

LAMPIRAN

Lampiran 1.

Data Produk *perishable* UD. Bagus Agriseta Mandiri April 2012

Hari ke-	Keripik Apel	Keripik Nanas	Keripik Nangka
1	0,46	0,49	0,42
2	0,10	0,92	0,85
3	0,61	0,22	0,21
4	0,96	0,39	0,40
5	0,28	0,34	0,32
6	1,04	0,27	0,25
7	0,11	0,52	0,48
8	1,04	0,89	0,85
9	0,40	0,12	0,10
10	1,01	0,38	0,40
11	0,21	0,25	0,25
12	0,09	0,12	0,11
13	0,03	0,19	0,20
14	1,42	0,40	0,35
15	1,76	0,06	0,10
16	0,22	0,01	0,02
17	0,21	0,09	0,10
18	0,73	0,01	0,01
19	0,48	0,26	0,21
20	0,43	0,31	0,30
21	0,46	0,34	0,32
22	0,54	0,65	0,60
23	0,49	0,10	0,15
24	0,67	0,72	0,75
25	0,28	0,18	0,12
26	0,16	0,37	0,35
27	0,52	0,07	0,05
28	0,06	0,54	0,56
29	0,15	0,42	0,42
30	0,17	0,06	0,05

(Satuan yang digunakan adalah kg)

Lampiran 2. Uji Distribusi Data

Distribution Overview Plot for apel

LSXY Estimates-Complete Data

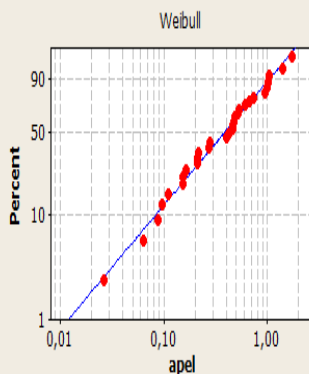
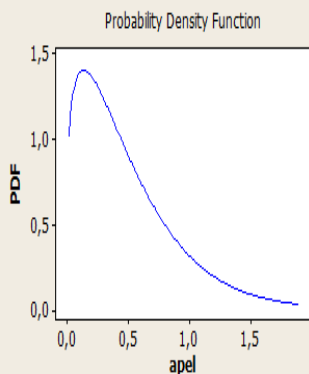


Table of Statistics	
Shape	1,21843
Scale	0,536295
Mean	0,502535
StDev	0,414499
Median	0,396977
IQR	0,508284
Failure	30
Censor	0
AD*	0,645
Correlation	0,994

Distribution Overview Plot for nanas

LSXY Estimates-Complete Data

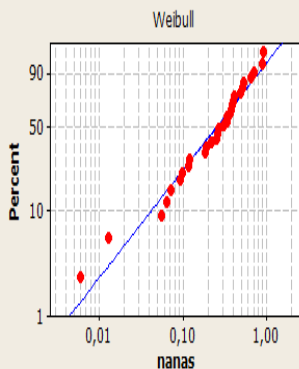
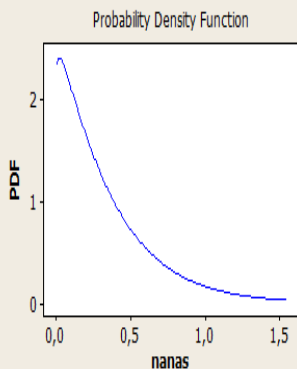
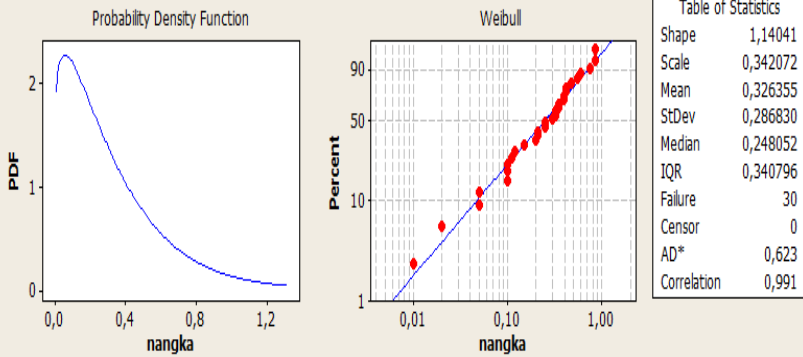


Table of Statistics	
Shape	1,05053
Scale	0,358507
Mean	0,351555
StDev	0,334761
Median	0,252917
IQR	0,379744
Failure	30
Censor	0
AD*	0,728
Correlation	0,982

Distribution Overview Plot for nangka

LSXY Estimates-Complete Data



Lampiran 3.

Hasil Perhitungan Pada Keripik Apel

restart;

a := 18.7; b := 0.09; s := 3750; AL := 0.53; B := 1.218; DL
:= 0.04; T := 30; C1 := 100; C2 := 245; C3 := 500; C4
:= 220000; P := 450; r := 0.005; N := 30;

18.7

0.09

3750

0.53

1.218

30

100

245

500

220000

450

0.005

30

(1)

$T1 := a \cdot s^{(-b)} \cdot T2 / P + a \cdot s^{(-b)} \cdot AL \cdot T2^{(B+1)} / (P \cdot (B+1));$

2.547716064

(2)

$T3 := T + \left(\frac{a \cdot s^{-b} \cdot T2}{P} - \frac{a \cdot s^{-b} \cdot T}{P} \right);$

29.72335760

(3)

$SR := \frac{a \cdot s^{-b+1}}{r} - \frac{a \cdot s^{-b+1} \cdot \exp(-r \cdot (T1 + T2))}{r} + s \cdot P$
 $\cdot \frac{\exp(-r \cdot (T1 + T2 + T3))}{r} - s \cdot P$

$$\frac{\exp(-r \cdot (T1 + T2 + T3 + T))}{r};$$

$$3.75165537 \cdot 10^7 \quad (4)$$

$$\begin{aligned} HC := & C1 \cdot P \cdot \left(\frac{1}{2} \cdot T1^2 - \frac{1}{3} \cdot r \cdot T1^3 + \frac{AL \cdot T1^2 \cdot (B + 2)}{(B^2 + 3B + 2)} + \frac{r \cdot AL \cdot T1^2 \cdot (B + 3)}{(B^2 + 4B + 3)} \right) \\ & - C1 \cdot a \cdot s^{(-b)} \cdot \left(\frac{1}{2} \cdot T1^2 - \frac{1}{3} \cdot r \cdot T1^3 + \frac{AL \cdot T1^2 \cdot (B + 2)}{(B^2 + 3B + 2)} + \frac{r \cdot AL \cdot T1^2 \cdot (B + 3)}{(B^2 + 4B + 3)} \right) \\ & + a \cdot s^{(-b)} \cdot \left(T2^2 - r \cdot T1 \cdot T2^2 - \frac{1}{2} \cdot r \cdot T2^3 + \frac{AL \cdot T2^2 \cdot (B + 2)}{(B + 1)} - \frac{r \cdot AL \cdot T1 \cdot T2^2 \cdot (B + 2)}{(B + 1)} \right. \\ & \left. - \frac{r \cdot AL \cdot T2^2 \cdot (B + 3)}{(2B + 2)} - \frac{1}{2} \cdot T2^2 + \frac{1}{2} \cdot r \cdot T1 \cdot T2^2 + \frac{1}{3} \cdot r \cdot T2^3 - \frac{AL \cdot T2^2 \cdot (B + 2)}{(B^2 + 3B + 2)} \right. \\ & \left. + \frac{r \cdot AL \cdot T1 \cdot T2^2 \cdot (B + 2)}{(B^2 + 3B + 2)} + \frac{r \cdot AL \cdot T2^2 \cdot (B + 3)}{(B^2 + 4B + 3)} \right); \end{aligned}$$

$$2.207051385 \cdot 10^5 \quad (5)$$

$$\begin{aligned} LSC := & \frac{(C3 \cdot a \cdot s^{(-b)} \cdot \exp(-r \cdot (T1 + T2)))}{r} \\ & - \frac{(C3 \cdot a \cdot s^{(-b)} \cdot \exp(-r \cdot (T1 + T2 + T3)))}{r} \\ & + \frac{(C3 \cdot a \cdot s^{(-b)} \cdot \exp(-DL \cdot T3 - r \cdot (T1 + T2 + T3)))}{DL + r} \\ & - \frac{(C3 \cdot a \cdot s^{(-b)} \cdot \exp(-r \cdot (T1 + T2)))}{DL + r}; \end{aligned}$$

$$45625.53829 \quad (6)$$

$$STC := 2 \cdot C4 - C4 \cdot r \cdot T1 - C4 \cdot r \cdot T2 - C4 \cdot r \cdot T3;$$

$$3.868601897 \cdot 10^5 \quad (7)$$

$$\begin{aligned} SC := & \left(\frac{C2 \cdot a \cdot s^{(-b)}}{DL} \cdot \frac{\exp(-DL \cdot T2 - r \cdot (T1 + T2 + T3))}{-r} \right) \\ & + \left(\frac{C2 \cdot a \cdot s^{(-b)}}{DL} \cdot \frac{\exp(-DL \cdot T2 - r \cdot (T1 + T2))}{r} \right) + \left(\frac{C2 \cdot a \cdot s^{(-b)}}{DL} \right. \\ & \left. \cdot \frac{\exp(-DL \cdot T3 - r \cdot (T1 + T2 + T3))}{DL + r} \right) - \left(\frac{C2 \cdot a \cdot s^{(-b)}}{DL} \right) \end{aligned}$$

$$\begin{aligned} & \left(\frac{\exp(-r \cdot (T1 + T2))}{DL + r} \right) + \left(C2 \cdot P \right. \\ & \left. \frac{\exp(-r \cdot (T1 + T2 + T3 + T))}{I^2} \right) \\ & - \left(\frac{C2 \cdot P \cdot \exp(-r \cdot (T1 + T2 + T3))}{I^2} \right) + \left(C2 \cdot P \cdot T \right. \\ & \left. \frac{\exp(-r \cdot (T1 + T2 + T3))}{r} \right) + \left(-C2 \cdot a \cdot s^{-b} \right. \\ & \left. \frac{\exp(-r \cdot (T1 + T2 + T3 + T))}{I^2} \right) + \left(C2 \cdot a \cdot s^{-b} \right. \\ & \left. \frac{\exp(-r \cdot (T1 + T2 + T3))}{I^2} \right) + \left(-C2 \cdot a \cdot s^{-b} \cdot T \right. \\ & \left. \frac{\exp(-r \cdot (T1 + T2 + T3))}{r} \right); \end{aligned}$$

$$3.626214592 \cdot 10^7 \quad (8)$$

$$Z := \$R - \$TC - HC - LSC - \$C;$$

$$6.0121691 \cdot 10^5 \quad (9)$$

$$NP := Z * (1 - \exp(-r * N * T)) / (1 - \exp(-r * T)) - C4;$$

$$4.048284559 \cdot 10^6 \quad (10)$$

$$W := \frac{\partial}{\partial T2} NP = 0;$$

$$0.1582490018 (0.01981373174 \quad (11)$$

$$+ 0.01050127782 T2^{1.218}) T2^2$$

$$+ 0.3164980036 (0.01981373174 T2$$

$$+ 0.004734570703 T2^{2.218}) T2$$

$$+ 0.05212676876 (0.01981373174$$

$$+ 0.01050127782 T2^{1.218}) T2^{3.218}$$

$$+ 0.1677439419 (0.01981373174 T2$$

$$\begin{aligned}
& + 0.004734570703 T_2^{2,218}) T_2^{2,218} + 8118.814280 \\
& + 82.00814937 T_2^{1,218} + 0.1582490018 T_2^2 \\
& - 33.54878837 T_2^{2,218} + 0.08387197095 T_2^{3,218} \\
& - 4.448555273 10^7 (-0.005099068660 \\
& - 0.00005250638911 T_2^{1,218}) \\
& e^{-0.003099068660 T_2 - 0.00002367285352 T_2^{2,218}} \\
& + 2.848722822 10^{10} (-0.005198137315 \\
& - 0.00005250638911 T_2^{1,218}) \\
& e^{-0.005198137315 T_2 - 0.00002367285352 T_2^{2,218}} \\
& - 0.1470279402 - 3.308410669 10^{10} (\\
& -0.005198137315 - 0.00005250638911 T_2^{1,218}) \\
& e^{-0.005198137315 T_2 - 0.00002367285352 T_2^{2,218}} \\
& - 0.2970279402 - 63.29960072 T_2 \\
& - 3.131434312 10^5 (0.01981373174 T_2 \\
& + 0.004734570703 T_2^{2,218}) (0.01981373174 \\
& + 0.01050127782 T_2^{1,218}) \\
& - 74826.87941 (0.01981373174 T_2 \\
& + 0.004734570703 T_2^{2,218})^{2,218} (0.01981373174 \\
& + 0.01050127782 T_2^{1,218}) \\
& - 374.1343970 (0.01981373174 T_2 \\
& + 0.004734570703 T_2^{2,218})^{3,218} (0.01981373174 \\
& + 0.01050127782 T_2^{1,218}) \\
& + 1565.717156 (0.01981373174 T_2
\end{aligned}$$

$$\begin{aligned}
& + 0.004734570703 T_2^{2.218})^2 (0.01981373174 \\
& + 0.01050127782 T_2^{1.218}) - 9.319107887 10^6 (\\
& - 0.005990686585 - 0.00005250638911 T_2^{1.218}) \\
& e^{-1.323251462 - 0.00990686585 T_2 - 0.0000236728532 T_2^{2.218}} \\
& + 7.754201088 10^7 (-0.04519813732 \\
& - 0.00005250638911 T_2^{1.218}) \\
& e^{-0.04519813732 T_2 - 0.0000236728532 T_2^{2.218} - 0.1470279402} \\
& - 7.754201088 10^7 (-0.04509906866 \\
& - 0.00005250638911 T_2^{1.218}) \\
& e^{-0.04509906866 T_2 - 0.0000236728532 T_2^{2.218}} = 0
\end{aligned}$$

solve(W, T2)

$$16.03784475 \quad (12)$$

T2 := 16.03784475;

$$16.03784475 \quad (13)$$

Lampiran 4.

Hasil Perhitungan Pada Keripik Nanas

restart;

$a := 22.2; b := 0.1; s := 3750; AL := 0.36; B := 1.05; DL$
 $:= 0.04; T := 30; C1 := 100; C2 := 245; C3 := 500; C4$
 $:= 350000; P := 300; r := 0.005; N := 30;$

22.2

0.1

3750

0.36

1.05

30

100

245

500

350000

300

0.005

30

(1)

$$T1 := a \cdot s^{(-b)} \cdot T2 / P + a \cdot s^{(-b)} \cdot AL \cdot T2^{(B+1)} / (P \cdot (B+1));$$

3.799041250

(2)

$$T3 := T + \left(\frac{a \cdot s^{-b} \cdot T2}{P} - \frac{a \cdot s^{-b} \cdot T}{P} \right);$$

29.72629077

(3)

$$SR := \frac{a \cdot s^{-b+1}}{r} - \frac{a \cdot s^{-b+1} \cdot \exp(-r \cdot (T1 + T2))}{r} + s \cdot P$$

$$\cdot \frac{\exp(-r \cdot (T1 + T2 + T3))}{r} - s \cdot P$$

$$\frac{\exp(-r \cdot (T1 + T2 + T3 + T))}{r};$$

$$2.46645924 \cdot 10^7 \quad (4)$$

$$\begin{aligned} HC := & CI \cdot P \cdot ((1/2) \cdot T1^2 - (1/3) \cdot r \cdot T1^3 + (AL \cdot T1^{(B+2)}) / ((B^2 + 3B + 2)) + (r \cdot AL \cdot T1^{(B+3)}) / (B^2 + 4B + 3)) \\ & - CI \cdot a \cdot s^{(-b)} \cdot ((1/2) \cdot T1^2 - (1/3) \cdot r \cdot T1^3 + (AL \cdot T1^{(B+2)}) / ((B^2 + 3B + 2)) + (r \cdot AL \cdot T1^{(B+3)}) / (B^2 + 4B + 3)) \\ & + a \cdot s^{(-b)} \cdot (T2^2 - r \cdot T1 \cdot T2^2 - (1/2) \cdot r \cdot T2^3 + (AL \cdot T2^{(B+2)}) / ((B+1)) - (r \cdot AL \cdot T1 \cdot T2^{(B+2)}) / ((B+1)) - (r \cdot AL \cdot T2^{(B+3)}) / (2B + 2) \\ & - (1/2) \cdot T2^2 + (1/2) \cdot r \cdot T1 \cdot T2^2 + (1/3) \cdot r \cdot T2^3 - (AL \cdot T2^{(B+2)}) / ((B^2 + 3B + 2)) + (r \cdot AL \cdot T1 \cdot T2^{(B+2)}) / ((B^2 + 3B + 2)) + (r \cdot AL \cdot T2^{(B+3)}) / (B^2 + 4B + 3)); \end{aligned}$$

$$3.209792410 \cdot 10^5 \quad (5)$$

$$\begin{aligned} LSC := & \frac{(C3 \cdot a \cdot s^{-b} \cdot \exp(-r \cdot (T1 + T2)))}{r} \\ & - \frac{(C3 \cdot a \cdot s^{-b} \cdot \exp(-r \cdot (T1 + T2 + T3)))}{r} \\ & + \frac{(C3 \cdot a \cdot s^{-b} \cdot \exp(-DL \cdot T3 - r \cdot (T1 + T2 + T3)))}{DL + r} \\ & - \frac{(C3 \cdot a \cdot s^{-b} \cdot \exp(-r \cdot (T1 + T2)))}{DL + r}; \end{aligned}$$

$$48228.24378 \quad (6)$$

$$STC := 2 \cdot C4 - C4 \cdot r \cdot T1 - C4 \cdot r \cdot T2 - C4 \cdot r \cdot T3;$$

$$6.035707170 \cdot 10^5 \quad (7)$$

$$SC := \left(\frac{C2 \cdot a \cdot s^{-b}}{DL} \cdot \frac{\exp(-DL \cdot T2 - r \cdot (T1 + T2 + T3))}{-r} \right)$$

$$\begin{aligned}
& + \left(\frac{C2 \cdot a \cdot s^{-\delta}}{DL} \cdot \frac{\exp(-DL \cdot T2 - r \cdot (T1 + T2))}{r} \right) \\
& + \left(\frac{C2 \cdot a \cdot s^{-\delta}}{DL} \cdot \frac{\exp(-DL \cdot T3 - r \cdot (T1 + T2 + T3))}{DL + r} \right) \\
& - \left(\frac{C2 \cdot a \cdot s^{-\delta}}{DL} \cdot \frac{\exp(-r \cdot (T1 + T2))}{DL + r} \right) + \left(C2 \cdot P \right. \\
& \cdot \left. \frac{\exp(-r \cdot (T1 + T2 + T3 + T))}{r^2} \right) \\
& - \left(\frac{C2 \cdot P \cdot \exp(-r \cdot (T1 + T2 + T3))}{r^2} \right) + \left(C2 \cdot P \cdot T \right. \\
& \cdot \left. \frac{\exp(-r \cdot (T1 + T2 + T3))}{r} \right) + \left(-C2 \cdot a \cdot s^{-\delta} \right. \\
& \cdot \left. \frac{\exp(-r \cdot (T1 + T2 + T3 + T))}{r^2} \right) + \left(C2 \cdot a \cdot s^{-\delta} \right. \\
& \cdot \left. \frac{\exp(-r \cdot (T1 + T2 + T3))}{r^2} \right) + \left(-C2 \cdot a \cdot s^{-\delta} \cdot T \right. \\
& \cdot \left. \frac{\exp(-r \cdot (T1 + T2 + T3))}{r} \right);
\end{aligned}$$

$$2.287437751 \cdot 10^7 \quad (8)$$

$$Z := SR - STC - HC - LSC - SC;$$

$$8.1743669 \cdot 10^5 \quad (9)$$

$$NP := Z \cdot (1 - \exp(-r \cdot N \cdot T)) / (1 - \exp(-r \cdot T)) - C4;$$

$$5.453317145 \cdot 10^6 \quad (10)$$

$$W := \frac{\delta}{\delta T2} NP = 0;$$

$$\begin{aligned}
& 13231.42112 + 145.3420631 T2^{1.05} - 4.863960577 \cdot 10^7 (\\
& -0.005162479510 - 0.00005849262314 T2^{1.05})
\end{aligned} \quad (11)$$

$$\begin{aligned}
& e^{-0.005162479510 T_2 - 0.00002853298690 T_2^{2.05}} \\
& + 1.876918682 \cdot 10^{10} (-0.005324959020 \\
& - 0.00005849262314 T_2^{1.05}) \\
& e^{-0.005324959020 T_2 - 0.00002853298690 T_2^{2.05}} - 0.1451256148 \\
& - 2.179136556 \cdot 10^{10} (-0.005324959020 \\
& - 0.00005849262314 T_2^{1.05}) \\
& e^{-0.005324959020 T_2 - 0.00002853298690 T_2^{2.05}} - 0.2951256148 \\
& - 69.21050622 T_2 + 0.1730262656 T_2^2 \\
& + 0.1730262656 (0.03249590175 \\
& + 0.01169852463 T_2^{1.05}) T_2^2 \\
& + 0.3460525312 (0.03249590175 T_2 \\
& + 0.005706597380 T_2^{2.05}) T_2 \\
& + 0.04084554465 (0.03249590175 \\
& + 0.01169852463 T_2^{1.05}) T_2^{3.05} \\
& + 0.1245789112 (0.03249590175 T_2 \\
& + 0.005706597380 T_2^{2.05}) T_2^{2.05} \\
& - 2.060612102 \cdot 10^5 (0.03249590175 T_2 \\
& + 0.005706597380 T_2^{2.05}) (0.03249590175 \\
& + 0.01169852463 T_2^{1.05}) \\
& - 36186.35885 (0.03249590175 T_2 \\
& + 0.005706597380 T_2^{2.05})^{2.05} (0.03249590175 \\
& + 0.01169852463 T_2^{1.05}) \\
& - 180.9317943 (0.03249590175 T_2 \\
& + 0.005706597380 T_2^{2.05})^{3.05} (0.03249590175
\end{aligned}$$

$$\begin{aligned}
& + 0.01169852463 T_2^{1.05}) \\
& + 1030.306051 (0.03249590175 T_2 \\
& + 0.005706597380 T_2^{2.05})^2 (0.03249590175 \\
& + 0.01169852463 T_2^{1.05}) - 24.91578225 T_2^{2.05} \\
& + 0.06228945562 T_2^{3.05} - 1.018932452 10^7 (\\
& - 0.006624795090 - 0.00005849262314 T_2^{1.05}) \\
& e^{-1.306130533 - 0.006624795090 T_2 - 0.0000285298690 T_2^{2.05}} \\
& + 8.478287011 10^7 (-0.04532495902 \\
& - 0.00005849262314 T_2^{1.05}) \\
& e^{-0.04532495902 T_2 - 0.0000285298690 T_2^{2.05}} - 0.1451256148 \\
& - 8.478287011 10^7 (-0.04516247951 \\
& - 0.00005849262314 T_2^{1.05}) \\
& e^{-0.04516247951 T_2 - 0.0000285298690 T_2^{2.05}} = 0
\end{aligned}$$

solve(W, T2)

$$21.57711538 \quad (12)$$

T2 := 21.57711538;

$$21.57711538 \quad (13)$$

Lampiran 5. Hasil Perhitungan Pada Keripik Nangka

restart;

$a := 19.8; b := 0.09; s := 3750; AL := 0.34; B := 1.14; DL$
 $:= 0.04; T := 30; C1 := 100; C2 := 245; C3 := 500; C4$
 $:= 250000; P := 350; r := 0.005; N := 30;$

19.8

0.09

3750

0.34

1.14

0.04

30

100

245

500

250000

350

0.005

30

(1)

$$T1 := a \cdot s^{(-b)} \cdot T2 / P + a \cdot s^{(-b)} \cdot AL \cdot T2^{(B+1)} / (P \cdot (B+1));$$

3.388474383

(2)

$$T3 := T + \left(\frac{a \cdot s^{-b} \cdot T2}{P} - \frac{a \cdot s^{-b} \cdot T}{P} \right);$$

29.75114802

(3)

$$SR := \frac{a \cdot s^{-b+1}}{r} - \frac{a \cdot s^{-b+1} \cdot \exp(-r \cdot (T1 + T2))}{r} + s \cdot P$$

$$\frac{\exp(-r \cdot (T1 + T2 + T3))}{r} - s \cdot P$$

$$\frac{\exp(-r \cdot (T1 + T2 + T3 + T))}{r};$$

$$2.87301282 \cdot 10^7 \quad (4)$$

$$HC := C1 \cdot P \cdot ((1/2) \cdot T1^2 - (1/3) \cdot r \cdot T1^3 + (AL \cdot T1^B + 2)) / ((B^2 + 3B + 2)) + (r \cdot AL \cdot T1^B + 3) / (B^2 + 4B + 3) - C1 \cdot a \cdot s^b \cdot ((1/2) \cdot T1^2 - (1/3) \cdot r \cdot T1^3 + (AL \cdot T1^B + 2)) / ((B^2 + 3B + 2)) + (r \cdot AL \cdot T1^B + 3) / ((B^2 + 4B + 3)) + a \cdot s^b \cdot (T2^2 - r \cdot T1 \cdot T2^2 - (1/2) \cdot r \cdot T2^3 + (AL \cdot T2^B + 2)) / ((B + 1)) - (r \cdot AL \cdot T1 \cdot T2^B + 2) / ((B + 1)) - (r \cdot AL \cdot T2^B + 3) / (2B + 2) - (1/2) \cdot T2^2 + (1/2) \cdot r \cdot T1 \cdot T2^2 + (1/3) \cdot r \cdot T2^3 - (AL \cdot T2^B + 2)) / ((B^2 + 3B + 2)) + (r \cdot AL \cdot T1 \cdot T2^B + 2) / ((B^2 + 3B + 2)) + (r \cdot AL \cdot T2^B + 3) / ((B^2 + 4B + 3));$$

$$2.890136383 \cdot 10^5 \quad (5)$$

$$LSC := \frac{(C3 \cdot a \cdot s^{-b} \cdot \exp(-r \cdot (T1 + T2)))}{r}$$

$$- \frac{(C3 \cdot a \cdot s^{-b} \cdot \exp(-r \cdot (T1 + T2 + T3)))}{r}$$

$$+ \frac{(C3 \cdot a \cdot s^{-b} \cdot \exp(-DL \cdot T3 - r \cdot (T1 + T2 + T3)))}{DL + r}$$

$$- \frac{(C3 \cdot a \cdot s^{-b} \cdot \exp(-r \cdot (T1 + T2)))}{DL + r};$$

$$47050.57630 \quad (6)$$

$$STC := 2 \cdot C4 - C4 \cdot r \cdot T1 - C4 \cdot r \cdot T2 - C4 \cdot r \cdot T3;$$

$$4.326077947 \cdot 10^5 \quad (7)$$

$$\begin{aligned}
SC := & \left(\frac{C2 \cdot a \cdot s^{-\delta}}{DL} \cdot \frac{\exp(-DL \cdot T2 - r \cdot (T1 + T2 + T3))}{-r} \right) \\
& + \left(\frac{C2 \cdot a \cdot s^{-\delta}}{DL} \cdot \frac{\exp(-DL \cdot T2 - r \cdot (T1 + T2))}{r} \right) \\
& + \left(\frac{C2 \cdot a \cdot s^{-\delta}}{DL} \cdot \frac{\exp(-DL \cdot T3 - r \cdot (T1 + T2 + T3))}{DL + r} \right) \\
& - \left(\frac{C2 \cdot a \cdot s^{-\delta}}{DL} \cdot \frac{\exp(-r \cdot (T1 + T2))}{DL + r} \right) + \left(C2 \cdot P \right. \\
& \cdot \left. \frac{\exp(-r \cdot (T1 + T2 + T3 + T))}{r^2} \right) \\
& - \left(\frac{C2 \cdot P \cdot \exp(-r \cdot (T1 + T2 + T3))}{r^2} \right) + \left(C2 \cdot P \cdot T \right. \\
& \cdot \left. \frac{\exp(-r \cdot (T1 + T2 + T3))}{r} \right) + \left(-C2 \cdot a \cdot s^{-\delta} \right. \\
& \cdot \left. \frac{\exp(-r \cdot (T1 + T2 + T3 + T))}{r^2} \right) + \left(C2 \cdot a \cdot s^{-\delta} \right. \\
& \cdot \left. \frac{\exp(-r \cdot (T1 + T2 + T3))}{r^2} \right) + \left(-C2 \cdot a \cdot s^{-\delta} \cdot T \right. \\
& \cdot \left. \frac{\exp(-r \cdot (T1 + T2 + T3))}{r} \right); \\
& 2.707006336 \cdot 10^7 \tag{8}
\end{aligned}$$

$$\begin{aligned}
Z := & SR - STC - HC - LSC - SC, \\
& 8.9139283 \cdot 10^5 \tag{9}
\end{aligned}$$

$$\begin{aligned}
NP := & Z \cdot (1 - \exp(-r \cdot N \cdot T)) / (1 - \exp(-r \cdot T)) - C4; \\
& 6.078362008 \cdot 10^6 \tag{10}
\end{aligned}$$

$$W := \frac{\delta}{\delta T^2} NP = 0;$$

$$\begin{aligned} & 9352.997347 + 81.38520092 T^{1.14} - 4.710234996 10^7 (\\ & -0.005134866575 - 0.00004585463630 T^{1.14}) \\ & e^{-0.005134866575 T^2 - 0.00002142740014 T^{2.14}} \\ & + 2.201032067 10^{10} (-0.005269733155 \\ & - 0.00004585463630 T^{1.14}) \\ & e^{-0.005269733155 T^2 - 0.00002142740014 T^{2.14}} - 0.1459540027 \\ & - 2.555774016 10^{10} (-0.005269733155 \\ & - 0.00004585463630 T^{1.14}) \\ & e^{-0.005269733155 T^2 - 0.00002142740014 T^{2.14}} - 0.2959540027 \\ & - 67.02310664 T^2 + 0.1675577666 T^2 \\ & - 2.417769936 10^5 (0.02697331547 T^2 \\ & + 0.004285480028 T^{2.14}) (0.02697331547 \\ & + 0.009170927260 T^{1.14}) \\ & - 38413.16724 (0.02697331547 T^2 \\ & + 0.004285480028 T^{2.14})^{2.14} (0.02697331547 \\ & + 0.009170927260 T^{1.14}) \\ & - 192.0658361 (0.02697331547 T^2 \\ & + 0.004285480028 T^{2.14})^{3.14} (0.02697331547 \\ & + 0.009170927260 T^{1.14}) \\ & + 1208.884969 (0.02697331547 T^2 \\ & + 0.004285480028 T^{2.14})^2 (0.02697331547 \\ & + 0.009170927260 T^{1.14}) - 22.78785626 T^{2.14} \end{aligned} \quad (11)$$

$$\begin{aligned}
& + 0.05696964067 T_2^{3.14} \\
& + 0.1675577666 (0.02697331547 \\
& + 0.009170927260 T_2^{1.14}) T_2^2 \\
& + 0.3351155332 (0.02697331547 T_2 \\
& + 0.004285480028 T_2^{2.14}) T_2 \\
& + 0.03628639532 (0.02697331547 \\
& + 0.009170927260 T_2^{1.14}) T_2^{3.14} \\
& + 0.1139392813 (0.02697331547 T_2 \\
& + 0.004285480028 T_2^{2.14}) T_2^{2.14} \\
& - 9.867290703 10^6 (-0.006348665774 \\
& - 0.00004585463630 T_2^{1.14}) \\
& e^{-1.313586025 - 0.006348665774 T_2 - 0.00002142740014 T_2^{2.14}} \\
& + 8.210330564 10^7 (-0.04526973316 \\
& - 0.00004585463630 T_2^{1.14}) \\
& e^{-0.04526973316 T_2 - 0.00002142740014 T_2^{2.14} - 0.1499540027} \\
& - 8.210330564 10^7 (-0.04513486658 \\
& - 0.00004585463630 T_2^{1.14}) \\
& e^{-0.04513486658 T_2 - 0.00002142740014 T_2^{2.14}} = 0
\end{aligned}$$

solve(W, T2)

$$20.77414183 \quad (12)$$

T2 := 20.77414183;

$$20.77414183 \quad (13)$$