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1: ClrHome
2: "ENTER AS LIST:"→Str1
3: "RECTANGULAR"→Str2
4: "CYLINDRICAL"→Str3
5: "SPHERICAL"→Str4
6: "RADIAN"→Str5
7: "DEGREES"→Str6
8: Disp "PROGRAM STARTS", " IN DEGREE MODE
9: Pause "OK"
10: Degree
11: 180→D
12: Str6→Str0
13: 3→dim(LR)
14: 3→dim(LC)
15: 3→dim(LS)
16: 0→X
17: 0→Y
18: 0→Z
19: 0→R
20: 0→T
21: 0→H
22: 0→P
23: {0,0,0}→LR
24: LR→LC
25: LR→LS
26: Lbl 10
27: Menu("3 DIM COORDINATES",Str2,20,Str3,30,Str4,40,"DISPLAY",50,"RADIAN
MODE",60,"DEGREE MODE",70,"QUIT",80)
28: Lbl 20
29: Disp Str2
30: Disp Str1
31: Input LR
32: LR(1)→X
33: LR(2)→Y
34: LR(3)→Z
35:  $\sqrt{X^2+Y^2}$ →R
36: If X=0
37: Then
38: If Y=0
39: Then
40: 0→T
41: Else
42: If Y>0
43: Then
44: 90→T
45: If Str5=Str0
46:  $\pi/2$ →T
47: Else
48: 270→T
49: If Str5=Str0

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50: 3*π/2→T
51: End
52: End
53: Else
54: tan-1(Y/X)→T
55: If T<0
56: Then
57: If Y>0
58: Then
59: D+T→T
60: Else
61: 2*D+T→T
62: End
63: Else
64: If Y<0 or X<0
65: Then
66: T+D→T
67: End
68: End
69: End
70: R→LC(1)
71: T→LC(2)
72: Z→LC(3)
73: Lbl 25
74: √(X2+Y2+Z2)→H
75: If H=0
76: Then
77: 0→P
78: Else
79: cos-1(Z/H)→P
80: End
81: H→LS(1)
82: T→LS(2)
83: P→LS(3)
84: Goto 50
85: Lbl 30
86: Disp Str3
87: Disp Str1
88: Input LC
89: LC(1)→R
90: LC(2)→T
91: LC(3)→Z
92: If R<0
93: Then
94: -R→R
95: T+D→T
96: End
97: iPart(T/(2*D))→E
98: T-E*2*D→T
99: If T<0
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100: T+2*D→T
101: R→LC(1)
102: T→LC(2)
103: R*cos(T)→X
104: R*sin(T)→Y
105: X→LR(1)
106: Y→LR(2)
107: Z→LR(3)
108: Goto 25
109: Lbl 40
110: Disp Str4
111: Disp Str1
112: Input LS
113: LS(1)→H
114: LS(2)→T
115: LS(3)→P
116: iPart(P/(2*D))→E
117: P-E*2*D→P
118: If P<0
119: Then
120: If -P>D
121: Then
122: P+2*D→P
123: Else
124: D-P→P
125: T+D→T
126: End
127: Disp "P SET",P
128: End
129: If P>D
130: Then
131: 2*D-P→P
132: Disp "P>D"
133: T+D→T
134: End
135: If H<0
136: Then
137: Disp "H<0"
138: D-P→P
139: -H→H
140: T+D→T
141: End
142: iPart(T/(2*D))→E
143: T-2*D*E→T
144: If T<0
145: T+2*D→T
146: H→LS(1)
147: T→LS(2)
148: P→LS(3)
149: H*sin(P)*cos(T)→X
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150: H*sin(P)*sin(T)→Y
151: H*cos(P)→Z
152: X→LR(1)
153: Y→LR(2)
154: Z→LR(3)
155: abs(H*sin(P))→R
156: H*cos(P)→Z
157: R→LC(1)
158: T→LC(2)
159: Z→LC(3)
160: Lbl 50
161: Disp Str0
162: Disp Str2
163: Disp LR(1),LR(2)
164: Pause LR(3)
165: Disp Str3
166: Disp LC(1),LC(2)
167: Pause LC(3)
168: Disp Str4
169: Disp LS(1),LS(2)
170: Pause LS(3)
171: Goto 10
172: Lbl 60
173: Radian
174: π→D
175: If Str6=Str0
176: Then
177: Pause "CONVERT TO R"
178: LC(2)*π/180→LC(2)
179: LS(2)*π/180→LS(2)
180: LS(3)*π/180→LS(3)
181: End
182: Str5→Str0
183: Goto 50
184: Lbl 70
185: If Str5=Str0
186: Then
187: Pause "CONVERT TO D"
188: LC(2)/π*180→LC(2)
189: LS(2)/π*180→LS(2)
190: LS(3)/π*180→LS(3)
191: End
192: Str6→Str0
193: Degree
194: 180→D
195: Goto 50
196: Lbl 80
197: Stop
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