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[0] NOP; /*-----
[1] NOP;  * Programmer--Cecilia Y. Sui
[2] NOP;  * Course-----CS4223
[3] NOP;  * Project-----Homework #2
[4] NOP;  * Due-----September 10, 2019
[5] NOP;  *
[6] NOP;  * This program computes and displays an estimated square
[7] NOP;  * root.
[8] NOP;  *-----
[9] ISP 4; make room for 4 variables
[10] NOP; /* Enter the raw data. */
[11] LLI 83; ASCII Code for 'S'
[12] PTC
[13] LLI 101; 'e'
[14] PTC
[15] LLI 108; 'l'
[16] PTC
[17] LLI 101; 'e'
[18] PTC
[19] LLI 99; 'c'
[20] PTC
[21] LLI 116; 't'
[22] PTC
[23] LLI 32; ' '
[24] PTC
[25] LLI 110; 'n'
[26] PTC
[27] LLI 117; 'u'
[28] PTC
[29] LLI 109; 'm'
[30] PTC
[31] LLI 98; 'b'
[32] PTC
[33] LLI 101; 'e'
[34] PTC
[35] LLI 114; 'r'
[36] PTC
[37] LLI 58; ':'
[38] PTC
[39] LLI 32; ' '
[40] PTC
[41] LAA 0; absolute address for float x
[42] INF
[43] STO
[44] NOP; /* An initial estimate of the square root */
[45] LAA 2; absolute address for float newEstimate
[46] LLF 1.0
[47] STO; newEstimate = 1.0
[48] NOP; /* Estimate the square root */
[49] LAA 2; float newEstimate

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[50] LAA 1; float estimate
[51] LAA 2; float newEstimate
[52] LOD
[53] STO
[54] LAA 0; float x
[55] LOD
[56] LAA 1; float estimate
[57] LOD
[58] DVF; calculate x/estimate
[59] LAA 1
[60] LOD
[61] ADF; calculate estimate + x/estimate
[62] LLF 0.5; load in float 0.5
[63] MLF; calculate 0.5*(estimate + x/estimate)
[64] STO; store value to newEstimate
[65] LAA 3; float difference
[66] LAA 2; float newEstimate
[67] LOD
[68] LAA 1; float estimate
[69] LOD
[70] SBF; calculate newEstimate - estimate
[71] STO; store value to difference
[72] LLF -0.005
[73] LAA 3
[74] LOD
[75] LEF; check if difference >= -0.005
[76] JPF 49; jump back to loop if difference < -0.005 (LEF → False)
[77] LLF 0.005
[78] LAA 3
[79] LOD
[80] GEF; check if difference <= 0.005
[81] JPF 49; jump back to loop if difference > 0.005 (GEF → False)
[82] NOP; /* Display the estimated square root */
[83] LLI 115; 's'
[84] PTC
[85] LLI 113; 'q'
[86] PTC
[87] LLI 114; 'r'
[88] PTC
[89] LLI 116; 't'
[90] PTC
[91] LLI 58; ':'
[92] PTC
[93] LLI 32; ' '
[94] PTC
[95] LAA 2; float newEstimate
[96] LOD
[97] PTF
[98] PTL

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