```
10  REM MENU
20  ON ERROR GOTO 3850
30  COLOR 3, 7
40  FOR AWAL = 25 TO 1 STEP -1
50      LOCATE AWAL, 1: PRINT STRING$(80, CHR$(178))
60  NEXT
70  COLOR 9, 1
80  FOR AWAL = 8 TO 16
90      LOCATE AWAL, 30: PRINT SPC(31);
100 NEXT
110 COLOR 8, 8
120 FOR AWAL = 9 TO 16
130     LOCATE AWAL, 61: PRINT "  "
140 NEXT
150 LOCATE AWAL, 32: PRINT STRING$(31, " ")
160 COLOR 9, 1
170 LOCATE 9, 30: PRINT "           MENU          "
180 LOCATE 11, 30: PRINT " <1> INTEGRASI NUMERIK  "
190 LOCATE 12, 30: PRINT " <2> DIRECT STEP METHOD "
200 LOCATE 13, 30: PRINT " <3> INTEGRASI GRAFIS   "
210 LOCATE 14, 30: PRINT " <4> METODE INTEGRASI LANGSUNG "
220 LOCATE 15, 30: PRINT " <5> SELESAI "
230 COLOR 15, 9
240 LOCATE 11, 32: PRINT "1"
250 LOCATE 12, 32: PRINT "2"
260 LOCATE 13, 32: PRINT "3"
270 LOCATE 14, 32: PRINT "4"
280 LOCATE 15, 32: PRINT "5"
290 PCOPY 0, 1
300 PIL = 0
310 WHILE PIL <> 5
320       PCOPY 1, 0
330       PIL$ = " "
340       WHILE PIL$ < "0" OR PIL$ > "5"
350          PIL$ = INPUT$(1)
360       WEND
370       PIL = VAL(PIL$)
380       IF PIL = 1 THEN GOTO 440
390       IF PIL = 2 THEN GOTO 1250
400       IF PIL = 3 THEN GOTO 2170
410       IF PIL = 4 THEN GOTO 3050
420 WEND
430 END
440  '******************
460 OPEN "O", #1, "NUM.$$$"
470 COLOR 3, 1
480 CLS
490 FOR AWAL = 6 TO 20
500     LOCATE AWAL, 15: PRINT SPC(50);
510 NEXT
520 LOCATE 7, 18: PRINT "         MENGHITUNG ..... DENGAN         "
530 LOCATE 8, 18: PRINT "            INTEGRASI NUMERIK            "
540 LOCATE 9, 18: PRINT "         ========================        "
550 LOCATE 11, 18: PRINT "       INPUT NILAI Io : "
560 LOCATE 12, 18: PRINT "  INPUT NILAI Y Normal: "
570 LOCATE 13, 18: PRINT "     INPUT INTERVAL Y : "
580 LOCATE 14, 18: PRINT "        INPUT NILAI B : "
590 LOCATE 15, 18: PRINT "        INPUT NILAI m : "
600 LOCATE 16, 18: PRINT "        INPUT NILAI N : "
610 LOCATE 17, 18: PRINT "        INPUT NILAI M : "
```

```
0  LOCATE 18, 18: PRINT "       INPUT NILAI p : "
0  COLOR 13, 14
0  LOCATE 11, 42: INPUT "", I0
0  LOCATE 12, 42: INPUT "", y2
0  LOCATE 13, 42: INPUT "", DY
0  LOCATE 14, 42: INPUT "", B
0  LOCATE 15, 42: INPUT "", M
0  LOCATE 16, 42: INPUT "", n
0  LOCATE 17, 42: INPUT "", MB
0  LOCATE 18, 42: INPUT "", PK
0  g = 9.81
0  A# = (B + M * y2) * y2
0  P# = B + 2 * y2 * (1 + M ^ 2) ^ .5
0  R# = A# / P#
1  IF B >= 20 * y2 THEN
2     R# = y2
3  END IF
0  T = B + 2 * M * y2
0  Q = A# * (1 / n) * R# ^ (2 / 3) * I0 ^ .5
0  D = (Q / (MB * B * g ^ .5)) ^ (2 / 3)
0  y1 = PK + D
0  CLS
0  PRINT #1, "=============================================================================="
0  PRINT #1, "|   y   |    Io    |      f      |      δf      |      δx      |    L     |"
0  PRINT #1, "------------------------------------------------------------------------------"
0  FOR y = y1 TO (y2 + .01 * y2) - DY STEP -DY
0     IF y <= y2 + .01 * y2 THEN
0        y = y2 + .01 * y2
0        SUDAH = -1
0     END IF
0     ya# = yb#
0     yb# = y
0     A# = (B + M * y) * y
0     P# = B + 2 * y * (1 + M ^ 2) ^ .5
0     R# = A# / P#
1     IF B >= 20 * y2 THEN
2        R# = y
3     END IF
0     T = B + 2 * M * y
0     BAGI1# = A# ^ 2 * R# ^ (4 / 3)
0     BAGI2# = g * A# ^ 3
0     BAGI3# = 1 - (Q ^ 2 * T) / BAGI2#
0     F# = (I0 - ((n ^ 2 * Q ^ 2) / BAGI1#)) / BAGI3#
0     FB# = F#
00     IF SW THEN 1040
10        PRINT #1, USING "| ##.## | ###.#### | #####.###### |      -      |      -      |     -     |"; yb#; I0; FB#
20        SW = -1
30        GOTO 1080
40        DX# = (ya# - yb#) / ((FA# + FB#) / 2)
50        DF# = FA# - FB#
60        L# = L# + DX#
70        PRINT #1, USING "| ##.## | ###.#### | #####.###### | #####.####### | ######.###### |#######.####|"; yb#; I0; FB#; DF#; D
80        IF SUDAH THEN
90           y = y2 - DY
00        END IF
10        FA# = FB#
20 NEXT
30 PRINT #1, "------------------------------------------------------------------------------"
40 CLOSE #1
50 GOTO 10
```

```
70  END
50   '*******
70  OPEN "O", #1, "STEP.$$$"
80  COLOR 3, 1
90  CLS
00  FOR AWAL = 6 TO 19
10      LOCATE AWAL, 15: PRINT SPC(50);
20  NEXT
30  LOCATE 7, 18: PRINT "         MENGHITUNG ..... DENGAN         "
40  LOCATE 8, 18: PRINT "            DIREC STEP METHOD            "
50  LOCATE 9, 18: PRINT "         ========================        "
60  LOCATE 11, 18: PRINT "       INPUT NILAI Io : "
70  LOCATE 12, 18: PRINT "  INPUT NILAI Y Normal: "
80  LOCATE 13, 18: PRINT "     INPUT INTERVAL Y : "
90  LOCATE 14, 18: PRINT "        INPUT NILAI B : "
00  LOCATE 15, 18: PRINT "        INPUT NILAI m : "
10  LOCATE 16, 18: PRINT "        INPUT NILAI N : "
20  LOCATE 17, 18: PRINT "        INPUT NILAI M : "
30  LOCATE 18, 18: PRINT "        INPUT NILAI p : "
40  COLOR 13, 14
50  LOCATE 11, 42: INPUT "", IO
60  LOCATE 12, 42: INPUT "", y2
70  LOCATE 13, 42: INPUT "", DY
80  LOCATE 14, 42: INPUT "", B
90  LOCATE 15, 42: INPUT "", M
00  LOCATE 16, 42: INPUT "", n
10  LOCATE 17, 42: INPUT "", MB
20  LOCATE 18, 42: INPUT "", PK
30  g = 9.81
40  CLS
50  PRINT #1, "=============================================================================================================="
60  PRINT #1, "|   Y   |    A    |   R   |   V   | V²/2g  |   E   |   δE   |    If     |     If     |  ' Io-If  |   δx   |    L    |"
70  PRINT #1, "--------------------------------------------------------------------------------------------------------------"
80    ISI1$ = "| #.##  | ###.#   | #.##  | #.##  | #.#### | #.#### |   -    | #.####### |     -      |     -     |   -    |    -    |"
90    ISI2$ = "| #.##  | ###.#   | #.##  | #.##  | #.#### | #.#### | #.#### | #.####### | #.######## | #.######## | ###.#  | ####.#  |"
30  A# = (B + M * y2) * y2
40  P# = B + 2 * y2 * (1 + M ^ 2) ^ .5
50  R# = A# / P#
51  IF B >= 20 * y2 THEN
52     R# = y2
53  END IF
60  T = B + 2 * M * y2
70  Q = A# * (1 / n) * R# ^ (2 / 3) * IO ^ .5
80  D = (Q / (MB * B * g ^ .5)) ^ (2 / 3)
90  y1 = PK + D
00  CLS
10  FOR y = y1 TO (y2 + .01 * y2) - DY STEP -DY
20      IF y <= y2 + .01 * y2 THEN
30         y = y2 + .01 * y2
40         SUDAH = -1
50      END IF
60      ya# = yb#
70      yb# = y
80      EA# = EB#
90      IA# = IB#
00      A# = (B + M * y) * y
10      P# = B + 2 * y * (M ^ 2 + 1 ^ 2) ^ .5
20      R# = A# / P#
21      IF B >= 20 * y2 THEN
           R# = y
```

```
1823      END IF
1830      I# = (n ^ 2 * Q ^ 2) / (A# ^ 2 * R# ^ (4 / 3))
1840      V# = Q / A#
1850      V2G# = (V# ^ 2) / (2 * g)
1860      E# = y + V2G#
1870      EB# = E#
1880      IF SW THEN RI# = (IA# + IB#) / 2
1890      IF SW THEN DX# = (EA# - EB#) / (I0 - RI#)
1900      IF SW THEN DE# = EA# - EB#
1910      IOMINRI# = I0 - RI#
1920      L# = L# + DX#
1930      IB# = I#
1940      IF SW THEN 1980
1950         PRINT #1, USING ISI1$; yb#; A#; R#; V#; V2G#; E#; I#
1960         SW = -1
1970         GOTO 1990
1980         PRINT #1, USING ISI2$; yb#; A#; R#; V#; V2G#; E#; DE#; I#; RI#; IOMINRI#; DX#; L#
1990         IF SUDAH THEN
2000            y = y2 - DY
2010         END IF
2030   NEXT
2040   PRINT #1, "----------------------------------------------------------------------------------------------------------------
2050   CLOSE #1
2070   GOTO 10
2170    '****
2190   OPEN "O", #1, "GRAF.$$$"
2200   COLOR 3, 1
2210   CLS
2220   FOR AWAL = 6 TO 19
2230      LOCATE AWAL, 15: PRINT SPC(50);
2240   NEXT
2250   LOCATE 7, 18: PRINT "         MENGHITUNG ..... DENGAN         "
2260   LOCATE 8, 18: PRINT "          DIREC INTEGRASI GRAFIS         "
2270   LOCATE 9, 18: PRINT "         ========================        "
2280   LOCATE 11, 18: PRINT "       INPUT NILAI Io : "
2290   LOCATE 12, 18: PRINT "  INPUT NILAI Y Normal: "
2300   LOCATE 13, 18: PRINT "     INPUT INTERVAL Y : "
2310   LOCATE 14, 18: PRINT "        INPUT NILAI B : "
2320   LOCATE 15, 18: PRINT "        INPUT NILAI m : "
2330   LOCATE 16, 18: PRINT "        INPUT NILAI N : "
2340   LOCATE 17, 18: PRINT "        INPUT NILAI M : "
2350   LOCATE 18, 18: PRINT "        INPUT NILAI p : "
2360   LOCATE 19, 18: PRINT "        INPUT NILAI α : "
2370   COLOR 13, 14
2380   LOCATE 11, 42: INPUT "", I0
2390   LOCATE 12, 42: INPUT "", y2
2400   LOCATE 13, 42: INPUT "", DY
2410   LOCATE 14, 42: INPUT "", B
2420   LOCATE 15, 42: INPUT "", M
2430   LOCATE 16, 42: INPUT "", n
2440   LOCATE 17, 42: INPUT "", MB
2450   LOCATE 18, 42: INPUT "", PK
2460   LOCATE 19, 42: INPUT "", alfa
2470   g = 9.81
2480   CLS
2490   A# = (B + M * y2) * y2
2500   P# = B + 2 * y2 * (1 + M ^ 2) ^ .5
2510   R# = A# / P#
2611   IF B >= 20 * y2 THEN
2612      R# = y2
```

```
END IF
T = B + 2 * M * y2
Q# = A# * (1 / n) * R# ^ (2 / 3) * I0 ^ .5
D = (Q# / (MB * B * g ^ .5)) ^ (2 / 3)
y1 = PK + D
CLS
PRINT #1, "=========================================================================================================="
PRINT #1, "| Y(m)  | A(m²) | T(m)  | R(m)  |   5   |   If   |  1-5   | Io - If | 1-5 /Io-If |   dx   |   L    |"
PRINT #1, "----------------------------------------------------------------------------------------------------------"
  ISI1$ = "| ##.## | ###.# | ##.## | ##.### | ##.### | #.###### | #.###### | #.###### |#####.###### |   -    |   -    |"
  ISI2$ = "| ##.## | ###.# | ##.## | ##.### | ##.### | #.###### | #.###### | #.###### |#####.###### |####.#### |####.#### |"
FOR y = y1 TO (y2 + .01 * y2) - DY STEP -DY
    IF y <= y2 + .01 * y2 THEN
       y = y2 + .01 * y2
       SUDAH = -1
    END IF
    ya# = yb#
    yb# = y
    A# = (B + M * y) * y
    P# = B + 2 * y * (1 + M ^ 2) ^ .5
    R# = A# / P#
    IF B >= 20 * y2 THEN
       R# = y
    END IF
    T = B + 2 * M * y2
    K6# = (Q# ^ 2 * n ^ 2) / (R# ^ (4 / 3) * A# ^ 2)
    K5# = (alfa * Q# ^ 2 * T) / (g * A# ^ 3)
    K7# = 1 - K5#
    K8# = I0 - K6#
    k91# = K92#
    K9# = K7# / K8#
    K92# = K9#
    IF SW THEN DX# = (k91# + K92#) * ((ya# - yb#) / 2)
    L# = L# + DX#
    IF SW THEN 2860
       PRINT #1, USING ISI1$; yb#; A#; T; R#; K5#; K6#; K7#; K8#; K9#
       SW = -1
       GOTO 2870
       PRINT #1, USING ISI2$; yb#; A#; T; R#; K5#; K6#; K7#; K8#; K9#; DX#; L#
      IF SUDAH THEN
         y = y2 - DY
       END IF
NEXT
PRINT #1, "----------------------------------------------------------------------------------------------------------"
CLOSE #1
GOTO 10
 '***
OPEN "O", #1, "LANG.$$$"
DEF fnln (x) = LOG(x) / LOG(2.718281828#)
DEF fnrad (x) = x * (3.141592654# / 180)
COLOR 3, 1
CLS
FOR AWAL = 6 TO 19
    LOCATE AWAL, 15: PRINT SPC(50);
NEXT
LOCATE 7, 18: PRINT "         MENGHITUNG ..... DENGAN         "
LOCATE 8, 18: PRINT "          DIREC LANGSUR   GRAFIS         "
LOCATE 9, 18: PRINT "         ========================        "
LOCATE 11, 18: PRINT "       INPUT NILAI Io : "
LOCATE 12, 18: PRINT "  INPUT NILAI Y Normal: "
```

```
3200  LOCATE 13, 18: PRINT "     INPUT INTERVAL Y : "
3210  LOCATE 14, 18: PRINT "        INPUT NILAI B : "
3220  LOCATE 15, 18: PRINT "        INPUT NILAI m : "
3230  LOCATE 16, 18: PRINT "        INPUT NILAI N : "
3240  LOCATE 17, 18: PRINT "        INPUT NILAI M : "
3250  LOCATE 18, 18: PRINT "        INPUT NILAI p : "
3260  LOCATE 19, 18: PRINT "        INPUT NILAI α : "
3270  COLOR 13, 14
3280  LOCATE 11, 42: INPUT "", I0
3290  LOCATE 12, 42: INPUT "", y2
3300  LOCATE 13, 42: INPUT "", DY
3310  LOCATE 14, 42: INPUT "", B
3320  LOCATE 15, 42: INPUT "", M
3330  LOCATE 16, 42: INPUT "", n
3340  LOCATE 17, 42: INPUT "", MB
3350  LOCATE 18, 42: INPUT "", PK
3360  LOCATE 19, 42: INPUT "", alfa
3370  g = 9.81
3380  CLS
3390  A# = (B + M * y2) * y2
3400  P# = B + 2 * y2 * (1 + M ^ 2) ^ .5
3410  R# = A# / P#
3411  IF B >= 20 * y2 THEN
3412     R# = y2
3413  END IF
3420  T = B + 2 * M * y2
3430  Q# = A# * (1 / n) * R# ^ (2 / 3) * I0 ^ .5
3440  D = (Q# / (MB * B * g ^ .5)) ^ (2 / 3)
3450  y1 = PK + D
3460  delta# = n ^ 2 / R# ^ (1 / 3)
3470  CLS
3480  PRINT #1, "=============================================================="
3490  PRINT #1, "| Y(m)  | Y/Yn | HASIL |   dH    |   dX    |    L    |"
3500  PRINT #1, "--------------------------------------------------------------"
3510    ISI1$ = "| ##.## |##.### | ##.### |    -    |    -    |    -    |"
3520    ISI2$ = "| ##.## |##.### | ##.### | ##.#### |####.#### |####.#### |"
3530  FOR y = y1 TO (y2 + .01 * y2) - DY STEP -DY
3540     IF y <= y2 + .01 * y2 THEN
3550        y = y2 + .01 * y2
3560        SUDAH = -1
3570     END IF
3580     ya# = yb#
3590     yb# = y
3600     A# = (B + M * y) * y
3610     P# = B + 2 * y * (1 + M ^ 2) ^ .5
3620     R# = A# / P#
3621     IF B >= 20 * y2 THEN
3622        R# = y
3623     END IF
3630     T = B + 2 * M * y2
3640     u# = y / y2
3650     hasil1# = hasil2#
3660     hasil# = (1 / 6) * fnln(((u# ^ 2 + u# + 1) / (u# - 1) ^ 2)) - TAN(fnrad((1 / (3 ^ .5)) * (ATN((3 ^ .5) / (2 *
3670     hasil2# = hasil#
3680     IF SW THEN L# = ((ya# - yb#) + (1 - (alfa * I0) / (delta# * g)) * (hasil2# - hasil1#) * y2) / I0
3690     IF SW THEN jmlL# = jmlL# + L#
3700     IF SW THEN 3740
3710        PRINT #1, USING ISI1$; yb#; yb# / y2; hasil#
3720        SW = -1
3730        GOTO 3750
```

```
3740          PRINT #1, USING ISI2$; yb#; yb# / y2; hasil#; hasil2# - hasil1#; L#; jmlL#
3750          IF SUDAH THEN
3760             y = y2 - DY
3770          END IF
3790    NEXT
3800    PRINT #1, "------------------------------------------------------------"
3810    CLOSE #1
3830    GOTO 10
3840    END
3850    PRINT : PRINT
3860    IF ERR = 6 THEN PRINT "DATA INPUT MENYEBABKAN HASIL TAK HINGGA"
3870    IF ERR = 11 THEN PRINT "PROSES MENJUMPAI PENYEBUT NOL "
3880    PRINT : PRINT
3890    PRINT "TEKAN SEBARANG KUNCI UNTUK MENGULANG"
3900    TUNGGU$ = INPUT$(1): CLOSE #1
3910    RESUME 5000
5000    GOTO 10
```

Y(m)	A(m²)	T(m)	R(m)	S	If	1-Sf (dx)	Io - If	1-S /Io-If	dx	L
3.55	26.8	8.00	1.909	0.013	0.000113	0.9869767	0.000887	1112.697640	-	-
3.50	26.3	8.00	1.889	0.014	0.000119	0.9861371	0.000881	1119.956167	55.8163	55.8163
3.45	25.7	8.00	1.869	0.015	0.000126	0.9852324	0.000874	1127.842986	56.1949	112.0112
3.40	25.2	8.00	1.848	0.016	0.000134	0.9842566	0.000866	1136.430506	56.6068	168.6180
3.35	24.6	8.00	1.828	0.017	0.000142	0.9832031	0.000858	1145.802059	57.0558	225.6738
3.30	24.1	8.00	1.807	0.018	0.000151	0.9820647	0.000849	1156.054013	57.5463	283.2201
3.25	23.6	8.00	1.786	0.019	0.000160	0.9808332	0.000840	1167.298377	58.0838	341.3039
3.20	23.0	8.00	1.766	0.021	0.000170	0.9794997	0.000830	1179.666070	58.6741	399.9779
3.15	22.5	8.00	1.745	0.022	0.000180	0.9780542	0.000820	1193.311031	59.3244	459.3023
3.10	22.0	8.00	1.724	0.024	0.000192	0.9764856	0.000808	1208.415460	60.0431	519.3454
3.05	21.5	8.00	1.703	0.025	0.000204	0.9747814	0.000796	1225.196544	60.8402	580.1856
3.00	21.0	8.00	1.682	0.027	0.000218	0.9729279	0.000782	1243.915202	61.7277	641.9134
2.95	20.5	8.00	1.661	0.029	0.000232	0.9709094	0.000768	1264.887598	62.7200	704.6334
2.90	20.0	8.00	1.640	0.031	0.000248	0.9687086	0.000752	1288.500470	63.8346	768.4680
2.85	19.5	8.00	1.619	0.034	0.000265	0.9663061	0.000735	1315.231879	65.0932	833.5613
2.80	19.0	8.00	1.598	0.036	0.000284	0.9636797	0.000716	1345.679721	66.5227	900.0840
2.75	18.6	8.00	1.576	0.039	0.000304	0.9608048	0.000696	1380.601630	68.1570	968.2410
2.70	18.1	8.00	1.555	0.042	0.000326	0.9576535	0.000674	1420.971967	70.0393	1038.2802
2.65	17.6	8.00	1.533	0.046	0.000350	0.9541941	0.000650	1468.065067	72.2259	1110.5061
2.60	17.2	8.00	1.512	0.050	0.000376	0.9503907	0.000624	1523.580051	74.7911	1185.2971
2.55	16.7	8.00	1.490	0.054	0.000405	0.9462026	0.000595	1589.833619	77.8353	1263.1324
2.50	16.3	8.00	1.468	0.058	0.000436	0.9415835	0.000564	1670.068311	81.4975	1344.6299
2.45	15.8	8.00	1.446	0.064	0.000471	0.9364803	0.000529	1768.965898	85.9758	1430.6057
2.40	15.4	8.00	1.424	0.069	0.000508	0.9308326	0.000492	1893.545002	91.5627	1522.1683
2.35	14.9	8.00	1.402	0.075	0.000550	0.9245708	0.000450	2054.826274	98.7092	1620.8775
2.30	14.5	8.00	1.380	0.082	0.000596	0.9176151	0.000404	2271.158117	108.1495	1729.0270
2.25	14.1	8.00	1.357	0.090	0.000647	0.9098733	0.000353	2575.519997	121.1668	1850.1939
2.20	13.6	8.00	1.335	0.099	0.000703	0.9012390	0.000297	3033.735182	140.2312	1990.4251
2.15	13.2	8.00	1.312	0.108	0.000765	0.8915886	0.000235	3798.907499	170.8159	2161.2410
2.10	12.8	8.00	1.289	0.119	0.000835	0.8807785	0.000165	5327.817185	228.1679	2389.4089
2.05	12.4	8.00	1.266	0.131	0.000912	0.8686409	0.000088	9874.384468	380.0547	2769.4636
2.02	12.2	8.00	1.252	0.140	0.000964	0.8604101	0.000036	24023.362174	522.6049	3292.0685

y	Io	f	δf	δx	L
3.55	0.0010	0.000903	-	-	-
3.50	0.0010	0.000898	0.0000057	55.525739	55.5257
3.45	0.0010	0.000891	0.0000061	55.893293	111.4190
3.40	0.0010	0.000885	0.0000066	56.293569	167.7126
3.35	0.0010	0.000878	0.0000071	56.730430	224.4430
3.30	0.0010	0.000870	0.0000076	57.208339	281.6514
3.25	0.0010	0.000862	0.0000082	57.732471	339.3838
3.20	0.0010	0.000853	0.0000089	58.308861	397.6927
3.15	0.0010	0.000843	0.0000096	58.944588	456.6373
3.10	0.0010	0.000833	0.0000104	59.648009	516.2853
3.05	0.0010	0.000822	0.0000113	60.429051	576.7143
3.00	0.0010	0.000810	0.0000122	61.299602	638.0140
2.95	0.0010	0.000796	0.0000133	62.274010	700.2880
2.90	0.0010	0.000782	0.0000145	63.369751	763.6577
2.85	0.0010	0.000766	0.0000158	64.608319	828.2660
2.80	0.0010	0.000749	0.0000172	66.016452	894.2825
2.75	0.0010	0.000730	0.0000189	67.627818	961.9103
2.70	0.0010	0.000709	0.0000207	69.485409	1031.3957
2.65	0.0010	0.000687	0.0000227	71.644992	1103.0407
2.60	0.0010	0.000662	0.0000250	74.180224	1177.2209
2.55	0.0010	0.000634	0.0000276	77.190432	1254.4114
2.50	0.0010	0.000603	0.0000305	80.812836	1335.2242
2.45	0.0010	0.000570	0.0000338	85.242496	1420.4667
2.40	0.0010	0.000532	0.0000376	90.766342	1511.2330
2.35	0.0010	0.000490	0.0000419	97.824432	1609.0575
2.30	0.0010	0.000443	0.0000469	107.127763	1716.1852
2.25	0.0010	0.000391	0.0000526	119.904629	1836.0899
2.20	0.0010	0.000331	0.0000592	138.475560	1974.5654
2.15	0.0010	0.000264	0.0000670	167.814197	2142.3796
2.10	0.0010	0.000188	0.0000761	220.856115	2363.2357
2.05	0.0010	0.000101	0.0000869	345.060329	2708.2961
2.02	0.0010	0.000042	0.0000598	430.863936	3139.1600

Y	A	R	V	$V^2/2g$	E	δE	If	$\bar{I}f$	Io-$\bar{I}f$	δx	L
3.55	26.8	1.91	0.65	0.0218	3.5727	-	0.0001130	-	-	-	-
3.50	26.3	1.89	0.67	0.0228	3.5236	0.0491	0.0001195	0.00011299	0.00088701	55.3	55.3
3.45	25.7	1.87	0.68	0.0237	3.4746	0.0490	0.0001264	0.00011949	0.00088051	55.7	111.0
3.40	25.2	1.85	0.70	0.0248	3.4256	0.0490	0.0001339	0.00012645	0.00087355	56.1	167.0
3.35	24.6	1.83	0.71	0.0259	3.3767	0.0489	0.0001419	0.00013391	0.00086609	56.5	223.5
3.30	24.1	1.81	0.73	0.0270	3.3278	0.0488	0.0001505	0.00014191	0.00085809	56.9	280.4
3.25	23.6	1.79	0.74	0.0282	3.2791	0.0488	0.0001597	0.00015050	0.00084950	57.4	337.9
3.20	23.0	1.77	0.76	0.0295	3.2304	0.0487	0.0001697	0.00015974	0.00084026	58.0	395.8
3.15	22.5	1.74	0.78	0.0309	3.1817	0.0486	0.0001804	0.00016968	0.00083032	58.6	454.4
3.10	22.0	1.72	0.80	0.0324	3.1332	0.0485	0.0001919	0.00018039	0.00081961	59.2	513.6
3.05	21.5	1.70	0.82	0.0339	3.0847	0.0485	0.0002044	0.00019193	0.00080807	60.0	573.6
3.00	21.0	1.68	0.84	0.0355	3.0364	0.0484	0.0002179	0.00020439	0.00079561	60.8	634.4
2.95	20.5	1.66	0.86	0.0373	2.9881	0.0483	0.0002324	0.00021785	0.00078215	61.7	696.1
2.90	20.0	1.64	0.88	0.0391	2.9400	0.0481	0.0002482	0.00023241	0.00076759	62.7	758.8
2.85	19.5	1.62	0.90	0.0411	2.8920	0.0480	0.0002653	0.00024819	0.00075181	63.9	822.6
2.80	19.0	1.60	0.92	0.0432	2.8441	0.0479	0.0002839	0.00026530	0.00073470	65.2	887.8
2.75	18.6	1.58	0.94	0.0455	2.7963	0.0477	0.0003041	0.00028387	0.00071613	66.7	954.5
2.70	18.1	1.55	0.97	0.0479	2.7487	0.0476	0.0003261	0.00030407	0.00069593	68.4	1022.9
2.65	17.6	1.53	1.00	0.0505	2.7013	0.0474	0.0003500	0.00032606	0.00067394	70.4	1093.3
2.60	17.2	1.51	1.02	0.0532	2.6541	0.0472	0.0003762	0.00035003	0.00064997	72.7	1165.9
2.55	16.7	1.49	1.05	0.0562	2.6070	0.0470	0.0004048	0.00037621	0.00062379	75.4	1241.4
2.50	16.3	1.47	1.08	0.0594	2.5602	0.0468	0.0004362	0.00040484	0.00059516	78.7	1320.0
2.45	15.8	1.45	1.11	0.0628	2.5136	0.0466	0.0004706	0.00043620	0.00056380	82.6	1402.7
2.40	15.4	1.42	1.14	0.0664	2.4673	0.0463	0.0005084	0.00047061	0.00052939	87.5	1490.2
2.35	14.9	1.40	1.18	0.0704	2.4212	0.0460	0.0005500	0.00050842	0.00049158	93.7	1583.9
2.30	14.5	1.38	1.21	0.0746	2.3755	0.0457	0.0005960	0.00055005	0.00044995	101.6	1685.5
2.25	14.1	1.36	1.25	0.0793	2.3301	0.0454	0.0006467	0.00059597	0.00040403	112.4	1797.9
2.20	13.6	1.33	1.29	0.0842	2.2851	0.0450	0.0007029	0.00064672	0.00035328	127.4	1925.3
2.15	13.2	1.31	1.33	0.0896	2.2405	0.0446	0.0007653	0.00070293	0.00029707	150.1	2075.4
2.10	12.8	1.29	1.37	0.0955	2.1963	0.0441	0.0008347	0.00076530	0.00023470	188.1	2263.5
2.05	12.4	1.27	1.41	0.1019	2.1527	0.0436	0.0009120	0.00083468	0.00016532	263.9	2527.4
2.02	12.2	1.25	1.44	0.1061	2.1261	0.0266	0.0009642	0.00091203	0.00008797	302.6	2830.0

Y(m)	Y/Yn	HASIL	dH	dX	L
3.55	1.775	0.168	-	-	-
3.50	1.750	0.174	0.0055	59.0461	59.04615
3.45	1.725	0.180	0.0058	59.5377	118.58385
3.40	1.700	0.186	0.0061	60.0690	178.65286
3.35	1.675	0.192	0.0065	60.6451	239.29800
3.30	1.650	0.199	0.0068	61.2710	300.56899
3.25	1.625	0.206	0.0072	61.9529	362.52190
3.20	1.600	0.214	0.0077	62.6979	425.21979
3.15	1.575	0.222	0.0082	63.5144	488.73422
3.10	1.550	0.231	0.0087	64.4122	553.14646
3.05	1.525	0.240	0.0093	65.4031	618.54957
3.00	1.500	0.250	0.0100	66.5011	685.05071
2.95	1.475	0.261	0.0107	67.7230	752.77375
2.90	1.450	0.272	0.0116	69.0895	821.86330
2.85	1.425	0.285	0.0125	70.6260	892.48927
2.80	1.400	0.299	0.0136	72.3637	964.85293
2.75	1.375	0.313	0.0148	74.3425	1039.19541
2.70	1.350	0.329	0.0161	76.6129	1115.80834
2.65	1.325	0.347	0.0177	79.2406	1195.04892
2.60	1.300	0.367	0.0196	82.3124	1277.36134
2.55	1.275	0.389	0.0218	85.9454	1363.30670
2.50	1.250	0.413	0.0244	90.3011	1453.60781
2.45	1.225	0.441	0.0277	95.6097	1549.21754
2.40	1.200	0.472	0.0317	102.2100	1651.42754
2.35	1.175	0.509	0.0368	110.6221	1762.04967
2.30	1.150	0.553	0.0435	121.6876	1883.73730
2.25	1.125	0.605	0.0527	136.8663	2020.60356
2.20	1.100	0.671	0.0660	158.9282	2179.53178
2.15	1.075	0.758	0.0872	193.8704	2373.40219
2.10	1.050	0.884	0.1259	257.6237	2631.02594
2.05	1.025	1.104	0.2198	412.5212	3043.54714
2.02	1.010	1.410	0.3056	534.9055	3578.45261

Y(m)	A(m²)	T(m)	R(m)	S	If	1-S	Io - If	1-S /Io-If	dx	L
3.49	47.2	14.00	2.371	0.022	0.000145	0.9778235	0.000855	1143.395840	-	-
3.44	46.3	14.00	2.345	0.023	0.000152	0.9765843	0.000848	1152.133795	57.3882	57.3882
3.39	45.5	14.00	2.319	0.025	0.000160	0.9752591	0.000840	1161.623622	57.8439	115.2321
3.34	44.6	14.00	2.293	0.026	0.000169	0.9738408	0.000831	1171.954148	58.3394	173.5715
3.29	43.8	14.00	2.267	0.028	0.000178	0.9723215	0.000822	1183.228139	58.8795	232.4510
3.24	43.0	14.00	2.241	0.029	0.000188	0.9706925	0.000812	1195.565118	59.4698	291.9207
3.19	42.1	14.00	2.214	0.031	0.000199	0.9689441	0.000801	1209.104879	60.1167	352.0374
3.14	41.3	14.00	2.187	0.033	0.000210	0.9670658	0.000790	1224.011929	60.8279	412.8653
3.09	40.5	14.00	2.161	0.035	0.000222	0.9650459	0.000778	1240.481148	61.6123	474.4776
3.04	39.7	14.00	2.134	0.037	0.000235	0.9628714	0.000765	1258.745074	62.4806	536.9581
2.99	38.9	14.00	2.107	0.039	0.000249	0.9605279	0.000751	1279.083385	63.4457	600.4038
2.94	38.1	14.00	2.079	0.042	0.000264	0.9579995	0.000736	1301.835401	64.5229	664.9267
2.89	37.3	14.00	2.052	0.045	0.000280	0.9552685	0.000720	1327.416774	65.7312	730.6580
2.84	36.5	14.00	2.024	0.048	0.000298	0.9523151	0.000702	1356.342111	67.0939	797.7519
2.79	35.7	14.00	1.997	0.051	0.000317	0.9491171	0.000683	1389.256153	68.6399	866.3917
2.74	35.0	14.00	1.969	0.054	0.000337	0.9456501	0.000663	1426.977506	70.4058	936.7975
2.69	34.2	14.00	1.941	0.058	0.000360	0.9418862	0.000640	1470.561296	72.4384	1009.2359
2.64	33.4	14.00	1.913	0.062	0.000384	0.9377946	0.000616	1521.390979	74.7987	1084.0347
2.59	32.7	14.00	1.884	0.067	0.000410	0.9333402	0.000590	1581.316540	77.5676	1161.6023
2.54	31.9	14.00	1.856	0.072	0.000438	0.9284839	0.000562	1652.868854	80.8546	1242.4568
2.49	31.2	14.00	1.827	0.077	0.000469	0.9231811	0.000531	1739.604220	84.8117	1327.2686
2.44	30.4	14.00	1.798	0.083	0.000503	0.9173816	0.000497	1846.681597	89.6571	1416.9256
2.39	29.7	14.00	1.769	0.089	0.000540	0.9110283	0.000460	1981.879233	95.7139	1512.6396
2.34	28.9	14.00	1.740	0.096	0.000581	0.9040562	0.000419	2157.497525	103.4843	1616.1239
2.29	28.2	14.00	1.711	0.104	0.000626	0.8963914	0.000374	2394.202738	113.7924	1729.9163
2.24	27.5	14.00	1.681	0.112	0.000675	0.8879491	0.000325	2729.594031	128.0948	1858.0111
2.19	26.8	14.00	1.651	0.121	0.000729	0.8786322	0.000271	3240.009549	149.2399	2007.2510
2.14	26.0	14.00	1.621	0.132	0.000789	0.8683289	0.000211	4107.720512	183.6931	2190.9441
2.09	25.3	14.00	1.591	0.143	0.000855	0.8569103	0.000145	5902.275914	250.2497	2441.1938
2.04	24.6	14.00	1.560	0.156	0.000928	0.8442274	0.000072	11774.408641	441.9167	2883.1105
2.02	24.3	14.00	1.545	0.162	0.000967	0.8376036	0.000033	25121.960872	445.1742	3328.2847

y	Io	f	δf	δx	L
3.49	0.0010	0.000879	-	-	-
3.44	0.0010	0.000872	0.0000066	57.106528	57.1065
3.39	0.0010	0.000865	0.0000070	57.553733	114.6603
3.34	0.0010	0.000858	0.0000075	58.040430	172.7007
3.29	0.0010	0.000850	0.0000081	58.571390	231.2721
3.24	0.0010	0.000841	0.0000087	59.152149	290.4242
3.19	0.0010	0.000832	0.0000093	59.789167	350.2134
3.14	0.0010	0.000822	0.0000100	60.490023	410.7034
3.09	0.0010	0.000811	0.0000108	61.263669	471.9671
3.04	0.0010	0.000799	0.0000117	62.120750	534.0878
2.99	0.0010	0.000786	0.0000126	63.074021	597.1619
2.94	0.0010	0.000773	0.0000137	64.138893	661.3008
2.89	0.0010	0.000758	0.0000148	65.334159	726.6349
2.84	0.0010	0.000742	0.0000161	66.682962	793.3179
2.79	0.0010	0.000724	0.0000175	68.214136	861.5320
2.74	0.0010	0.000705	0.0000191	69.964049	931.4961
2.69	0.0010	0.000684	0.0000209	71.979230	1003.4753
2.64	0.0010	0.000661	0.0000229	74.320174	1077.7955
2.59	0.0010	0.000636	0.0000251	77.066991	1154.8625
2.54	0.0010	0.000609	0.0000276	80.328033	1235.1905
2.49	0.0010	0.000578	0.0000304	84.253522	1319.4440
2.44	0.0010	0.000545	0.0000336	89.057909	1408.5019
2.39	0.0010	0.000507	0.0000373	95.058265	1503.5602
2.34	0.0010	0.000466	0.0000414	102.743949	1606.3041
2.29	0.0010	0.000420	0.0000462	112.911958	1719.2161
2.24	0.0010	0.000368	0.0000517	126.953634	1846.1697
2.19	0.0010	0.000310	0.0000581	147.535487	1993.7052
2.14	0.0010	0.000244	0.0000656	180.493977	2174.1992
2.09	0.0010	0.000170	0.0000744	241.537440	2415.7366
2.04	0.0010	0.000085	0.0000848	392.408112	2808.1447
2.02	0.0010	0.000040	0.0000452	386.539448	3194.6842

Y	A	R	V	$V^2/2g$	E	δE	If	$\overline{If}$	$Io-\overline{If}$	δx	L
3.49	47.2	2.37	0.86	0.0373	3.5315	-	0.0001448	-	-	-	-
3.44	46.3	2.35	0.87	0.0387	3.4829	0.0486	0.0001524	0.00014481	0.00085519	56.9	56.9
3.39	45.5	2.32	0.89	0.0402	3.4343	0.0486	0.0001604	0.00015237	0.00084763	57.3	114.1
3.34	44.6	2.29	0.90	0.0417	3.3858	0.0485	0.0001690	0.00016043	0.00083957	57.7	171.9
3.29	43.8	2.27	0.92	0.0433	3.3374	0.0484	0.0001782	0.00016905	0.00083095	58.2	230.1
3.24	43.0	2.24	0.94	0.0450	3.2891	0.0483	0.0001881	0.00017825	0.00082175	58.8	288.9
3.19	42.1	2.21	0.96	0.0467	3.2409	0.0482	0.0001986	0.00018809	0.00081191	59.4	348.3
3.14	41.3	2.19	0.98	0.0486	3.1927	0.0481	0.0002099	0.00019863	0.00080137	60.1	408.4
3.09	40.5	2.16	1.00	0.0506	3.1447	0.0480	0.0002220	0.00020992	0.00079008	60.8	469.2
3.04	39.7	2.13	1.02	0.0527	3.0968	0.0479	0.0002351	0.00022204	0.00077796	61.6	530.8
2.99	38.9	2.11	1.04	0.0548	3.0490	0.0478	0.0002490	0.00023505	0.00076495	62.5	593.3
2.94	38.1	2.08	1.06	0.0572	3.0013	0.0477	0.0002641	0.00024905	0.00075095	63.5	656.8
2.89	37.3	2.05	1.08	0.0596	2.9537	0.0475	0.0002804	0.00026412	0.00073588	64.6	721.4
2.84	36.5	2.02	1.10	0.0622	2.9063	0.0474	0.0002979	0.00028036	0.00071964	65.9	787.3
2.79	35.7	2.00	1.13	0.0650	2.8591	0.0472	0.0003168	0.00029788	0.00070212	67.3	854.6
2.74	35.0	1.97	1.15	0.0679	2.8120	0.0471	0.0003373	0.00031682	0.00068318	68.9	923.5
2.69	34.2	1.94	1.18	0.0710	2.7651	0.0469	0.0003595	0.00033731	0.00066269	70.8	994.2
2.64	33.4	1.91	1.21	0.0743	2.7184	0.0467	0.0003836	0.00035951	0.00064049	72.9	1067.2
2.59	32.7	1.88	1.24	0.0778	2.6719	0.0465	0.0004098	0.00038359	0.00061641	75.4	1142.6
2.54	31.9	1.86	1.26	0.0815	2.6256	0.0463	0.0004383	0.00040977	0.00059023	78.4	1221.0
2.49	31.2	1.83	1.30	0.0855	2.5796	0.0460	0.0004693	0.00043826	0.00056174	81.9	1302.9
2.44	30.4	1.80	1.33	0.0897	2.5339	0.0457	0.0005032	0.00046932	0.00053068	86.2	1389.1
2.39	29.7	1.77	1.36	0.0943	2.4884	0.0455	0.0005403	0.00050323	0.00049677	91.5	1480.6
2.34	28.9	1.74	1.39	0.0992	2.4433	0.0451	0.0005810	0.00054032	0.00045968	98.2	1578.8
2.29	28.2	1.71	1.43	0.1044	2.3985	0.0448	0.0006256	0.00058097	0.00041903	106.9	1685.7
2.24	27.5	1.68	1.47	0.1100	2.3541	0.0444	0.0006747	0.00062560	0.00037440	118.6	1804.3
2.19	26.8	1.65	1.51	0.1160	2.3101	0.0440	0.0007288	0.00067470	0.00032530	135.2	1939.5
2.14	26.0	1.62	1.55	0.1224	2.2666	0.0435	0.0007886	0.00072882	0.00027118	160.5	2100.0
2.09	25.3	1.59	1.59	0.1294	2.2236	0.0430	0.0008548	0.00078861	0.00021139	203.5	2303.5
2.04	24.6	1.56	1.64	0.1370	2.1811	0.0425	0.0009283	0.00085482	0.00014518	292.5	2596.0
2.02	24.3	1.55	1.66	0.1408	2.1608	0.0203	0.0009667	0.00092830	0.00007170	282.8	2878.8

Y(m)	Y/Yn	HASIL	dH	dX	L
3.49	1.747	0.175	-	-	-
3.44	1.722	0.180	0.0058	59.4584	59.45843
3.39	1.697	0.186	0.0062	59.9873	119.44573
3.34	1.672	0.193	0.0065	60.5607	180.00644
3.29	1.647	0.200	0.0069	61.1840	241.19041
3.24	1.622	0.207	0.0073	61.8633	303.05367
3.19	1.597	0.215	0.0078	62.6057	365.65940
3.14	1.572	0.223	0.0083	63.4198	429.07919
3.09	1.547	0.232	0.0088	64.3153	493.39452
3.04	1.522	0.241	0.0094	65.3043	558.69881
2.99	1.497	0.252	0.0101	66.4006	625.09942
2.94	1.472	0.262	0.0109	67.6216	692.72098
2.89	1.447	0.274	0.0117	68.9878	761.70881
2.84	1.422	0.287	0.0126	70.5252	832.23403
2.79	1.397	0.300	0.0137	72.2655	904.49951
2.74	1.372	0.315	0.0149	74.2491	978.74863
2.69	1.347	0.332	0.0163	76.5276	1055.27618
2.64	1.322	0.350	0.0180	79.1679	1134.44410
2.59	1.297	0.370	0.0199	82.2590	1216.70309
2.54	1.272	0.392	0.0221	85.9209	1302.62397
2.49	1.247	0.416	0.0248	90.3203	1392.94430
2.44	1.222	0.445	0.0281	95.6953	1488.63957
2.39	1.197	0.477	0.0323	102.3982	1591.03780
2.34	1.172	0.514	0.0375	110.9733	1702.01112
2.29	1.147	0.559	0.0445	122.3093	1824.32040
2.24	1.122	0.613	0.0542	137.9623	1962.28274
2.19	1.097	0.681	0.0683	160.9319	2123.21459
2.14	1.072	0.773	0.0910	197.8530	2321.06759
2.09	1.047	0.906	0.1336	267.0209	2588.08847
2.04	1.022	1.150	0.2440	446.2077	3034.29619
2.02	1.010	1.410	0.2596	445.7618	3480.05799

Y(m)	A(m²)	T(m)	R(m)	5	If	1-5	Io - If	1-5 /Io-If	dx	L
3.49	81.9	24.00	2.742	0.028	0.000154	0.9716564	0.000846	1149.178567	-	-
3.44	80.5	24.00	2.710	0.030	0.000162	0.9702112	0.000838	1158.079277	57.6814	57.6814
3.39	79.2	24.00	2.677	0.031	0.000170	0.9686719	0.000830	1167.744998	58.1456	115.8269
3.34	77.9	24.00	2.645	0.033	0.000179	0.9670311	0.000821	1178.266618	58.6502	174.4772
3.29	76.5	24.00	2.612	0.035	0.000189	0.9652804	0.000811	1189.749390	59.2003	233.6775
3.24	75.2	24.00	2.579	0.037	0.000199	0.9634109	0.000801	1202.315855	59.8016	293.4791
3.19	73.9	24.00	2.546	0.039	0.000209	0.9614126	0.000791	1216.109489	60.4606	353.9397
3.14	72.6	24.00	2.513	0.041	0.000221	0.9592744	0.000779	1231.299331	61.1852	415.1248
3.09	71.2	24.00	2.480	0.043	0.000233	0.9569844	0.000767	1248.085880	61.9846	477.1094
3.04	69.9	24.00	2.447	0.045	0.000246	0.9545292	0.000754	1266.708699	62.8698	539.9792
2.99	68.6	24.00	2.413	0.048	0.000261	0.9518941	0.000739	1287.456340	63.8541	603.8333
2.94	67.3	24.00	2.379	0.051	0.000276	0.9490627	0.000724	1310.679445	64.9533	668.7866
2.89	66.1	24.00	2.345	0.054	0.000292	0.9460169	0.000708	1336.808287	66.1871	734.9737
2.84	64.8	24.00	2.311	0.057	0.000310	0.9427366	0.000690	1366.376600	67.5796	802.5533
2.79	63.5	24.00	2.277	0.061	0.000329	0.9391994	0.000671	1400.054511	69.1607	871.7140
2.74	62.2	24.00	2.243	0.065	0.000350	0.9353804	0.000650	1438.694891	70.9687	942.6827
2.69	60.9	24.00	2.208	0.069	0.000372	0.9312517	0.000628	1483.399976	73.0523	1015.7350
2.64	59.7	24.00	2.173	0.073	0.000396	0.9267820	0.000604	1535.619403	75.4754	1091.2104
2.59	58.4	24.00	2.138	0.078	0.000423	0.9219364	0.000577	1597.298443	78.3229	1169.5333
2.54	57.2	24.00	2.103	0.083	0.000451	0.9166754	0.000549	1671.109172	81.7101	1251.2434
2.49	55.9	24.00	2.068	0.089	0.000483	0.9109548	0.000517	1760.824323	85.7983	1337.0416
2.44	54.7	24.00	2.033	0.095	0.000517	0.9047245	0.000483	1871.948329	90.8192	1427.8609
2.39	53.4	24.00	1.997	0.102	0.000554	0.8979278	0.000446	2012.838697	97.1196	1524.9804
2.34	52.2	24.00	1.961	0.109	0.000595	0.8905004	0.000405	2196.828356	105.2416	1630.2220
2.29	50.9	24.00	1.925	0.118	0.000639	0.8823692	0.000361	2446.573587	116.0849	1746.3070
2.24	49.7	24.00	1.889	0.127	0.000688	0.8734507	0.000312	2803.926956	131.2624	1877.5693
2.19	48.5	24.00	1.852	0.136	0.000743	0.8636496	0.000257	3355.727019	153.9912	2031.5605
2.14	47.3	24.00	1.816	0.147	0.000802	0.8528563	0.000198	4316.441264	191.8040	2223.3646
2.09	46.1	24.00	1.779	0.159	0.000869	0.8409450	0.000131	6398.811576	267.8811	2491.2456
2.04	44.9	24.00	1.742	0.172	0.000942	0.8277701	0.000058	14265.881594	516.6168	3007.8625
2.02	44.5	24.00	1.730	0.177	0.000967	0.8232360	0.000033	25165.318418	317.1377	3325.0002

y	Io	f	δf	δx	L
3.49	0.0010	0.000873	-	-	-
3.44	0.0010	0.000867	0.0000067	57.470384	57.4704
3.39	0.0010	0.000860	0.0000071	57.929127	115.3995
3.34	0.0010	0.000852	0.0000076	58.428202	173.8277
3.29	0.0010	0.000844	0.0000082	58.972500	232.8002
3.24	0.0010	0.000835	0.0000088	59.567701	292.3679
3.19	0.0010	0.000826	0.0000094	60.220436	352.5883
3.14	0.0010	0.000815	0.0000101	60.938499	413.5268
3.09	0.0010	0.000804	0.0000109	61.731099	475.2579
3.04	0.0010	0.000793	0.0000118	62.609205	537.8672
2.99	0.0010	0.000780	0.0000127	63.585975	601.4531
2.94	0.0010	0.000766	0.0000138	64.677332	666.1305
2.89	0.0010	0.000751	0.0000150	65.902720	732.0332
2.84	0.0010	0.000735	0.0000162	67.286133	799.3193
2.79	0.0010	0.000717	0.0000177	68.857514	868.1768
2.74	0.0010	0.000698	0.0000193	70.654722	938.8315
2.69	0.0010	0.000677	0.0000210	72.726311	1011.5579
2.64	0.0010	0.000654	0.0000230	75.135586	1086.6934
2.59	0.0010	0.000629	0.0000253	77.966648	1164.6601
2.54	0.0010	0.000601	0.0000278	81.333678	1245.9938
2.49	0.0010	0.000570	0.0000307	85.395675	1331.3894
2.44	0.0010	0.000536	0.0000339	90.380807	1421.7703
2.39	0.0010	0.000499	0.0000376	96.628574	1518.3988
2.34	0.0010	0.000457	0.0000419	104.667077	1623.0659
2.29	0.0010	0.000410	0.0000467	115.365030	1738.4309
2.24	0.0010	0.000358	0.0000524	130.259029	1868.6900
2.19	0.0010	0.000299	0.0000589	152.347919	2021.0379
2.14	0.0010	0.000232	0.0000666	188.374815	2209.4127
2.09	0.0010	0.000156	0.0000756	257.321844	2466.7345
2.04	0.0010	0.000070	0.0000864	441.242105	2907.9766
2.02	0.0010	0.000040	0.0000304	292.751072	3200.7277

Y	A	R	V	$V^2/2g$	E	δE	If	If	Io-If	δx	L
3.49	81.9	2.74	0.97	0.0483	3.5344	-	0.0001545	-	-	-	-
3.44	80.5	2.71	0.99	0.0500	3.4861	0.0484	0.0001622	0.00015448	0.00084552	57.2	57.2
3.39	79.2	2.68	1.01	0.0517	3.4378	0.0483	0.0001705	0.00016222	0.00083778	57.6	114.9
3.34	77.9	2.64	1.02	0.0535	3.3896	0.0482	0.0001793	0.00017048	0.00082952	58.1	173.0
3.29	76.5	2.61	1.04	0.0553	3.3414	0.0481	0.0001887	0.00017928	0.00082072	58.6	231.6
3.24	75.2	2.58	1.06	0.0573	3.2934	0.0480	0.0001987	0.00018867	0.00081133	59.2	290.8
3.19	73.9	2.55	1.08	0.0594	3.2455	0.0479	0.0002094	0.00019870	0.00080130	59.8	350.6
3.14	72.6	2.51	1.10	0.0616	3.1976	0.0478	0.0002209	0.00020944	0.00079056	60.5	411.1
3.09	71.2	2.48	1.12	0.0638	3.1499	0.0477	0.0002332	0.00022093	0.00077907	61.2	472.4
3.04	69.9	2.45	1.14	0.0663	3.1023	0.0476	0.0002464	0.00023324	0.00076676	62.1	534.4
2.99	68.6	2.41	1.16	0.0688	3.0549	0.0475	0.0002606	0.00024645	0.00075355	63.0	597.4
2.94	67.3	2.38	1.18	0.0715	3.0075	0.0473	0.0002759	0.00026064	0.00073936	64.0	661.4
2.89	66.1	2.35	1.21	0.0743	2.9604	0.0472	0.0002923	0.00027590	0.00072410	65.2	726.6
2.84	64.8	2.31	1.23	0.0773	2.9133	0.0470	0.0003100	0.00029233	0.00070767	66.4	793.0
2.79	63.5	2.28	1.26	0.0804	2.8665	0.0469	0.0003292	0.00031005	0.00068995	67.9	860.9
2.74	62.2	2.24	1.28	0.0837	2.8198	0.0467	0.0003498	0.00032917	0.00067083	69.6	930.5
2.69	60.9	2.21	1.31	0.0873	2.7734	0.0465	0.0003722	0.00034984	0.00065016	71.5	1002.0
2.64	59.7	2.17	1.34	0.0910	2.7271	0.0463	0.0003965	0.00037222	0.00062778	73.7	1075.7
2.59	58.4	2.14	1.37	0.0950	2.6811	0.0460	0.0004228	0.00039648	0.00060352	76.3	1151.9
2.54	57.2	2.10	1.40	0.0992	2.6353	0.0458	0.0004515	0.00042282	0.00057718	79.3	1231.2
2.49	55.9	2.07	1.43	0.1037	2.5898	0.0455	0.0004827	0.00045146	0.00054854	83.0	1314.2
2.44	54.7	2.03	1.46	0.1085	2.5446	0.0452	0.0005167	0.00048265	0.00051735	87.4	1401.6
2.39	53.4	2.00	1.49	0.1136	2.4997	0.0449	0.0005539	0.00051669	0.00048331	92.9	1494.5
2.34	52.2	1.96	1.53	0.1190	2.4551	0.0446	0.0005946	0.00055390	0.00044610	99.9	1594.4
2.29	50.9	1.93	1.57	0.1249	2.4109	0.0442	0.0006393	0.00059464	0.00040536	109.0	1703.4
2.24	49.7	1.89	1.60	0.1311	2.3672	0.0438	0.0006885	0.00063934	0.00036066	121.4	1824.7
2.19	48.5	1.85	1.64	0.1378	2.3239	0.0433	0.0007426	0.00068849	0.00031151	139.1	1963.8
2.14	47.3	1.82	1.69	0.1450	2.2810	0.0428	0.0008024	0.00074263	0.00025737	166.4	2130.2
2.09	46.1	1.78	1.73	0.1527	2.2388	0.0423	0.0008686	0.00080242	0.00019758	214.0	2344.1
2.04	44.9	1.74	1.78	0.1610	2.1971	0.0417	0.0009420	0.00086858	0.00013142	317.2	2661.3
2.02	44.5	1.73	1.79	0.1638	2.1838	0.0133	0.0009673	0.00094198	0.00005802	228.7	2890.0

Y(m)	Y/Yn	HASIL	dH	dX	L
3.49	1.743	0.175	-	-	-
3.44	1.718	0.181	0.0059	59.4565	59.45646
3.39	1.693	0.188	0.0062	59.9874	119.44387
3.34	1.668	0.194	0.0066	60.5634	180.00727
3.29	1.643	0.201	0.0070	61.1896	241.19690
3.24	1.618	0.208	0.0074	61.8725	303.06941
3.19	1.593	0.216	0.0078	62.6192	365.68864
3.14	1.568	0.225	0.0083	63.4384	429.12707
3.09	1.543	0.234	0.0089	64.3401	493.46714
3.04	1.518	0.243	0.0095	65.3364	558.80356
2.99	1.493	0.253	0.0102	66.4417	625.24525
2.94	1.468	0.264	0.0110	67.6736	692.91884
2.89	1.443	0.276	0.0118	69.0532	761.97204
2.84	1.418	0.289	0.0128	70.6070	832.57902
2.79	1.393	0.303	0.0139	72.3678	904.94686
2.74	1.368	0.318	0.0151	74.3772	979.32402
2.69	1.343	0.334	0.0166	76.6882	1056.01226
2.64	1.318	0.353	0.0182	79.3705	1135.38278
2.59	1.293	0.373	0.0202	82.5164	1217.89915
2.54	1.268	0.395	0.0225	86.2509	1304.15003
2.49	1.243	0.421	0.0253	90.7488	1394.89879
2.44	1.218	0.450	0.0287	96.2608	1491.15962
2.39	1.193	0.483	0.0330	103.1601	1594.31972
2.34	1.168	0.521	0.0385	112.0282	1706.34793
2.29	1.143	0.567	0.0459	123.8240	1830.17196
2.24	1.118	0.623	0.0561	140.2493	1970.42127
2.19	1.093	0.694	0.0712	164.6456	2135.06690
2.14	1.068	0.790	0.0961	204.6178	2339.68474
2.09	1.043	0.935	0.1443	282.1845	2621.86925
2.04	1.018	1.216	0.2813	502.7187	3124.58794
2.02	1.010	1.410	0.1939	328.2394	3452.82731

Y(m)	A(m²)	T(m)	R(m)	5	If	1-5	Io - If	1-5 /Io-If	dx	L
3.49	116.7	34.00	2.928	0.031	0.000157	0.9688465	0.000843	1148.626299	-	-
3.44	114.9	34.00	2.892	0.033	0.000164	0.9673204	0.000836	1157.468188	57.6523	57.6523
3.39	113.0	34.00	2.856	0.034	0.000173	0.9656974	0.000827	1167.070893	58.1134	115.7657
3.34	111.2	34.00	2.820	0.036	0.000181	0.9639701	0.000819	1177.524919	58.6148	174.3806
3.29	109.4	34.00	2.783	0.038	0.000191	0.9621300	0.000809	1188.935086	59.1614	233.5420
3.24	107.5	34.00	2.747	0.040	0.000201	0.9601680	0.000799	1201.423443	59.7589	293.3009
3.19	105.7	34.00	2.710	0.042	0.000212	0.9580741	0.000788	1215.132905	60.4139	353.7148
3.14	103.9	34.00	2.673	0.044	0.000223	0.9558371	0.000777	1230.231865	61.1341	414.8488
3.09	102.1	34.00	2.636	0.047	0.000235	0.9534450	0.000765	1246.920075	61.9287	476.7776
3.04	100.3	34.00	2.599	0.049	0.000249	0.9508843	0.000751	1265.436232	62.8088	539.5864
2.99	98.5	34.00	2.562	0.052	0.000263	0.9481402	0.000737	1286.067870	63.7875	603.3740
2.94	96.7	34.00	2.524	0.055	0.000278	0.9451963	0.000722	1309.164429	64.8807	668.2547
2.89	94.9	34.00	2.487	0.058	0.000294	0.9420344	0.000706	1335.154747	66.1079	734.3626
2.84	93.1	34.00	2.449	0.061	0.000312	0.9386345	0.000688	1364.570836	67.4931	801.8557
2.79	91.3	34.00	2.411	0.065	0.000331	0.9349741	0.000669	1398.080726	69.0662	870.9219
2.74	89.6	34.00	2.373	0.069	0.000352	0.9310282	0.000648	1436.534713	70.8653	941.7872
2.69	87.8	34.00	2.335	0.073	0.000374	0.9267691	0.000626	1481.031829	72.9391	1014.7263
2.64	86.0	34.00	2.297	0.078	0.000398	0.9221654	0.000602	1533.017678	75.3512	1090.0775
2.59	84.3	34.00	2.258	0.083	0.000425	0.9171824	0.000575	1594.432375	78.1862	1168.2637
2.54	82.5	34.00	2.220	0.088	0.000453	0.9117809	0.000547	1667.941314	81.5593	1249.8229
2.49	80.8	34.00	2.181	0.094	0.000484	0.9059167	0.000516	1757.308440	85.6312	1335.4541
2.44	79.0	34.00	2.142	0.100	0.000518	0.8995401	0.000482	1868.026458	90.6333	1426.0874
2.39	77.3	34.00	2.103	0.107	0.000556	0.8925948	0.000444	2008.437067	96.9115	1522.9989
2.34	75.5	34.00	2.063	0.115	0.000596	0.8850171	0.000404	2191.851922	105.0071	1628.0060
2.29	73.8	34.00	2.024	0.123	0.000641	0.8767346	0.000359	2440.899748	115.8187	1743.8247
2.24	72.1	34.00	1.984	0.132	0.000690	0.8676646	0.000310	2797.403537	130.9575	1874.7821
2.19	70.4	34.00	1.944	0.142	0.000744	0.8577128	0.000256	3348.203704	153.6400	2028.4222
2.14	68.6	34.00	1.904	0.153	0.000803	0.8467712	0.000197	4308.017453	191.4053	2219.8275
2.09	66.9	34.00	1.864	0.165	0.000869	0.8347153	0.000131	6391.931636	267.4985	2487.3260
2.04	65.2	34.00	1.824	0.179	0.000943	0.8214020	0.000057	14307.161634	517.4768	3004.8028
2.02	64.7	34.00	1.811	0.183	0.000967	0.8169003	0.000033	25063.060776	311.5175	3316.3204

y	Io	f	δf	δx	L
3.49	0.0010	0.000873	-	-	-
3.44	0.0010	0.000866	0.0000066	57.488202	57.4882
3.39	0.0010	0.000859	0.0000071	57.945391	115.4336
3.34	0.0010	0.000852	0.0000076	58.442745	173.8763
3.29	0.0010	0.000844	0.0000081	58.985136	232.8615
3.24	0.0010	0.000835	0.0000087	59.578224	292.4397
3.19	0.0010	0.000825	0.0000094	60.228617	352.6683
3.14	0.0010	0.000815	0.0000101	60.944079	413.6124
3.09	0.0010	0.000804	0.0000109	61.733788	475.3462
3.04	0.0010	0.000793	0.0000117	62.608675	537.9549
2.99	0.0010	0.000780	0.0000127	63.581853	601.5367
2.94	0.0010	0.000766	0.0000137	64.669192	666.2059
2.89	0.0010	0.000751	0.0000149	65.890075	732.0960
2.84	0.0010	0.000735	0.0000162	67.268418	799.3644
2.79	0.0010	0.000718	0.0000176	68.834075	868.1985
2.74	0.0010	0.000698	0.0000192	70.624790	938.8233
2.69	0.0010	0.000677	0.0000210	72.688977	1011.5122
2.64	0.0010	0.000654	0.0000230	75.089766	1086.6020
2.59	0.0010	0.000629	0.0000252	77.911036	1164.5130
2.54	0.0010	0.000601	0.0000278	81.266677	1245.7797
2.49	0.0010	0.000571	0.0000306	85.315314	1331.0950
2.44	0.0010	0.000537	0.0000339	90.284616	1421.3796
2.39	0.0010	0.000499	0.0000376	96.513416	1517.8931
2.34	0.0010	0.000457	0.0000419	104.528920	1622.4220
2.29	0.0010	0.000411	0.0000468	115.198663	1737.6206
2.24	0.0010	0.000358	0.0000524	130.057843	1867.6785
2.19	0.0010	0.000299	0.0000590	152.104443	2019.7829
2.14	0.0010	0.000232	0.0000667	188.085884	2207.8688
2.09	0.0010	0.000157	0.0000759	257.026154	2464.8950
2.04	0.0010	0.000070	0.0000867	441.440729	2906.3357
2.02	0.0010	0.000040	0.0000300	288.155263	3194.4910

Y	A	R	V	$V^2/2g$	E	δE	If	If	Io-If	δx	L
3.49	116.7	2.93	1.02	0.0535	3.5393	-	0.0001565	-	-	-	-
3.44	114.9	2.89	1.04	0.0552	3.4910	0.0483	0.0001643	0.00015652	0.00084348	57.2	57.2
3.39	113.0	2.86	1.06	0.0570	3.4428	0.0482	0.0001725	0.00016428	0.00083572	57.7	114.9
3.34	111.2	2.82	1.08	0.0589	3.3947	0.0481	0.0001814	0.00017255	0.00082745	58.1	173.0
3.29	109.4	2.78	1.09	0.0609	3.3467	0.0480	0.0001908	0.00018136	0.00081864	58.6	231.7
3.24	107.5	2.75	1.11	0.0630	3.2988	0.0479	0.0002008	0.00019076	0.00080924	59.2	290.9
3.19	105.7	2.71	1.13	0.0652	3.2510	0.0478	0.0002115	0.00020081	0.00079919	59.8	350.7
3.14	103.9	2.67	1.15	0.0675	3.2033	0.0477	0.0002230	0.00021155	0.00078845	60.5	411.2
3.09	102.1	2.64	1.17	0.0699	3.1557	0.0476	0.0002354	0.00022304	0.00077696	61.2	472.4
3.04	100.3	2.60	1.19	0.0724	3.1083	0.0475	0.0002486	0.00023536	0.00076464	62.1	534.5
2.99	98.5	2.56	1.21	0.0751	3.0609	0.0473	0.0002628	0.00024857	0.00075143	63.0	597.5
2.94	96.7	2.52	1.24	0.0779	3.0138	0.0472	0.0002780	0.00026276	0.00073724	64.0	661.5
2.89	94.9	2.49	1.26	0.0809	2.9667	0.0470	0.0002944	0.00027802	0.00072198	65.1	726.6
2.84	93.1	2.45	1.28	0.0840	2.9199	0.0469	0.0003121	0.00029444	0.00070556	66.4	793.1
2.79	91.3	2.41	1.31	0.0873	2.8732	0.0467	0.0003312	0.00031214	0.00068786	67.9	860.9
2.74	89.6	2.37	1.34	0.0908	2.8267	0.0465	0.0003519	0.00033124	0.00066876	69.5	930.5
2.69	87.8	2.34	1.36	0.0945	2.7804	0.0463	0.0003742	0.00035189	0.00064811	71.4	1001.9
2.64	86.0	2.30	1.39	0.0985	2.7343	0.0461	0.0003985	0.00037424	0.00062576	73.6	1075.5
2.59	84.3	2.26	1.42	0.1026	2.6884	0.0458	0.0004248	0.00039846	0.00060154	76.2	1151.7
2.54	82.5	2.22	1.45	0.1070	2.6429	0.0456	0.0004533	0.00042476	0.00057524	79.2	1231.0
2.49	80.8	2.18	1.48	0.1117	2.5976	0.0453	0.0004845	0.00045335	0.00054665	82.9	1313.9
2.44	79.0	2.14	1.51	0.1167	2.5525	0.0450	0.0005185	0.00048449	0.00051551	87.3	1401.2
2.39	77.3	2.10	1.55	0.1220	2.5079	0.0447	0.0005556	0.00051845	0.00048155	92.8	1494.0
2.34	75.5	2.06	1.58	0.1277	2.4635	0.0443	0.0005962	0.00055558	0.00044442	99.7	1593.7
2.29	73.8	2.02	1.62	0.1338	2.4196	0.0439	0.0006408	0.00059622	0.00040378	108.8	1702.5
2.24	72.1	1.98	1.66	0.1403	2.3761	0.0435	0.0006898	0.00064082	0.00035918	121.2	1823.7
2.19	70.4	1.94	1.70	0.1472	2.3330	0.0431	0.0007438	0.00068983	0.00031017	138.8	1962.5
2.14	68.6	1.90	1.74	0.1547	2.2905	0.0425	0.0008034	0.00074383	0.00025617	166.1	2128.6
2.09	66.9	1.86	1.79	0.1627	2.2485	0.0420	0.0008694	0.00080344	0.00019656	213.6	2342.2
2.04	65.2	1.82	1.83	0.1713	2.2071	0.0414	0.0009426	0.00086941	0.00013059	316.9	2659.0
2.02	64.7	1.81	1.85	0.1742	2.1942	0.0130	0.0009674	0.00094259	0.00005741	225.7	2884.8

Y(m)	Y/Yn	HASIL	dH	dX	L
3.49	1.743	0.175	-	-	-
3.44	1.718	0.181	0.0059	59.4240	59.42398
3.39	1.693	0.188	0.0062	59.9532	119.37723
3.34	1.668	0.194	0.0066	60.5273	179.90456
3.29	1.643	0.201	0.0070	61.1514	241.05601
3.24	1.618	0.208	0.0074	61.8321	302.88815
3.19	1.593	0.216	0.0078	62.5764	365.46458
3.14	1.568	0.225	0.0084	63.3930	428.85755
3.09	1.543	0.234	0.0089	64.2918	493.14931
3.04	1.518	0.243	0.0095	65.2850	558.43428
2.99	1.493	0.253	0.0102	66.3867	624.82099
2.94	1.468	0.264	0.0110	67.6147	692.43570
2.89	1.443	0.276	0.0118	68.9901	761.42578
2.84	1.418	0.289	0.0128	70.5391	831.96489
2.79	1.393	0.303	0.0139	72.2945	904.25940
2.74	1.368	0.318	0.0152	74.2978	978.55723
2.69	1.343	0.335	0.0166	76.6021	1055.15930
2.64	1.318	0.353	0.0183	79.2766	1134.43586
2.59	1.293	0.373	0.0202	82.4134	1216.84922
2.54	1.268	0.396	0.0225	86.1375	1302.98672
2.49	1.243	0.421	0.0253	90.6233	1393.60999
2.44	1.218	0.450	0.0288	96.1209	1489.73094
2.39	1.193	0.483	0.0331	103.0030	1592.73394
2.34	1.168	0.521	0.0386	111.8506	1704.58455
2.29	1.143	0.567	0.0459	123.6214	1828.20593
2.24	1.118	0.623	0.0561	140.0162	1968.22215
2.19	1.093	0.695	0.0713	164.3777	2132.59985
2.14	1.068	0.791	0.0962	204.3182	2336.91801
2.09	1.043	0.936	0.1446	281.9172	2618.83525
2.04	1.018	1.218	0.2827	503.2900	3122.12528
2.02	1.010	1.410	0.1916	323.0181	3445.14342

Y(m)	A(m²)	T(m)	R(m)	S	If	1-S	Io - If	1-S /Io-If	dx	L
3.49	139.6	40.00	3.491	0.039	0.000156	0.9613546	0.000844	1139.310708	-	-
3.44	137.6	40.00	3.441	0.040	0.000164	0.9596453	0.000836	1147.751700	57.1765	57.1765
3.39	135.6	40.00	3.391	0.042	0.000172	0.9578336	0.000828	1156.924533	57.6169	114.7934
3.34	133.6	40.00	3.341	0.044	0.000181	0.9559119	0.000819	1166.916351	58.0960	172.8893
3.29	131.6	40.00	3.291	0.046	0.000190	0.9538717	0.000810	1177.828053	58.6186	231.5079
3.24	129.6	40.00	3.241	0.048	0.000200	0.9517035	0.000800	1189.777074	59.1901	290.6979
3.19	127.6	40.00	3.191	0.051	0.000211	0.9493974	0.000789	1202.900876	59.8169	350.5148
3.14	125.6	40.00	3.141	0.053	0.000222	0.9469420	0.000778	1217.361345	60.5065	411.0213
3.09	123.6	40.00	3.091	0.056	0.000234	0.9443252	0.000766	1233.350410	61.2677	472.2891
3.04	121.6	40.00	3.041	0.058	0.000247	0.9415334	0.000753	1251.097276	62.1111	534.4002
2.99	119.6	40.00	2.991	0.061	0.000261	0.9385518	0.000739	1270.877845	63.0493	597.4495
2.94	117.6	40.00	2.941	0.065	0.000277	0.9353640	0.000723	1293.027152	64.0976	661.5471
2.89	115.6	40.00	2.891	0.068	0.000293	0.9319519	0.000707	1317.955979	65.2745	726.8216
2.84	113.6	40.00	2.841	0.072	0.000310	0.9282952	0.000690	1346.173403	66.6032	793.4248
2.79	111.6	40.00	2.791	0.076	0.000329	0.9243718	0.000671	1378.317895	68.1122	861.5370
2.74	109.6	40.00	2.741	0.080	0.000350	0.9201569	0.000650	1415.201021	69.8379	931.3749
2.69	107.6	40.00	2.691	0.084	0.000372	0.9156228	0.000628	1457.870112	71.8267	1003.2016
2.64	105.6	40.00	2.641	0.089	0.000396	0.9107389	0.000604	1507.700278	74.1392	1077.3408
2.59	103.6	40.00	2.591	0.095	0.000422	0.9054706	0.000578	1566.533145	76.8558	1154.1966
2.54	101.6	40.00	2.541	0.100	0.000450	0.8997794	0.000550	1636.892546	80.0856	1234.2821
2.49	99.6	40.00	2.491	0.106	0.000481	0.8936221	0.000519	1722.332049	83.9805	1318.2627
2.44	97.6	40.00	2.441	0.113	0.000515	0.8869499	0.000485	1828.018984	88.7587	1407.0214
2.39	95.6	40.00	2.391	0.120	0.000552	0.8797078	0.000448	1961.766775	94.7446	1501.7659
2.34	93.6	40.00	2.341	0.128	0.000592	0.8718337	0.000408	2135.975917	102.4435	1604.2094
2.29	91.6	40.00	2.291	0.137	0.000636	0.8632570	0.000364	2371.577126	112.6887	1716.8981
2.24	89.6	40.00	2.241	0.146	0.000685	0.8538978	0.000315	2706.886406	126.9615	1843.8596
2.19	87.6	40.00	2.191	0.156	0.000738	0.8436646	0.000262	3220.380851	148.1815	1992.0411
2.14	85.6	40.00	2.141	0.168	0.000797	0.8324529	0.000203	4101.991561	183.0591	2175.1002
2.09	83.6	40.00	2.091	0.180	0.000862	0.8201431	0.000138	5959.863820	251.5461	2426.6464
2.04	81.6	40.00	2.041	0.193	0.000935	0.8065972	0.000065	12380.960953	458.5202	2885.1666
2.02	80.8	40.00	2.020	0.199	0.000967	0.8005518	0.000033	24538.946547	384.5501	3269.7167

y	Io	f	δf	δx	L
3.49	0.0010	0.000878	-	-	-
3.44	0.0010	0.000871	0.0000065	57.175727	57.1757
3.39	0.0010	0.000864	0.0000069	57.615938	114.7917
3.34	0.0010	0.000857	0.0000074	58.094893	172.8866
3.29	0.0010	0.000849	0.0000079	58.617285	231.5038
3.24	0.0010	0.000840	0.0000085	59.188564	290.6924
3.19	0.0010	0.000831	0.0000092	59.815092	350.5075
3.14	0.0010	0.000821	0.0000099	60.504338	411.0118
3.09	0.0010	0.000811	0.0000106	61.265128	472.2770
3.04	0.0010	0.000799	0.0000115	62.107964	534.3849
2.99	0.0010	0.000787	0.0000124	63.045440	597.4304
2.94	0.0010	0.000773	0.0000135	64.092781	661.5231
2.89	0.0010	0.000759	0.0000146	65.268566	726.7917
2.84	0.0010	0.000743	0.0000159	66.595700	793.3874
2.79	0.0010	0.000726	0.0000173	68.102737	861.4902
2.74	0.0010	0.000707	0.0000189	69.825733	931.3159
2.69	0.0010	0.000686	0.0000207	71.810868	1003.1268
2.64	0.0010	0.000663	0.0000227	74.118258	1077.2450
2.59	0.0010	0.000638	0.0000249	76.827616	1154.0726
2.54	0.0010	0.000611	0.0000274	80.046933	1234.1196
2.49	0.0010	0.000581	0.0000303	83.926209	1318.0458
2.44	0.0010	0.000547	0.0000336	88.680040	1406.7258
2.39	0.0010	0.000510	0.0000373	94.626551	1501.3524
2.34	0.0010	0.000468	0.0000416	102.258316	1603.6107
2.29	0.0010	0.000422	0.0000465	112.380861	1715.9915
2.24	0.0010	0.000369	0.0000522	126.407996	1842.3995
2.19	0.0010	0.000311	0.0000589	147.069414	1989.4689
2.14	0.0010	0.000244	0.0000667	180.405510	2169.8745
2.09	0.0010	0.000168	0.0000760	242.970000	2412.8445
2.04	0.0010	0.000081	0.0000870	402.319876	2815.1643
2.02	0.0010	0.000041	0.0000400	342.848408	3158.0127

Y	A	R	V	$V^2/2g$	E	δE	If	If	Io-If	δx	L
3.49	139.6	3.49	1.15	0.0675	3.5583	-	0.0001562	-	-	-	-
3.44	137.6	3.44	1.17	0.0694	3.5103	0.0480	0.0001639	0.00015620	0.00084380	56.9	56.9
3.39	135.6	3.39	1.18	0.0715	3.4623	0.0479	0.0001721	0.00016389	0.00083611	57.3	114.2
3.34	133.6	3.34	1.20	0.0736	3.4145	0.0478	0.0001808	0.00017209	0.00082791	57.8	172.0
3.29	131.6	3.29	1.22	0.0759	3.3667	0.0477	0.0001901	0.00018082	0.00081918	58.3	230.3
3.24	129.6	3.24	1.24	0.0783	3.3191	0.0476	0.0002001	0.00019014	0.00080986	58.8	289.1
3.19	127.6	3.19	1.26	0.0807	3.2716	0.0475	0.0002107	0.00020010	0.00079990	59.4	348.6
3.14	125.6	3.14	1.28	0.0833	3.2242	0.0474	0.0002221	0.00021074	0.00078926	60.1	408.6
3.09	123.6	3.09	1.30	0.0860	3.1769	0.0473	0.0002343	0.00022214	0.00077786	60.8	469.4
3.04	121.6	3.04	1.32	0.0889	3.1297	0.0471	0.0002474	0.00023434	0.00076566	61.6	531.0
2.99	119.6	2.99	1.34	0.0919	3.0827	0.0470	0.0002615	0.00024743	0.00075257	62.5	593.5
2.94	117.6	2.94	1.37	0.0950	3.0359	0.0468	0.0002766	0.00026149	0.00073851	63.4	656.9
2.89	115.6	2.89	1.39	0.0984	2.9892	0.0467	0.0002929	0.00027661	0.00072339	64.5	721.4
2.84	113.6	2.84	1.41	0.1019	2.9427	0.0465	0.0003104	0.00029288	0.00070712	65.8	787.2
2.79	111.6	2.79	1.44	0.1055	2.8964	0.0463	0.0003293	0.00031042	0.00068958	67.2	854.4
2.74	109.6	2.74	1.47	0.1094	2.8502	0.0461	0.0003498	0.00032935	0.00067065	68.8	923.1
2.69	107.6	2.69	1.49	0.1135	2.8044	0.0459	0.0003719	0.00034980	0.00065020	70.6	993.7
2.64	105.6	2.64	1.52	0.1179	2.7587	0.0457	0.0003959	0.00037194	0.00062806	72.7	1066.4
2.59	103.6	2.59	1.55	0.1225	2.7133	0.0454	0.0004220	0.00039594	0.00060406	75.2	1141.6
2.54	101.6	2.54	1.58	0.1273	2.6682	0.0451	0.0004503	0.00042199	0.00057801	78.1	1219.7
2.49	99.6	2.49	1.61	0.1325	2.6233	0.0448	0.0004812	0.00045031	0.00054969	81.6	1301.2
2.44	97.6	2.44	1.65	0.1380	2.5788	0.0445	0.0005148	0.00048116	0.00051884	85.8	1387.0
2.39	95.6	2.39	1.68	0.1438	2.5346	0.0442	0.0005516	0.00051480	0.00048520	91.0	1478.1
2.34	93.6	2.34	1.72	0.1500	2.4908	0.0438	0.0005918	0.00055157	0.00044843	97.7	1575.7
2.29	91.6	2.29	1.75	0.1566	2.4475	0.0434	0.0006360	0.00059183	0.00040817	106.3	1682.0
2.24	89.6	2.24	1.79	0.1637	2.4045	0.0429	0.0006845	0.00063600	0.00036400	117.9	1799.9
2.19	87.6	2.19	1.83	0.1713	2.3621	0.0424	0.0007380	0.00068455	0.00031545	134.5	1934.5
2.14	85.6	2.14	1.88	0.1793	2.3202	0.0419	0.0007971	0.00073802	0.00026198	160.0	2094.5
2.09	83.6	2.09	1.92	0.1880	2.2789	0.0413	0.0008624	0.00079706	0.00020294	203.6	2298.1
2.04	81.6	2.04	1.97	0.1974	2.2382	0.0407	0.0009349	0.00086239	0.00013761	295.6	2593.6
2.02	80.8	2.02	1.99	0.2014	2.2214	0.0167	0.0009674	0.00093485	0.00006515	257.0	2850.6

Y(m)	Y/Yn	HASIL	dH	dX	L
3.49	1.745	0.175	-	-	-
3.44	1.720	0.181	0.0058	59.2882	59.28818
3.39	1.695	0.187	0.0062	59.8084	119.09663
3.34	1.670	0.193	0.0065	60.3726	179.46920
3.29	1.645	0.200	0.0069	60.9859	240.45515
3.24	1.620	0.208	0.0073	61.6544	302.10957
3.19	1.595	0.215	0.0078	62.3853	364.49490
3.14	1.570	0.224	0.0083	63.1869	427.68179
3.09	1.545	0.233	0.0089	64.0688	491.75062
3.04	1.520	0.242	0.0095	65.0430	556.79361
2.99	1.495	0.252	0.0101	66.1233	622.91690
2.94	1.470	0.263	0.0109	67.3267	690.24364
2.89	1.445	0.275	0.0118	68.6739	758.91754
2.84	1.420	0.288	0.0127	70.1903	829.10784
2.79	1.395	0.301	0.0138	71.9076	901.01547
2.74	1.370	0.316	0.0150	73.8660	974.88149
2.69	1.345	0.333	0.0164	76.1166	1050.99807
2.64	1.320	0.351	0.0181	78.7265	1129.72458
2.59	1.295	0.371	0.0200	81.7840	1211.50858
2.54	1.270	0.393	0.0223	85.4092	1296.91778
2.49	1.245	0.418	0.0250	89.7690	1386.68682
2.44	1.220	0.447	0.0284	95.1022	1481.78900
2.39	1.195	0.479	0.0326	101.7629	1583.55189
2.34	1.170	0.517	0.0379	110.3005	1693.85240
2.29	1.145	0.562	0.0451	121.6149	1815.46731
2.24	1.120	0.617	0.0549	137.2912	1952.75854
2.19	1.095	0.687	0.0695	160.4070	2113.16550
2.14	1.070	0.780	0.0930	197.8494	2311.01486
2.09	1.045	0.917	0.1378	268.9777	2579.99255
2.04	1.020	1.175	0.2580	459.9438	3039.93637
2.02	1.010	1.410	0.2343	393.1504	3433.08681