Prime Factorization for the HP-16C model

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Contents

1 Prime Factorization HP-16C code

key strokes	step	display code(s)	remark
ON			Switch the calculator ON
[g] P/R			Enter program mode
[f] CLEAR PRGM			Clear all program memory
[g] LBL A	01	43,22, A	Start
[g] SF 5	02	43, 4, 5	Set "user" flag, '5' works, '0' not
STO 0	03	44 0	Save input
2	04	2	
STO 1	05	44 1	Save first prime
[g] LBL 1	06	43,22, 1	
RCL 0	07	45 0	Read working number
RCL 1	08	45 1	Read prime
÷	09	10	
ENTER	10	36	
[g] F? 4	11	43, 6, 4	
GTO 2	12	22 2	
RCL 1	13	45 1	Read prime
[g] PSE	14	43 34	Pause and show register X (prime factor)
R↓	15	33	(Get register Y)
R↓	16	33	Get register Z

key strokes	step	display code(s)	remark
STO 0	17	44 0	
GTO 1	18	22 1	Next...
g LBL 2	19	43,22, 2	
GSB 3	20	21 3	
g F? 5	21	43, 6, 5	
GSB 3	22	21 3	
g CF 5	23	43, 5, 5	
RCL 0	24	45 0	Read working number
RCL 1	25	45 1	Read prime
ENTER	26	36	
×	27	20	
g X⩽Y	28	43 1	
GTO 1	29	22 1	Next...
RCL 0	30	45 0	Read working number
g RTN	31	43 21	Return
g LBL 3	32	43,22, 3	Increment...
1	33	1	
RCL 1	34	45 1	
+	35	40	
STO 1	36	44 1	
g RTN	37	43 21	Return
g P/R			Leave program mode

2 How to use the Prime Factorization program

Select decimal mode, enter number N and run with R/S. The program will show all the prime factors (in decimal) of N from a low prime (2) and then up.

Example:

```
  10  d
 R/S
```

Output:

running
`2  d` *(pause one second)*
running
`5  d`