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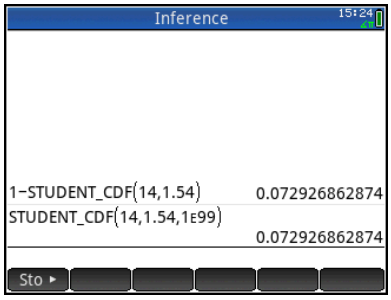
19. Computing P-values from t distributions on the HP Prime

You can use the STUDENT_CDF command on the HP Prime to calculate areas under a t distribution curve. The syntax of the command is STUDENT_CDF(*degrees of freedom, value*) and it calculates the area to the left of the desired critical *value* of a t distribution with the given *degrees of freedom*. Let's use the cumulative *t* command to find the P-values from the last two examples.

1. *Better batteries*: Find P(t ≥1.54).Since this problem involves the area to the right, we will use 1-STUDENT_CDF(14, 1.54)
   - Press Settings to go to Home view
   - Enter 1 Program Y (−) Base ;
   - Press Mem 8 , tap *Probability*, then tap *Cumulative* and select *T*
   - Complete the command 1-STUDENT_CDF(14, 1.54) and press Enter ≈.
   - Also, the Cumulative Student T command with lower and upper bounds listed as 1.54 and 1E99 produces the same result.



2. *Two-sided test*: Find P(t ≤ -3.17 or t ≥ 3.17) with 36 degrees of freedom. Since this is a two-sided test, we will double the lower-tail probability.
   - Enter the command 2*STUDENT_CDF(36, -3.17)