9243	18986,57352	0,6
5498,80876	9274,602	13062,2103	18816,77751	0,6
5378,98158	9116,06475	12887,353	18646,52698	0,6
5261,27075	8959,22596	12713,4123	18475,9076	0,6
5145,66402	8804,11271	12540,4448	18305,00167	0,6
5032,14763	8650,74929	12368,5036	18133,88823	0,6
4920,70643	8499,15732	12197,6389	17962,64315	0,6
4811,32402	8349,35588	12027,8978	17791,33925	0,6
4703,98278	8201,36162	11859,3245	17620,04639	0,6
4598,66407	8055,1889	11691,9606	17448,83154	0,6
4495,34823	7910,84991	11525,8446	17277,7589	0,6
4394,01471	7768,35475	11361,0128	17106,89001	0,6
4294,64216	7627,71156	11197,4988	16936,28375	0,6
4197,20851	7488,92663	11035,3342	16765,99654	0,6
4101,691	7352,00446	10874,5477	16596,08233	0,6
4008,06631	7216,94789	10715,1665	16426,5927	0,6
3916,31057	7083,75817	10557,2152	16257,57698	0,6
3826,39948	6952,43507	10400,7166	16089,08227	0,6
3738,3083	6822,97691	10245,6916	15921,15354	0,6
3652,01197	6695,38071	10092,1592	15753,8337	0,6
3567,48512	6569,6422	9940,13658	15587,16364	0,6
3484,70213	6445,75593	9789,63932	15421,18234	0,6
3403,63718	6323,71535	9640,68133	15255,9269	0,6
3324,26429	6203,51282	9493,27499	15091,43263	0,6
3246,55734	6085,13975	9347,43118	14927,73308	0,6
3170,49014	5968,58658	9203,15935	14764,8601	0,6
3096,03645	5853,84291	9060,46763	14602,84394	0,6
7001	5740,89752	8919,36281	14441,71325	0,6
6457	5629,73841	8779,85045	14281,49516	0,6
9391	5520,3529	8641,93496	14122,21535	0,6
8319	5412,72761	8505,61958	13963,89805	0,6

2747,05248	5306,84858	8370,90648	13806,56614	0,6
2681,72972	5202,70126	8237,79682	13650,24116	0,6
2617,83781	5100,27058	8106,29078	13494,94339	0,6
2555,35111	4999,54096	7976,38758	13340,69186	0,6
2494,24413	4900,4964	7848,08559	13187,50441	0,6
2434,49159	4803,12047	7721,3823	13035,39773	0,6
2376,06841	4707,39637	7596,27444	12884,38742	0,6
2318,94971	4613,30695	7472,75793	12734,488	0,6
2263,11088	4520,83474	7350,82801	12585,71293	0,6
2208,52751	4429,96202	7230,47921	12438,07472	0,6
2155,17546	4340,67078	7111,70541	12291,5849	0,6
2103,03087	4252,9428	6994,49989	12146,25408	0,6
2052,07012	4166,75967	6878,85533	12002,09197	0,6
2002,2699	4082,10279	6764,76387	11859,10744	0,6
1953,60716	3998,95343	6652,21714	11717,30852	0,6
1906,05916	3917,29272	6541,20625	11576,70246	0,6
1859,60346	3837,10167	6431,72188	11437,29572	0,6
1814,2179	3758,36123	6323,75427	11299,09405	0,6
1769,88066	3681,05227	6217,29323	11162,10247	0,6
1726,57021	3605,15562	6112,32823	11026,32534	0,6
1684,26533	3530,65207	6008,84833	10891,76635	0,6
1642,94512	3457,52239	5906,8423	10758,42855	0,6
1602,58902	3385,74738	5806,29857	10626,31442	0,6
1563,17675	3315,30781	5707,2053	10495,42582	0,6
1524,68837	3246,18453	5609,55037	10365,76407	0,6
1487,10427	3178,35839	5513,32141	10237,32996	0,6
1450,40515	3111,81032	5418,50581	10110,12374	0,6
1414,57202	3046,52131	5325,09077	9984,145206	0,6
1379,58623	2982,47243	5233,06328	9859,393644	0,6
1345,42944	2919,64482	5142,41014	9735,867904	0,6
1312,08362	2858,01974	5053,11802	9613,566399	0,6
1279,53107	2797,57855	4965,17342	9492,487125	0,6
1247,75439	2738,30271	4878,56272	9372,627681	0,6
1216,73651	2680,17383	4793,27215	9253,985282	0,6
1186,46066	2623,17363	4709,28789	9136,556783	0,6
1156,91038	2567,28396	4626,59599	9020,338686	0,6
1128,0695	2512,48683	4545,18242	8905,327165	0,6
2218	2458,7644	4465,03311	8791,518073	0,6
5287	2406,09897	4386,13391	8678,906962	0,6
4631	2354,47302	4308,47063	8567,489095	0,6
8754	2303,86916	4232,02905	8457,25946	0,6

993,96189	2254,27021	4156,79493	8348,212783	0,6
969,054973	2205,65914	4082,754	8240,34354	0,6
944,75269	2158,01908	4009,892	8133,645973	0,6
921,041224	2111,33338	3938,19465	8028,114096	0,6
897,907031	2065,58555	3867,64771	7923,741713	0,6
875,336842	2020,75927	3798,23693	7820,522423	0,6
853,317658	1976,83843	3729,9481	7718,449637	0,6
831,836743	1933,80711	3662,76703	7617,516582	0,6
810,881625	1891,64956	3596,67959	7517,716316	0,6
790,440091	1850,35025	3531,67168	7419,041735	0,6
770,500178	1809,89382	3467,72925	7321,485586	0,6
751,050179	1770,26511	3404,83831	7225,040469	0,6
732,078628	1731,44917	3342,98493	7129,698854	0,6
713,574306	1693,43124	3282,15525	7035,453083	0,6
695,526228	1656,19675	3222,33549	6942,295383	0,6
677,923648	1619,73134	3163,51193	6850,217868	0,6
660,756048	1584,02083	3105,67094	6759,212554	0,6
644,013138	1549,05125	3048,79896	6669,271361	0,6
627,68485	1514,80883	2992,88255	6580,38612	0,6
611,761337	1481,27999	2937,90834	6492,548583	0,6
596,232964	1448,45136	2883,86304	6405,750427	0,6
581,09031	1416,30974	2830,7335	6319,983261	0,6
566,324162	1384,84216	2778,50663	6235,238633	0,6
551,925509	1354,03581	2727,16946	6151,508035	0,6
537,88554	1323,87811	2676,70915	6068,782907	0,6
524,195641	1294,35665	2627,11292	5987,054645	0,6
510,847392	1265,4592	2578,36814	5906,314607	0,6
497,83256	1237,17376	2530,46228	5826,554113	0,6
485,143098	1209,48848	2483,38292	5747,764455	0,6
472,77114	1182,39173	2437,11776	5669,9369	0,6
460,709	1155,87204	2391,65463	5593,062695	0,6
448,949165	1129,91814	2346,98146	5517,133066	0,6
437,484296	1104,51895	2303,0863	5442,139233	0,6
426,307217	1079,66356	2259,95735	5368,072403	0,6
415,410922	1055,34123	2217,58289	5294,92378	0,6
404,788563	1031,54143	2175,95137	5222,684567	0,6
394,43345	1008,25379	2135,05132	5151,345969	0,6
9048	985,46811	2094,87142	5080,899197	0,6
8975	963,174371	2055,40048	5011,335472	0,6
6995	941,362726	2016,62742	4942,646025	0,6
5702	920,023496	1978,5413	4874,822104	0,6

346,443101	899,14717	1941,13128	4807,854975	0,6
337,55943	878,724404	1904,38669	4741,735923	0,6
328,900337	858,746019	1868,29696	4676,456258	0,6
320,460281	839,202996	1832,85163	4612,007314	0,6
312,233855	820,086478	1798,04041	4548,380453	0,6
304,21578	801,387765	1763,85311	4485,56707	0,6
296,400899	783,098315	1730,27965	4423,558588	0,6
288,78418	765,209738	1697,31012	4362,346468	0,6
281,36071	747,713798	1664,93471	4301,922205	0,6
274,125692	730,602408	1633,14373	4242,277335	0,6
267,074443	713,86763	1601,92762	4183,403431	0,6
260,202395	697,501672	1571,27696	4125,29211	0,6
253,505085	681,496886	1541,18244	4067,935029	0,6
246,978161	665,845765	1511,63487	4011,323894	0,6
240,617373	650,540943	1482,62519	3955,450455	0,6
234,418575	635,575193	1454,14446	3900,306508	0,6
228,377719	620,941422	1426,18388	3845,8839	0,6
222,490856	606,632672	1398,73473	3792,174527	0,6
216,754133	592,642116	1371,78845	3739,170338	0,6
211,163789	578,963059	1345,33658	3686,863331	0,6
205,716155	565,588932	1319,37078	3635,24556	0,6
200,407651	552,513293	1293,88283	3584,309132	0,6
195,234783	539,729823	1268,86463	3534,046208	0,6
190,194145	527,232326	1244,30819	3484,449007	0,6
185,282411	515,014727	1220,20564	3435,509803	0,6
180,496337	503,071066	1196,54922	3387,220929	0,6
175,83276	491,395502	1173,33128	3339,574774	0,6
171,288592	479,982309	1150,5443	3292,563786	0,6
166,860823	468,82587	1128,18085	3246,180475	0,6
162,546516	457,920683	1106,23361	3200,417406	0,6
158,342805	447,261352	1084,6954	3155,267208	0,6
154,246896	436,842589	1063,5591	3110,72257	0,6
150,256064	426,65921	1042,81773	3066,77624	0,6
146,367651	416,706136	1022,46441	3023,42103	0,6
142,579062	406,978388	1002,49237	2980,649811	0,6
138,887771	397,47109	982,894918	2938,455519	0,6
135,291311	388,179459	963,665496	2896,83115	0,6
7277	379,098814	944,79763	2855,769763	0,6
3324	370,224564	926,28495	2815,264479	0,6
7165	361,552214	908,121185	2775,308483	0,6
6569	353,07736	890,300164	2735,895022	0,6

118,649363	344,795687	872,81581	2697,017406	0,6
115,573424	336,702968	855,662143	2658,669009	0,6
112,576686	328,795064	838,833279	2620,843266	0,6
109,657132	321,067919	822,323426	2583,533676	0,6
106,812797	313,517562	806,126885	2546,733801	0,6
104,041763	306,140104	790,238047	2510,437267	0,6
101,342162	298,931736	774,651396	2474,637762	0,6
98,7121727	291,888727	759,361503	2439,329035	0,6
96,1500176	285,007424	744,363026	2404,504901	0,6
93,6539651	278,284252	729,650714	2370,159234	0,6
91,222327	271,715708	715,219396	2336,285974	0,6
88,8534573	265,298362	701,06399	2302,87912	0,6
86,5457513	259,02886	687,179496	2269,932736	0,6
84,2976447	252,903913	673,560995	2237,440945	0,6
82,1076126	246,920304	660,203653	2205,397933	0,6
79,9741686	241,074884	647,102712	2173,797947	0,6
77,8958635	235,364569	634,253495	2142,635296	0,6
75,8712849	229,786343	621,651403	2111,904348	0,6
73,899056	224,33725	609,291914	2081,599534	0,6
71,9778346	219,014401	597,170583	2051,715344	0,6
70,1063126	213,814964	585,283037	2022,246327	0,6
68,2832149	208,736171	573,624979	1993,187093	0,6
66,5072986	203,775312	562,192183	1964,532311	0,6
64,7773525	198,929734	550,980498	1936,27671	0,6
63,0921958	194,196842	539,98584	1908,415075	0,6
61,4506777	189,574097	529,204197	1880,942252	0,6
59,8516768	185,059012	518,631624	1853,853144	0,6
58,2941	180,649157	508,264244	1827,142712	0,6
56,7768818	176,342153	498,098248	1800,805972	0,6
55,298984	172,135672	488,129892	1774,838001	0,6
53,8593948	168,027436	478,355495	1749,233928	0,6
52,4571279	164,015217	468,771442	1723,988942	0,6
51,0912224	160,096837	459,37418	1699,098284	0,6
49,7607416	156,270161	450,160218	1674,557253	0,6
48,4647729	152,533106	441,126124	1650,361202	0,6
47,2024266	148,88363	432,268529	1626,505538	0,6
45,9728362	145,319738	423,584121	1602,985723	0,6
1568	141,839477	415,069647	1579,79727	0,6
5653	138,440939	406,721911	1556,935748	0,6
2597	135,122255	398,537773	1534,396779	0,6
4583	131,881599	390,514149	1512,176034	0,6

40,2874469	128,717185	382,648008	1490,269238	0,6
39,2377082	125,627266	374,936375	1468,672169	0,6
38,2157128	122,610134	367,376328	1447,380652	0,6
37,2206997	119,664117	359,964994	1426,390566	0,6
36,2519307	116,787582	352,699555	1405,697839	0,6
35,3086892	113,978931	345,57724	1385,298447	0,6
34,3902799	111,236603	338,59533	1365,188417	0,6
33,4960276	108,559069	331,751154	1345,363826	0,6
32,6252772	105,944836	325,042088	1325,820795	0,6
31,7773922	103,392443	318,465558	1306,555497	0,6
30,9517548	100,900464	312,019033	1287,56415	0,6
30,1477648	98,4675009	305,700031	1268,84302	0,6
29,3648396	96,0921899	299,506111	1250,388419	0,6
28,6024129	93,7731966	293,434881	1232,196705	0,6
27,8599348	91,5092166	287,483989	1214,264282	0,6
27,1368707	89,2989745	281,651126	1196,587599	0,6
26,4327016	87,1412239	275,934026	1179,163148	0,6
25,7469228	85,034746	270,330466	1161,987469	0,6
25,0790439	82,9783498	264,83826	1145,057142	0,6
24,4285883	80,9708707	259,455264	1128,368793	0,6
23,7950926	79,0111706	254,179373	1111,919088	0,6
23,1781066	77,098137	249,008522	1095,704738	0,6
22,5771923	75,2306826	243,940682	1079,722495	0,6
21,991924	73,4077444	238,973863	1063,969153	0,6
21,4218878	71,6282839	234,106109	1048,441547	0,6
20,8666811	69,8912856	229,335503	1033,136552	0,6
20,3259124	68,1957575	224,660163	1018,051084	0,6
19,7992011	66,5407299	220,07824	1003,182098	0,6
19,2861767	64,9252549	215,587922	988,5265888	0,6
18,7864792	63,3484066	211,187429	974,081591	0,6
18,2997581	61,8092799	206,875013	959,8441767	0,6
17,8256726	60,3069903	202,648961	945,8114562	0,6
17,3638911	58,8406736	198,507591	931,9805777	0,6
16,9140909	57,4094853	194,449251	918,3487267	0,6
16,4759582	56,0126002	190,472323	904,9131254	0,6
16,0491874	54,6492117	186,575216	891,6710324	0,6
15,6334813	53,3185322	182,756371	878,6197424	0,6
35508	52,0197916	179,014257	865,7565856	0,6
1142	50,7522378	175,347372	853,0789276	0,6
8977	49,5151358	171,754244	840,5841687	0,6
6346	48,3077675	168,233426	828,2697433	0,6

13,7110655	47,1294315	164,7835	816,1331203	0,6
13,3559376	45,9794421	161,403073	804,1718019	0,6
13,0100052	44,85713	158,090782	792,3833235	0,6
12,6730288	43,7618407	154,845286	780,7652533	0,6
12,3447755	42,6929352	151,665271	769,3151922	0,6
12,0250184	41,6497891	148,549448	758,0307728	0,6
11,7135368	40,6317925	145,496553	746,9096596	0,6
11,4101156	39,6383496	142,505343	735,9495483	0,6
11,1145455	38,6688782	139,574603	725,1481655	0,6
10,8266227	37,7228098	136,703139	714,5032684	0,6
10,5461487	36,7995891	133,889778	704,0126443	0,6
10,2729305	35,8986734	131,133374	693,6741105	0,6
10,0067798	35,0195329	128,432797	683,4855136	0,6
9,74751342	34,1616499	125,786944	673,4447292	0,6
9,494953	33,3245189	123,194731	663,5496619	0,6
9,24892481	32,5076461	120,655093	653,7982445	0,6
9,00925969	31,710549	118,166988	644,188438	0,6
8,77579289	30,9327567	115,729393	634,7182309	0,6
8,54836396	30,1738089	113,341305	625,3856391	0,6
8,32681667	29,4332564	111,00174	616,1887057	0,6
8,11099884	28,7106602	108,709733	607,1255003	0,6
7,90076227	28,0055917	106,464337	598,1941189	0,6
7,69596261	27,3176324	104,264624	589,3926835	0,6
7,49645929	26,6463733	102,109685	580,7193419	0,6
7,30211538	25,9914152	99,9986258	572,1722671	0,6
7,11279751	25,3523683	97,9305719	563,7496573	0,6
6,92837579	24,7288517	95,9046648	555,4497353	0,6
6,7487237	24,1204937	93,9200626	547,2707485	0,6
6,57371799	23,5269312	91,9759401	539,2109682	0,6
6,40323864	22,9478095	90,0714877	531,2686897	0,6
6,23716871	22,3827825	88,2059119	523,4422318	0,6
6,07539431	21,8315121	86,3784343	515,7299363	0,6
5,9178045	21,2936681	84,5882919	508,1301682	0,6
5,76429121	20,7689281	82,8347365	500,6413148	0,6
5,61474917	20,2569774	81,1170344	493,2617859	0,6
5,46907583	19,7575087	79,4344664	485,9900134	0,6
5,3271713	19,2702218	77,7863272	478,8244508	0,6
3828	18,7948238	76,1719252	471,7635731	0,6
8197	18,3310285	74,5905825	464,8058766	0,6
1004	17,8785566	73,0416345	457,9498784	0,6
3251	17,4371354	71,5244294	451,1941163	0,6

4,67086177	17,0064986	70,0383284	444,5371485	0,6
4,54961245	16,5863863	68,5827052	437,9775532	0,6
4,43150138	16,1765446	67,1569456	431,5139285	0,6
4,31644755	15,7767257	65,7604476	425,1448922	0,6
4,20437203	15,3866878	64,3926212	418,8690812	0,6
4,09519793	15,0061945	63,0528878	412,6851516	0,6
3,98885035	14,6350155	61,7406801	406,5917785	0,6
3,88525631	14,2729255	60,4554424	400,5876552	0,6
3,78434473	13,9197049	59,1966294	394,6714935	0,6
3,68604636	13,5751391	57,9637071	388,8420234	0,6
3,59029371	13,2390187	56,7561516	383,0979927	0,6
3,49702106	12,9111392	55,5734496	377,4381666	0,6
3,40616437	12,5913011	54,415098	371,8613279	0,6
3,31766126	12,2793097	53,2806034	366,3662765	0,6
3,23145095	11,9749746	52,1694824	360,9518291	0,6
3,14747422	11,6781104	51,0812611	355,6168192	0,6
3,0656734	11,3885358	50,015475	350,3600967	0,6
2,98599227	11,106074	48,9716688	345,1805278	0,6
2,9083761	10,8305523	47,9493962	340,0769947	0,6
2,83277155	10,5618021	46,9482199	335,0483954	0,6
2,75912664	10,2996591	45,9677112	330,0936433	0,6
2,68739075	10,0439626	45,0074498	325,2116676	0,6
2,61751455	9,79455598	44,0670241	320,4014124	0,6
2,54945001	9,55128625	43,1460303	315,6618367	0,6
2,4831503	9,31400413	42,244073	310,9919145	0,6
2,41856981	9,08256391	41,3607644	306,3906342	0,6
2,35566412	8,85682338	40,4957247	301,8569986	0,6
2,29438993	8,63664373	39,6485815	297,3900248	0,6
2,23470508	8,42188949	38,8189698	292,9887436	0,6
2,17656848	8,21242844	38,006532	288,6521998	0,6
2,1199401	8,00813155	37,2109178	284,3794519	0,6
2,06478094	7,80887287	36,4317835	280,1695715	0,6
2,01105302	7,6145295	35,6687927	276,0216438	0,6
1,95871932	7,42498149	34,9216154	271,9347667	0,6
1,90774379	7,24011177	34,1899286	267,9080512	0,6
1,8580913	7,0598061	33,4734153	263,9406209	0,6
1,80972761	6,88395297	32,7717653	260,0316119	0,6
1941	6,7124436	32,0846744	256,1801729	0,6
3419	6,54517179	31,4118444	252,3854643	0,6
4032	6,38203392	30,7529835	248,646659	0,6
0696	6,22292888	30,1078053	244,9629414	0,6

1,58610409	6,06775798	29,4760295	241,3335078	0,6
1,54480244	5,91642494	28,8573812	237,7575659	0,6
1,50457352	5,76883578	28,2515912	234,2343347	0,6
1,46538954	5,6248988	27,6583958	230,7630446	0,6
1,42722346	5,48452453	27,0775363	227,342937	0,6
1,39004891	5,34762566	26,5087595	223,9732639	0,6
1,35384023	5,21411698	25,9518172	220,6532885	0,6
1,3185724	5,08391535	25,4064663	217,3822842	0,6
1,28422105	4,95693965	24,8724685	214,1595351	0,6
1,25076244	4,83311073	24,3495903	210,9843356	0,6
1,21817345	4,71235133	23,837603	207,85599	0,6
1,18643154	4,5945861	23,3362826	204,7738128	0,6
1,15551477	4,4797415	22,8454095	201,7371284	0,6
1,12540174	4,36774578	22,3647685	198,745271	0,6
1,09607164	4,25852891	21,8941489	195,7975841	0,6
1,06750417	4,1520226	21,4333443	192,8934209	0,6
1,03967957	4,04816019	20,9821523	190,032144	0,6
1,01257856	3,94687665	20,5403747	187,213125	0,6
0,9861824	3,84810853	20,1078174	184,4357447	0,6
0,9604728	3,75179393	19,6842901	181,6993929	0,6
0,93543197	3,65787243	19,2696065	179,0034679	0,6
0,91104255	3,56628513	18,863584	176,3473771	0,6
0,88728766	3,4769745	18,4660437	173,7305362	0,6
0,86415083	3,38988448	18,0768104	171,1523696	0,6
0,84161602	3,30496032	17,6957125	168,6123097	0,6
0,81966763	3,22214863	17,3225818	166,1097974	0,6
0,79829043	3,14139732	16,9572535	163,6442816	0,6
0,7774696	3,06265557	16,5995663	161,2152191	0,6
0,7571907	2,9858738	16,2493621	158,8220748	0,6
0,73743966	2,91100364	15,9064859	156,4643211	0,6
0,71820279	2,8379979	15,5707861	154,1414382	0,6
0,69946673	2,76681053	15,2421141	151,8529138	0,6
0,68121848	2,69739664	14,9203243	149,598243	0,6
0,66344539	2,6297124	14,6052741	147,3769284	0,6
0,64613509	2,56371508	14,2968238	145,1884795	0,6
0,62927559	2,49936297	13,9948365	143,0324133	0,6
0,61285517	2,43661539	13,6991783	140,9082536	0,6
36242	2,37543267	13,4097177	138,8155311	0,6
28623	2,3157761	13,1263263	136,7537835	0,6
1579	2,2576079	12,848878	134,722555	0,6
34055	2,20089125	12,5772495	132,7213965	0,6

0,53695024	2,14559022	12,3113198	130,7498657	0,6
0,52293486	2,09166973	12,0509706	128,8075263	0,6
0,50928466	2,03909561	11,7960859	126,8939487	0,6
0,49599016	1,9878345	11,5465522	125,0087095	0,6
0,48307434	1,93785386	11,3022581	123,1513912	0,6
0,47066242	1,88912195	11,0630947	121,3215827	0,6
0,45885169	1,84160781	10,8289553	119,5188788	0,6
0,44759565	1,79528124	10,5997354	117,7428801	0,6
0,43685245	1,75011279	10,3753325	115,9931932	0,6
0,42658435	1,70607372	10,1556463	114,2694304	0,6
0,41675717	1,66313601	9,94057871	112,5712095	0,6
0,40733999	1,62127232	9,73003341	110,8981541	0,6
0,39830468	1,58045597	9,52391622	109,2498931	0,6
0,38962567	1,54066098	9,32213485	107,626061	0,6
0,38127965	1,50186195	9,12459891	106,0262975	0,6
0,37324531	1,46403415	8,93121988	104,4502476	0,6
0,36550317	1,42715344	8,74191107	102,8975616	0,6
0,35803537	1,39119629	8,55658755	101,3678947	0,6
0,35082551	1,35613973	8,37516618	99,8609074	0,6
0,34385851	1,32196135	8,1975655	98,37626492	0,6
0,3371205	1,28863934	8,02370575	96,91363752	0,6
0,33059868	1,25615236	7,85350881	95,47270026	0,6
0,32428122	1,22447966	7,68689818	94,05313294	0,6
0,31815719	1,19360095	7,52379892	92,65462008	0,6
0,31221648	1,16349648	7,36413767	91,27685077	0,6
0,30644968	1,13414696	7,20784256	89,91951871	0,6
0,30084809	1,1055336	7,05484321	88,58232204	0,6
0,29540361	1,07763805	6,9050707	87,26496335	0,6
0,29010871	1,05044242	6,75845755	85,96714959	0,6
0,28495634	1,02392929	6,61493764	84,68859199	0,6
0,27993997	0,99808162	6,47444625	83,42900603	0,6
0,27505348	0,97288284	6,33692	82,18811135	0,6
0,27029113	0,94831676	6,2022968	80,96563171	0,6
0,26564759	0,9243676	6,07051585	79,76129492	0,6
0,26111783	0,90101996	5,94151764	78,5748328	0,6
0,25669714	0,87825885	5,81524386	77,40598107	0,6
0,25238111	0,85606961	5,69163743	76,25447937	0,6
[illegible]6558	0,83443798	5,57064243	75,12007114	0,6
[illegible]4665	0,81335003	5,45220413	74,0025036	0,6
[illegible]2065	0,79279219	5,33626891	72,90152766	0,6
[illegible]0841	0,77275121	5,22278428	71,81689791	0,6

0,23223373	0,75321419	5,11169884	70,74837255	0,6
0,22846646	0,73416852	5,00296224	69,69571332	0,6
0,22477936	0,71560193	4,8965252	68,65868548	0,6
0,22116967	0,69750245	4,79233944	67,6370577	0,6
0,21763479	0,67985839	4,6903577	66,63060211	0,6
0,21417222	0,66265836	4,59053369	65,63909415	0,6
0,21077961	0,64589127	4,49282211	64,66231257	0,6
0,20745475	0,62954627	4,39717857	63,70003938	0,6
0,20419549	0,61361282	4,30355962	62,7520598	0,6
0,20099984	0,5980806	4,21192271	61,81816222	0,6
0,19786586	0,58293957	4,12222618	60,89813811	0,6

Keterangan:

P1: Nilai P dengan Kontrol Optimal

P2: Nilai P dengan Kontrol Konstan Kasus 1

P3: Nilai P dengan Kontrol Konstan Kasus 2

P4: Nilai P tanpa Kontrol

L : Lebar Grafik diperoleh dari 500 iterasi dibagi dengan 300 hari