



LAMPIRAN

***PROGRAM KOMPUTER PADA PERHITUNGAN
DARI ALGORITMA METODE POWELL
(FORTRAN)***

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 Options: xtype,list,extensions,warnings,terminal,check

(Chek Program dari Listing System Watfor77)

Compile time:	10.65	Execution time:	01:55.78
Size of object code:	14220	Number of extensions:	19
Size of local data area(s):	2343	Number of warnings:	2
Size of global data area:	1249	Number of errors:	0
Object/Dynamic bytes free:	233163/26677	Statements Executed:	15611

```

C      PROGRAM UTAMA UNTUK SUBROUTINE SSQMIN (1 - 58)

1      DIMENSION F(6),X(3),E(3),W(100)
2      CHARACTER*1 LAGI
3 332  WRITE(*,'(10(/))')
4      WRITE(*,003)
5 003  FORMAT(5X,'*XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX',/,
1      5X,'*      PERHITUNGAN DARI ALGORITMA METODE POWELL      ',/,
+      5X,'*XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX')
6      WRITE(*,113)
7 113  FORMAT(5X,'-----')
8      WRITE(*,'(5X,A,NN)')'Parameter dari M      = '
9      READ(*,'(BN,2I10)')M
10     WRITE(*,'(5X,A,NN)')'Parameter dari N      = '
11     READ(*,'(BN,2I10)')N
12     WRITE(*,'(5X,A,NN)')'Parameter dari MAXFUN = '
13     READ(*,'(BN,2I10)')MAXFUN
14     WRITE(*,'(5X,A,NN)')'Parameter dari EPSILN = '
15     READ(*,'(BN,2E10.4)')EPSILN
16     WRITE(*,111)
17 111  FORMAT(5X,'-----')
18     DO 200 I=1,N
19         WRITE(*,'(5X,A,I2,A,NN)')'HARGA X('I,') = '
20 200   READ(*,'(1E16.8)')X(I)
21     WRITE(*,222)
22 222  FORMAT(5X,'-----')
23     DO 300 J=1,N
24         WRITE(*,'(5X,A,I2,A,NN)')'HARGA E('J,') = '
25 300   READ(*,'(1E16.8)')E(J)
26     WRITE(*,221)
27 221  FORMAT(5X,'-----')
28     WRITE(*,'((/))')
29 336  WRITE(*,'(5X,A,N)')'Sudah yakin dengan input datamu (S/B) ? '
30     READ(*,'(A)')LAGI
31     IF (LAGI .EQ. 'B' .OR. LAGI .EQ. 'b') THEN
32         GO TO 332
33     ELSEIF (LAGI .EQ. 'S' .OR. LAGI .EQ. 's') THEN
34         GO TO 334
35     ELSE
36         GO TO 336
37     ENDIF
38 334  CONTINUE
39     CALL SSQMIN(M,N,MAXFUN,IPRINT,EPSILN,F,X,E,FF)
40     WRITE(*,333)
  
```

```

41 333 FORMAT(5X, '-----')
42 WRITE(*,004)FF
43 004 FORMAT(/,5X, 'Total kuadrat terkecil (FF) =',1X,1PE16.8)
44 WRITE(*,444)
45 444 FORMAT(/,5X, '-----')
46 WRITE(*, '(15(/))')
47 PAUSE
48 WRITE(*,551)
49 551 FORMAT(5X, '-----')
50 WRITE(*,005)
51 005 FORMAT(//,10X, 'Hasil koefisien akhir (X(I)) :',/)
52 WRITE(*,006)(J,X(J),J=1,N)
53 006 FORMAT(8X, ' X(',I2,') =',2X,E16.8)
54 WRITE(*,552)
55 552 FORMAT(/,5X, '----- finish -----')
56 WRITE(*, '(10(/))')
57 PAUSE
58 STOP
59 END

60 SUBROUTINE CALFUN (M,N,F,X)
61 DIMENSION F(M),X(N),W(100)
62 F(1) = X(1) + X(2)*EXP(-5.*X(3)) - 127.0
63 F(2) = X(1) + X(2)*EXP(-3.*X(3)) - 151.0
64 F(3) = X(1) + X(2)*EXP(-1.*X(3)) - 379.0
65 F(4) = X(1) + X(2)*EXP( 1.*X(3)) - 421.0
66 F(5) = X(1) + X(2)*EXP( 3.*X(3)) - 460.0
67 F(6) = X(1) + X(2)*EXP( 5.*X(3)) - 426.0
68 RETURN
69 END

70 SUBROUTINE SSQMIN (M,N,MAXFUN,IPRINT,EPSILN,F,X,E,FF)
71 DIMENSION F(M),X(N),E(N),W(100)
72 LOGICAL STOP,MAXCAL,CONTIN,FIRST
73 WRITE(*,555)
74 555 FORMAT(/, '-----')
75 WRITE(*,012)M,N,MAXFUN,EPSILN
76 012 FORMAT(4X, 'Parameter dari Program Utama :',//,
1' M =',I3,/, ' N =',I3,/,
1' MAXFUN =',I5,/, ' EPSILN =',1E10.4)
77 WRITE(*,666)
78 666 FORMAT(1X, '-----')
79 WRITE(*,013)
80 013 FORMAT(4X, 'Harga-harga awal dari Program Utama :')
81 WRITE(*,070)(J,X(J),J=1,N)
82 070 FORMAT(1X,3(/, ' X(',I2,') =',2X,E16.8))
83 WRITE(*,777)
84 777 FORMAT(1X, '-----')
85 WRITE(*,018)
86 018 FORMAT(4X, 'Harga-harga ketepatan absolut :')
87 WRITE(*,023) (I, E(I), I=1,N)
88 023 FORMAT(1X,3(/, ' E(',I2,') =',1X,1E16.8))
89 WRITE(*,771)
90 771 FORMAT(1X, '-----')
91 WRITE(*, '((/))')
92 PAUSE

```

C 0. PERHITUNGAN PADA ITERASI KE-0 (AWAL) (93 - 217)

```
93 STOP =.FALSE.
94 MAXCAL =.FALSE.
95 IPRINT=1
96 IPP=IPRINT*(IPRINT-1)
```

C 0.1. HARGA-HARGA INISIAL (97 - 105)

```
97 ITC =0
98 IPC =0
99 MPLUSN=M+N
100 KST=N+MPLUSN
101 NPLUS=N+1
102 KINV=NPLUS*(MPLUSN+1)
103 KSTORE=KINV-MPLUSN-1
104 NN=N+N
105 K=NN
```

C 0.2. MENGHITUNG FUNGSI KUADRAT TERKECIL FF (106 - 114)

```
106 CALL CALFUN (M,N,F,X)
107 MFUNG=1
108 FF=0.0
109 DO 1 I=1,M
110     K=K+1
111     W(K)=F(I)
112     FF=FF+F(I)*F(I)
113 1 CONTINUE
114 FOLD=FF
115 100 FIRST=.TRUE.
116 L=KST
117 I=1
```

C 0.3. MENGHITUNG KOMPONEN GRADIENT DALAM ARAH KOORDINAT (118 - 121)

```
118 2 XDUMMY=X(I)
119 IVAR=0
120 DUMMY=ABS(X(I)*1.E-06)+E(I)
121 5 X(I)=X(I)+DUMMY

122 CALL CALFUN (M,N,F,X)

123 MFUNG=MFUNG+1
124 X(I)=XDUMMY
125 DO-3 J=1,N
126     L=L+1
127     W(L)=0.
128     W(J)=0.
129 3 CONTINUE
130 FFF=0.
131 KK=NN
132 DO 4 J=1,M
133     KK=KK+1
```

```

C 0.4. MENGHITUNG FUNGSI KUADRAT TERKECIL FFF (122 - 136)
134          F(J)=F(J)-W(KK)
135          FFF=FFF+F(J)*F(J)
136    4 CONTINUE

C 0.5. SYARAT ITERASI (FFF > FF * 0.000000000001)
137          IF (FFF .GT. FF*1.E-12) GO TO 6

138          WRITE (*,007)I
139    007 FORMAT(1X,'PADA KOMPONEN KE-',I2,'LEBIH KECIL ATAU
139          1SAMA DENGAN LANGKAH PERMULAAN')
140          PAUSE
141          DUMMY=2.0*DUMMY

142          IVAR=IVAR+1
143          K=L-N
144          IF(IVAR .LT. 15) GO TO 5
145          ITC=0
146          K=NN
147          DO 8 I=1,M
148              K=K+1
149              F(I)=W(K)
150    8 CONTINUE
151          GO TO 10

C 0.6. NORMALISASI UNTUK HARGA FUNGSI DAN ARAH KOORDINAT (152 - 154)
152    6 FFF=1.0/SQRT(FFF)
153          IVAR=0
154          J=L-N+I

C          * NORMALISASI PADA ARAH KOORDINAT (155)
155          W(J)=DUMMY*FFF
156          DO 9 J=1,M
157              L=L+1

C          * NORMALISASI PADA FUNGSI DALAM ARAH KOORDINAT (156 - 158)
158          W(L)=F(J)*FFF
159          KK=NN+J
160          DO 11 II=1,I
161              KK=KK+MPLUSN

C          * JUMLAHAN DARI HARGA-HARGA YANG DINORMALISASI (159 - 164)
162          W(II)=W(II)+W(KK)*W(L)
163    11 CONTINUE
164    9 CONTINUE
165          ILESS=I-1
166          IGAMAX=N+I-1
167          INCINV=N-ILESS
168          INCINP=INCINV+1
169          IF (ILESS .GT. 0) GO TO 14

```

C 0.7. MENGHITUNG INVERS DENGAN METODE HOUSEHOLDER (170 - 171)

```

170      W(KINV)=1.0
171      GO TO 15
172  14  B=1.
173      DO 16 J=NPLUS,IGAMAX
174          W(J)=0.
175  16  CONTINUE
176      KK=KINV
177      DO 17 II=1,ILESS
178          IIP=II+N
179          W(IIP)=W(IIP)+W(KK)*W(II)
180          JL=II+1
181          IF (JL .GT. ILESS) GO TO 19
182          DO 20 JJ=JL,ILESS
183              KK=KK+1
184              JJP=JJ+N
185              W(IIP)=W(IIP)+W(KK)*W(JJ)
186              W(JJP)=W(JJP)+W(KK)*W(II)
187  20  CONTINUE

```

C * MENGHITUNG TRANSFORMASI HOUSEHOLDER (177 - 215)

```

188  19      B=B-W(II)*W(IIP)
189          KK=KK+INCINP
190  17  CONTINUE
191      B=1./B
192      KK=KINV
193      DO 21 II=NPLUS,IGAMAX
194          BB=-B*W(II)
195          DO 22 JJ=II,IGAMAX
196              W(KK)=W(KK)-BB*W(JJ)
197              KK=KK+1
198  22  CONTINUE
199          W(KK)=BB
200          KK=KK+INCINV
201  21  CONTINUE
202          W(KK)=B
203  15  IF( .NOT. FIRST) GO TO 27
204          I=I+1
205          IF(I .LE. N) GO TO 2
206          FIRST=.FALSE.
207          ISAMA=0
208          FF=0.0
209          KL=NN
210          DO 26 I=1,M
211              KL=KL+1
212              F(I)=W(KL)
213              FF=FF+F(I)*F(I)
214  26  CONTINUE
215          CONTIN=.TRUE.
216  27  IPC=IPC-IPRINT
217          IF(IPC .GE. 0) GO TO 29

```

C MENCETAK HASIL PERHITUNGAN (216 - 237)

```

218 28 WRITE(*,030)ITC,MFUNG,FF
219 030 FORMAT(/,5X,'----- Iterasi ke - ',I2,' -----',
1/, '    Bilangan dari evaluasi fungsi = ',I4,
1/, '    Jumlah kuadrat terkecil (FF) = ',E16.8)
220 WRITE(*,886)
221 886 FORMAT(5X,'-----')
222 WRITE(*,887)
223 887 FORMAT(5X,'Harga-harga koefisien pada iterasi ini :')
224 WRITE(*,031)(I,X(I),I=1,N)
225 031 FORMAT(5X,3(/,'    X(',I2,') = ',1X,E16.8))
226 WRITE(*,885)
227 885 FORMAT(5X,'-----')
228 WRITE(*,032)
229 032 FORMAT(5X,'Harga-harga fungsi pada iterasi ini :')
230 WRITE(*,035)(J,F(J),J=1,M)
231 035 FORMAT (5X,3(/,'    F(',I2,') = ',1X,E16.8))
232 WRITE(*,1000)
233 1000 FORMAT(5X,'----- * -----')
234 WRITE(*,'((/))')
235 PAUSE
236 IPC=IPP
237 IF (STOP) GO TO 33

```

C UJI KONVERGENSI (238 - 260)

```

238 29 RESIDU=0.0
239 IF (RESIDU .NE. 0.0) ISAMA=0
240 ISAMA=ISAMA+1
241 IF (ISAMA .LE. N) GO TO 291
242 IF (IPRINT .LE. 0) GO TO 33
243 WRITE(*,992)
244 992 FORMAT(/,5X,'----- Uji konvergensi -----')
245 WRITE (*,295)
246 295 FORMAT(/,5X,' Harga-harga sebanyak N+1 dari F adalah sama ')
247 WRITE(*,991)
248 991 FORMAT(/,5X,'-----',/)
249 WRITE(*,'(15(/))')
250 PAUSE
251 IF (FF .GE. FOLD) GO TO 10
252 FOLD=FF
253 K=NN
254 DO 293 I=1,M
255     K=K+1
256     W(K)=F(I)
257 293 CONTINUE
258 GO TO 100
259 291 IF (CONTIN) GO TO 34
260 IF (RESIDU .GT. 1.0) GO TO 36
261 10 IF (IPRINT .LE. 0) GO TO 33

```

C MENCETAK HASIL AKHIR (261 - 270)

```

262 WRITE(*,999)
263 999 FORMAT(/,5X,'-----')

```



```

264      WRITE(*,038)
265 038  FORMAT(/,7X,'*')> Harga akhir SSQMIN fungsi dan variabel <<*'')
266      WRITE(*,993)
267 993  FORMAT(/,5X,'=====')
268      WRITE(*,'(15(/))')
269      PAUSE
270      STOP= .TRUE.
271      GO TO 28
272 33   RETURN
273 36   CONTIN=.TRUE.

```

C 1. MENGHITUNG PADA ITERASI AWAL BERIKUTNYA (273 - 333)

```

274 34   ITC=ITC+1
275      K=N
276      KK=KST

```

C 1.1. MENGHITUNG HARGA FUNGSI PADA ITERASI AWAL (P) (275 -286)

```

277      DO 39 I=1,N
278          K=K+1
279          W(K)=0.
280          KK=KK+N
281          W(I)=0.
282          DO 40 J=1,M
283              KK=KK+1
284              W(I)=W(I)+W(KK)*F(J)
285 40      CONTINUE
286 39      CONTINUE
287          DM=0.
288          K=KINV

```

C 1.2. MENGHITUNG HARGA FUNGSI PADA ITERASI AWAL (Q) (287 - 300)

```

289      DO 41 II=1,N
290          IIP=II+N
291          W(IIP)=W(IIP)+W(K)*W(II)
292          JL=II+1
293          IF (JL .GT. N) GO TO 43
294          DO 44 JJ=JL,N
295              JJP=JJ+N
296              K=K+1
297              W(IIP)=W(IIP)+W(K)*W(JJ)
298              W(JJP)=W(JJP)+W(K)*W(II)
299 44      CONTINUE
300          K=K+1

```

C 1.3. Mencari harga indeks maksimum dari P dan Q (300 - 333)

```

301 43      IF (DM .GE. ABS(W(I)*W(IIP))) GO TO 41
302          DM=ABS(W(II)*W(IIP))
303          KL=II
304 41      CONTINUE
305          II=N+MPLUSN*KL
306          RESIDU=0.0

```



```

307 DO 46 I=1,N
308 JL=N+I
309 W(I)=0.
310 DO 47 J=NPLUS,NN
311 JL=JL+MPLUSN
312 W(I)=W(I)+W(J)*W(JL)
313 47 CONTINUE
314 II=II+1
315 W(II)=W(JL)
316 W(JL)=X(I)
317 IF(ABS(E(I)*RESIDU) .GT. ABS(W(I))) GO TO, 46
318 RESIDU=ABS(W(I)/E(I))
319 46 CONTINUE
320 DO 49 I=1,M
321 II=II+1
322 JL=JL+1
323 W(II)=W(JL)
324 W(JL)=F(I)
325 49 CONTINUE
326 FC=FF
327 ACC=0.1/RESIDU
328 IT=3
329 XC=0.
330 XL=0.
331 IS=3
332 XSTEP=-AMIN1(0.5, EPSILN/RESIDU)
333 IF (RESIDU .LE. 1.0) CONTIN= .FALSE.

```

C 1.4. MENGHITUNG GARIS PENCARIAN (PENCARIAN LINIER) (334 - 352)

```

334 51 CALL LINMIN(IT,XC,FC,6,ACC,0.1,XSTEP)
335 IF (IT .NE. 1) GO TO 53
336 MFUNG=MFUNG+1
337 IF (MFUNG .LE. MAXFUN) GO TO 54
338 WRITE(*,441)
339 441 FORMAT(/,5X,'-----')
340 WRITE (*,056)MAXFUN
341 056 FORMAT(/,7X,'Fungsi yang dipanggil dari CALFUN =',2X,I3)
342 WRITE(*,442)
343 442 FORMAT(/,5X,'-----')
344 WRITE(*,'(15(/))')
345 PAUSE
346 MAXCAL=.TRUE.
347 GO TO 53
348 54 XL=XC-XL
349 DO 57 J=1,N
350 X(J)=X(J)+XL*W(J)
351 57 CONTINUE
352 XL=XC
353 CALL CALFUN (M,N,F,X)
354 FC=0.
355 DO 58 J=1,M
356 FC=FC+F(J)*F(J)
357 58 CONTINUE
358 IF (IS .NE. 3) GO TO 59
359 K=N

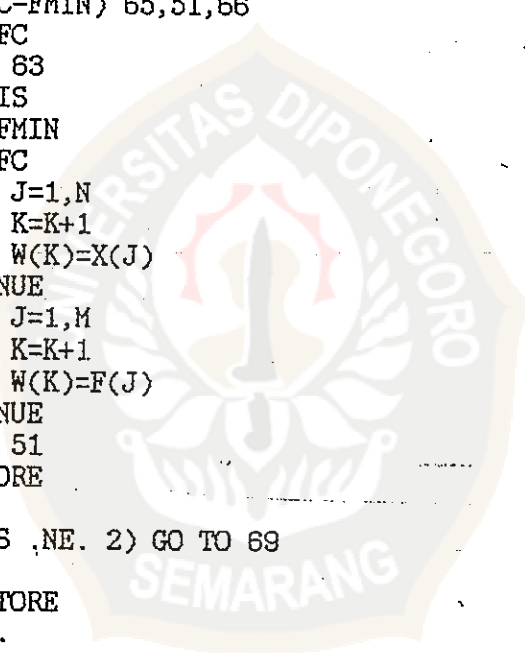
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C 2. MENCARI HARGA TERBAIK BERIKUTNYA (353 - 433)

```

360     IF (FC-FF) 61,51,62
361 61   IS=2
362     FMIN=FC
363     FSEC=FF
364     GO TO 63
365 62   IS=1
366     FMIN=FF
367     FSEC=FC
368     GO TO 63
369 59   IF (FC .GE. FSEC) GO TO 51
370     K=KSTORE
371     IF (IS .EQ. 2) GO TO 74
372     K=N
373 74   IF (FC-FMIN) 65,51,66
374 66   FSEC=FC
375     GO TO 63
376 65   IS=3-IS
377     FSEC=FMIN
378     FMIN=FC
379 63   DO 67 J=1,N
380         K=K+1
381         W(K)=X(J)
382 67   CONTINUE
383     DO 68 J=1,M
384         K=K+1
385         W(K)=F(J)
386 68   CONTINUE
387     GO TO 51
388 53   K=KSTORE
389     KK=N
390     IF (IS .NE. 2) GO TO 69
391     K=N
392     KK=KSTORE
393 69   FFF=0.
394     DM=0.
395     JJ=KSTORE
396     DO 71 J=1,N
397         K=K+1
398         KK=KK+1
399         JJ=JJ+1
400         X(J)=W(K)
401         W(JJ)=W(K)-W(KK)
402 71   CONTINUE
403     DO 72 J=1,M
404         K=K+1
405         KK=KK+1
406         JJ=JJ+1
407         F(J)=W(K)
408         W(JJ)=W(K)-W(KK)
409         FFF=FFF+W(JJ)*W(JJ)
410         DM=DM+F(J)*W(JJ)
411 72   CONTINUE
412     IF (MAXCAL) GO TO 10

```



```

413      J=KINV
414      KK=NPLUS-KL
415      DO 76 I=1, KL
416          K=J+KL-I
417          J=K+KK
418          W(I)=W(K)
419          W(K)=W(J-1)
420 76    CONTINUE
421      IF (KL .GE. N) GO TO 78
422      KL=KL+1
423      JJ=K
424      DO 79 I=KL, N
425          K=K+1
426          J=J+NPLUS-I
427          W(I)=W(K)
428          W(K)=W(J-1)
429 79    CONTINUE
430      W(JJ)=W(K)
431      B=1./W(KL-1)
432      W(KL-1)=W(N)
433      GO TO 88
434 78    B=1./W(N)
435 88    K=KINV

```

C 3. MENENTUKAN FUNGSI DAN ARAH PADA KOORDINAT BARU (434 - 446)

```

436      DO 80 I=1, ILESS
437          BB=B*W(I)
438          DO 81 J=I, ILESS
439              W(K)=W(K)-BB*W(J)
440              K=K+1
441 81      CONTINUE
442          K=K+1
443 80    CONTINUE
444      IF (FMIN .LT. FF) GO TO 82
445      RESIDU=0.0
446      GO TO 84

```

C 3.1. Mencari harga normalisasi berikutnya (447 - 466)

```

447 82    FF=FMIN
448      RESIDU=ABS(XC)*RESIDU
449 84    XL=-DM/FMIN
450      FFF=1.0/SQRT(FFF+DM*XL)
451      K=KSTORE
452      DO 85 I=1, N
453          K=K+1
454          W(K)=FFF*W(K)
455          W(I)=0.
456 85    CONTINUE
457      DO 86 I=1, M
458          K=K+1
459          W(K)=(FFF*W(K))+(XL*F(I))
460          KK=NN+I

```

```

461          DO 87 J=1,N
462             KK=KK+MPLUSN
463             W(J)=W(J)+W(KK)*W(K)
464 87        CONTINUE
465 86        CONTINUE
466          GO TO 14
467          RETURN
468          END

469          SUBROUTINE LINMIN (ITEST,X,F,MAXFUN,ABSACC,RELACC,XSTEP)
470          GO TO (1,2,2),ITEST
471 2         IS=6-ITEST
472          ITEST=1
473          IINC=1
474          XINC=XSTEP+XSTEP
475          MFUNG=IS-3
476          IF (MFUNG) 4,4,15
477 3         MFUNG=MFUNG+1
478          IF (MAXFUN .GE. MFUNG) GO TO 15
479          ITEST=4
480 43        X=DB
481          F=FB
482          IF (FB .LE. FC) GO TO 15
483          X=DC
484          F=FC
485 15        RETURN
486 1         GO TO (5,6,7,8),IS
487 8         IS=3
488 4         DC=X
489          FC=F
490          X=X+XSTEP
491          GO TO 3
492 7         IF (FC-F) 9,10,11
493 10        X=X+XINC
494          XINC=XINC+XINC
495          GO TO 3
496 9         DB=X
497          FB=F
498          XINC=-XINC
499          GO TO 13
500 11        DB=DC
501          FB=FC
502          DC=X
503          FC=F
504 13        X=DC+DC-DB
505          IS=2
506          GO TO 3
507 6         DA=DB
508          DB=DC
509          FA=FB
510          FB=FC
511 32        DC=X
512          FC=F
513          GO TO 14
514 5         IF (FB .LT. FC) GO TO 16

```

```

515     IF (F .GE. FB) GO TO 32
516     FA=FB
517     DA=DB
518 19   FB=F
519     DB=X
520     GO TO 14
521 16   IF (FA .LE. FC) GO TO 21
522     XINC=FA
523     FA=FC
524     FC=XINC
525     XINC=DA
526     DA=DC
527     DC=XINC
528 21   XINC=DC
529     IF (((D-DB)*(D-DC)) .LT. 0.0) GO TO 32
530     IF (F .GE. FA) GO TO 24
531     FC=FB
532     DC=DB
533     GO TO 19
534 24   FA=F
535     DA=X
536 14   IF (FB .GT. FC) GO TO 29
537     IINC=2
538     XINC=DC
539     IF (FB .EQ. FC) GO TO 45
540 29   D=(FA-FB)/(DA-DB)-(FA-FC)/(DA-DC)
541     IF ((D*(DB-DC)) .LT. 0.0) GO TO 33
542     D=0.5*(DB+DC-(FB-FC)/D)
543     IF ((ABS(D-X) .GT. ABS(ABSACC)) .AND. (ABS(D-X) .GT. ABS(D*RELACC)
544     1)) GO TO 36
544     ITEST=2
545     GO TO 43
546 36   IS=1
547     X=D
548     IF ((DA-DC)*(DC-D))3,26,38
549 38   IS=2
550     GO TO (39,40),IINC
551 33   IS=2
552     GO TO (41,42),IINC
553 39   IF(ABS(XINC) .GE. ABS(DC-D)) GO TO 3
554 41   X=DC
555     GO TO 10
556 40   IF (ABS(XINC-X) .GT. ABS(X-DC)) GO TO 3
557 42   X=0.5*(XINC+DC)
558     IF((XINC-X)*(X-DC) .GT. 0.0) GO TO 3
559     GO TO 26
560 45   X=0.5*(DB+DC)
561     IF ((DB-X)*(X-DC) .GT. 0.0) GO TO 3
562 26   ITEST=3
563     GO TO 43
564     RETURN
565     END

```