Test Case: 1762741

```
PEX1 - Factoring Program by the One and Only Isabella Gentile
CyS 431

Enter an integer you wish to factor: 1762741

=====================================
Brute Force Factoring
Found a factor =  691
It took 0.08956 seconds.
=====================================
Pollard's Rho
Found a factor =  691
a = 250722521285 , b = 62861782679507278051226
It took 0.00135 seconds.
=====================================
Dixon's Algorithm
Enter number of factors in factor base: 10
1    18634 === 1728720    4 2 1 4 0 0 0 0 0 0
2    18869 === 1728220    2 0 1 0 0 1 2 0 1 0
3    26320 === 1747928    3 0 0 5 0 1 0 0 0 0
4    52857 === 1680705    0 2 1 0 0 3 1 0 0 0
5    61217 === 1696464    4 4 0 1 1 0 1 0 0 0
6    63631 === 1650825    0 2 2 0 1 0 0 0 1 1
7    64934 === 1710625    0 0 4 1 0 0 1 0 1 0
8    66344 === 1724800    7 0 2 2 1 0 0 0 0 0
9    66556 === 1695744    13 2 0 0 0 0 0 0 1 0
10   67450 === 1630720  9 0 1 2 0 1 0 0 0 0
Last 10 equations failed. Increasing factor base...
11   71040 === 1716858  1 2 0 0 1 1 0 0 1 1
12   74705 === 1761760  5 0 1 1 2 1 0 0 0 0
13   85447 === 1679328  5 2 0 3 0 0 1 0 0 0
14   89152 === 1642676  2 0 0 2 0 0 2 0 0 1
15   90594 === 1713481  0 0 0 2 2 0 2 0 0 0
Equation 15 is a Perfect Equation
Found a factor =  2551
It took 0.022 seconds.
=====================================
```

Test Case: 6937031

```
PEX1 - Factoring Program by the One and Only Isabella Gentile
CyS 431


Enter an integer you wish to factor: 6937031


====================================
Brute Force Factoring
Found a factor =   983
It took 0.38717 seconds.
====================================
Pollard's Rho
Found a factor =   7057
a = 41696723290001 , b = 173861673312911817546580002
It took 0.02263 seconds.
====================================
Dixon's Algorithm
Enter number of factors in factor base: 15
1     44542 === 6935929    0 0 0 1 1 3 0 0 0 0 0 0 1 0 0
2     46298 === 6899256    3 6 0 1 0 2 0 0 0 0 0 0 0 0 0
3     59886 === 6825000    3 1 5 1 0 1 0 0 0 0 0 0 0 0 0
4     66318 === 6936501    0 1 0 0 1 1 0 1 1 0 0 1 0 0 0
5     66994 === 6874010    1 0 1 0 2 1 0 1 1 0 0 0 0 0 0
6     71405 === 6893271    0 2 0 4 1 0 0 0 0 1 0 0 0 0 0
7     73747 === 6924736    6 0 0 1 0 1 0 0 0 1 0 0 1 0 0
8     85953 === 6917225    0 0 2 1 0 0 0 0 0 2 0 0 0 0 1
9     97309 === 6931197    0 3 0 2 0 2 0 0 0 0 1 0 0 0 0
10    105089 === 6881600 6 0 2 0 1 0 1 0 1 0 0 0 0 0 0
11    107277 === 6757331 0 0 0 1 0 0 0 1 1 0 0 0 0 0 2
12    115558 === 6803720 3 0 1 1 1 0 0 0 0 0 0 0 0 0 2
13    116753 === 6934125 0 1 3 0 1 0 0 0 0 0 0 0 2 0 0
```

```
14    119280 === 6804850 1 0 2 0 0 1 0 2 0 1 0 0 0 0 0
15    119657 === 6702696 3 3 0 1 1 1 0 0 0 0 1 0 0 0 0
Last 15 equations failed. Increasing factor base...
16    120005 === 6860700 2 4 2 1 2 0 0 0 0 0 0 0 0 0 0
17    133053 === 6734728 3 0 0 1 1 1 0 0 0 2 0 0 0 0 0
18    154050 === 6756480 7 3 1 0 0 0 1 0 1 0 0 0 0 0 0
19    155038 === 6906060 2 5 1 2 0 0 0 0 0 1 0 0 0 0 0
20    158270 === 6710990 1 0 1 0 1 2 0 2 0 0 0 0 0 0 0
21    162829 === 6887790 1 2 1 1 0 1 0 0 0 2 0 0 0 0 0
22    169549 === 6743968 5 0 0 2 1 0 1 0 1 0 0 0 0 0 0
23    176112 === 6907974 1 1 0 0 0 0 0 0 2 0 2 0 0 0
24    176858 === 6616416 5 1 0 0 0 0 0 0 0 0 0 3 0 0
25    179776 === 6719778 1 2 0 0 0 2 0 0 0 0 0 0 0 0 2
26    184405 === 6815094 1 1 0 0 1 3 0 0 0 0 0 0 0 0 1
27    186053 === 6871150 1 0 2 0 1 1 0 0 0 0 2 0 0 0 0
28    191654 === 6613602 1 1 0 0 0 0 0 0 0 0 3 1 0 0 0
29    193993 === 6827905 0 0 1 2 0 0 0 0 0 1 2 0 0 0 0
30    196268 === 6731712 6 2 0 0 0 1 0 0 0 1 1 0 0 0 0
Last 30 equations failed. Increasing factor base...
31    196868 === 6754258 1 0 0 2 0 0 0 0 0 0 0 0 3 0 0
32    197396 === 6814720 10 0 1 0 3 0 0 0 0 0 0 0 0 0 0
33    197536 === 6608952 3 4 0 1 0 0 0 0 0 0 1 0 0 0 1
34    198936 === 6707272 3 0 0 0 2 2 0 0 0 0 0 0 1 0 0
35    208005 === 6754709 0 0 0 0 0 1 0 1 1 0 0 1 0 0
36    210491 === 6581115 0 3 1 0 0 0 0 0 1 0 0 2 0 0
37    211002 === 6916077 0 3 0 1 0 0 0 0 1 0 0 1 0 1 0
38    212916 === 6662502 1 2 0 1 2 0 0 1 1 0 0 0 0 0 0
39    213713 === 6771296 5 0 0 1 0 0 0 1 0 0 0 1 0 1 0
40    213972 === 6549215 0 0 1 0 0 0 0 0 1 2 0 0 0 1
41    214086 === 6788610 1 4 1 0 0 0 2 0 0 1 0 0 0 0 0
```
```
41    214086 === 6788610 1 4 1 0 0 0 2 0 0 1 0 0 0 0 0
42    214555 === 6647340 2 1 1 3 0 0 1 1 0 0 0 0 0 0 0
43    216567 === 6935929 0 0 0 1 1 3 0 0 0 0 0 0 1 0 0
44    216983 === 6929923 0 0 0 2 1 1 0 0 1 0 0 0 0 1 0
45    217701 === 6866640 4 3 1 0 1 0 2 0 0 0 0 0 0 0 0
Found a factor =  983
It took 0.1733 seconds.
====================================
```

Test Case: 3572694269

```
PEX1 - Factoring Program by the One and Only Isabella Gentile
CyS 431


Enter an integer you wish to factor: 3572694269


===================================
Brute Force Factoring
Found a factor =  44519
It took 0.25235 seconds.
===================================
Pollard's Rho
Found a factor =  80251
a = 18842142948155591026 , b = 3550263508787414975159840009691732677
It took 0.06145 seconds.
===================================
Dixon's Algorithm
Enter number of factors in factor base: 30
1     1904280 === 3570329634  1 1 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 1 1 0 0 1 0 0 1 0 0 0 0 0
2     2049753 === 3571594934  1 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 1 1 0 0 0 0 0 0 0 2 0
3     2209948 === 3569791250  1 0 4 0 0 0 0 1 0 1 0 0 0 0 0 0 0 0 0 1 1 0 0 0 0 0 0 0 0 0
4     2506864 === 3570589594  1 0 0 0 1 1 1 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 1 0 0 0 0 1
5     3232666 === 3571425000  3 3 5 0 1 1 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
6     3449213 === 3571097868  2 5 0 0 0 1 0 0 0 0 0 0 1 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 1
7     4162210 === 3570267988  2 0 0 2 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 2 0 0 0
8     4205334 === 3570114275  0 0 2 2 0 1 0 0 0 0 0 1 0 0 0 0 0 0 0 1 0 1 0 0 0 0 0 0 0 0
9     5243610 === 3563432145  0 2 1 4 0 1 0 0 0 0 0 0 1 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0
10    5266047 === 3570784500  2 1 3 0 0 0 0 0 1 1 0 0 0 1 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0
11    5314334 === 3570361380  2 2 1 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 1 1 0 0 1 0 0 0 0 0 0
12    5453684 === 3562076700  2 2 2 1 0 1 0 0 1 0 1 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0
13    5768232 === 3571372896  5 1 0 1 0 3 0 0 0 0 0 0 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0
```

```
13   5768232 === 3571372896 5 1 0 1 0 3 0 0 0 0 0 0 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0
14   5977500 === 3563560000 6 0 4 1 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0
15   6117805 === 3565550250 1 2 3 0 0 0 1 0 0 0 2 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0
16   6342597 === 3571929738 1 4 0 0 0 1 1 1 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 1 0 0 0 0 0 0
17   6526655 === 3564414007 0 0 0 2 3 0 0 0 0 0 1 0 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
18   6836779 === 3560667783 0 1 0 0 0 0 0 0 0 0 0 0 0 1 1 0 1 0 0 1 0 0 0 0 0 0 1 0 0
19   7492989 === 3566411055 0 2 1 0 0 0 0 2 0 0 0 0 0 0 0 0 1 2 0 0 0 0 0 0 0 0 0 0 0 0
20   7888095 === 3572034390 1 6 1 0 0 0 1 1 0 0 0 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
21   8731012 === 3565620760 3 0 1 0 0 1 0 0 0 1 0 0 1 0 0 0 0 0 0 0 1 1 0 0 0 0 0 0 0 0
22   8864212 === 3562017096 3 1 0 0 1 0 0 1 0 0 0 0 0 0 0 0 0 0 0 1 0 1 0 1 0 0 0 0 0
23   8900212 === 3569006945 0 0 1 1 0 0 2 0 3 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
24   9181768 === 3569634500 2 0 3 0 0 0 1 1 1 0 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
25   9295654 === 3572391951 0 3 0 0 0 0 1 1 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 1 0 1 0 0 0
26   9450975 === 3571725625 0 0 4 0 0 1 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 2 0
27   9662937 === 3559439923 0 0 0 0 0 1 1 0 0 0 0 1 0 0 0 0 0 1 0 1 0 0 1 0 0 0 0 0 0
28   9769022 === 3554217225 0 4 2 0 0 1 0 0 0 0 0 1 1 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0
29   9907922 === 3570623040 6 1 1 0 0 0 0 0 2 0 0 0 0 0 0 0 0 0 0 0 1 0 1 0 0 0 0 0 0
30   9997663 === 3570592025 0 0 2 2 2 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0
Last 30 equations failed. Increasing number of equations...
31   10067460 === 3559828608    7 3 0 1 0 0 0 0 0 0 1 1 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0
32   10101648 === 3571298995    0 0 1 0 1 0 0 2 0 0 0 0 0 1 1 0 0 0 0 0 0 0 1 0 0 0 0 0 0
33   10374535 === 3561612600    3 1 2 1 0 1 0 0 0 0 1 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
34   10380560 === 3566760560    4 0 1 0 3 0 0 1 0 0 0 0 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
35   10419036 === 3568500000    5 2 6 0 0 1 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0
36   10632365 === 3566127796    2 0 0 1 1 0 0 0 0 1 0 0 0 0 0 0 1 0 1 0 0 0 0 0 0 1 0 0 0 0
37   10712039 === 3557700048    4 1 0 1 0 0 0 0 0 1 0 0 0 0 0 0 1 0 0 0 0 0 0 2 0 0 0 0 0 0
38   10756472 === 3558679488    6 3 0 2 0 1 0 0 0 0 0 0 0 0 0 1 0 1 0 0 0 0 0 0 0 0 0 0 0 0
39   10805683 === 3563691300    2 2 2 0 0 1 1 1 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
40   10808162 === 3553999020    2 2 1 0 1 3 0 1 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
41   10842486 === 3570433020    2 5 1 2 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0

42   10982610 === 3563890660    2 0 1 0 1 0 0 0 0 0 0 0 0 0 0 2 0 0 0 0 1 1 0 0 0 0 0 0 0
43   11025466 === 3550708700    2 0 2 1 3 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0
44   11031622 === 3571760206    1 0 0 1 0 0 0 0 1 0 0 0 0 0 1 1 0 1 0 0 1 0 0 0 0 0 0 0 0
45   11440058 === 3563275625    0 0 4 1 0 1 0 0 0 0 1 0 0 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0
46   11469376 === 3555539065    0 0 1 0 0 1 0 1 1 0 0 0 1 1 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0
47   11529804 === 3571917464    3 0 0 0 0 0 2 1 0 0 1 0 0 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0
48   11696851 === 3568979115    0 2 1 0 0 1 0 0 1 0 0 1 0 0 0 0 0 0 1 0 0 0 0 0 0 0 1 0 0
49   11734969 === 3569526625    0 0 3 1 0 0 0 0 0 1 0 0 1 0 1 0 0 0 0 0 1 0 0 0 0 0 0 0 0
50   11756261 === 3567598125    0 1 4 2 0 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0
51   11762489 === 3561908096    7 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 1 0 0 0 0 0 0 0 2 0 0 0
52   11821267 === 3562541892    2 3 0 1 0 1 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 0 0 0
53   12240428 === 3570758400    8 1 2 0 2 0 0 0 0 1 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0
54   12252680 === 3553999020    2 2 1 0 1 3 0 1 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
55   12381611 === 3552566800    4 0 2 0 0 0 0 1 0 0 0 0 0 0 0 1 0 0 0 1 0 0 1 0 0 0 0 0
56   12476469 === 3562101900    2 3 2 1 0 0 0 0 0 1 0 0 0 0 0 0 0 0 1 0 0 0 0 0 1 0 0 0 0
57   12687587 === 3550898505    0 1 1 1 1 0 0 1 0 0 0 0 0 1 0 1 0 0 0 1 0 0 0 0 0 0 0 0 0
58   12753029 === 3560161423    0 0 0 1 0 1 0 2 0 1 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0
59   12927901 === 3559056250    1 0 5 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
60   13114068 === 3568176040    3 0 1 0 1 1 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 1 0 0 0 1 0 0 1 0
Found a factor =  80251
It took 0.7681 seconds.
==================================
```

Test Case: 498587077741

```
Enter an integer you wish to factor: 498587077741


=====================================
Brute Force Factoring
Found a factor =  534839
It took 0.24448 seconds.
=====================================
Pollard's Rho
Connection Timed Out, The Algorithm Has Exceeded Two Minutes
=====================================
Dixon's Algorithm
Enter number of factors in factor base: 30
1    52962731 === 498562685236   2 0 0 1 1 0 0 0 0 0 0 0 0 1 0 0 1 0 1 0 1 0 0 0 0 1 0 0 0 1 0 0
2    63870489 === 498482100000   5 4 5 0 0 0 0 1 0 0 0 0 1 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0
3    82348544 === 498441642336   5 3 0 0 2 0 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 1 0
4    101076940 === 498576850510  1 0 1 0 0 0 1 0 1 2 1 0 0 0 0 0 0 0 1 0 1 0 0 0 0 0 0 0 0 0
5    125208120 === 498415601878  1 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 1 0 0 0 0 2 1 0 1 0 0 0
6    137248382 === 498564562944  15 1 0 1 0 0 2 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0
7    142425472 === 498403607940  2 2 1 1 0 0 0 0 0 1 0 0 2 0 0 0 0 1 0 0 0 0 0 0 1 0 0 0
8    168207667 === 498337014362  1 0 0 0 2 0 0 0 0 1 0 0 0 0 0 0 0 0 1 0 0 0 1 0 0 0 0 0 0 2
9    182752165 === 498409706340  2 2 1 2 0 3 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0
10    183437028 === 498538888176 4 1 0 2 0 0 0 0 1 0 0 0 2 0 0 1 0 1 0 0 0 0 0 0 0 0 0 0
11    191571133 === 498554699643 0 2 0 2 1 1 0 0 0 1 0 0 1 0 0 0 0 1 0 0 0 0 0 0 0 0 0 1 0
12    222933083 === 498173739750 1 3 3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 1 0 1 0 0 0
13    243382695 === 498454443520 9 0 1 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 2 1 1 0 0 0 0 0 0 0 0 0 0
14    269400868 === 498294862500 2 1 5 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 1 0 0 1 0
```

```
13    243382695 === 498454443520 9 0 1 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 2 1 1 0 0 0 0 0 0 0 0 0 0
14    269400868 === 498294862500 2 1 5 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 1 0 0 1 0
15    296629654 === 498500739000 3 2 3 0 1 0 0 1 0 0 1 0 0 0 0 0 0 0 0 0 1 0 0 0 1 0 0 0
16    318592781 === 498580034404 2 0 0 0 0 0 0 0 0 0 0 2 0 0 0 0 0 0 0 0 2 0 0 0 0 0 0 2 0
Equation 16 is a Perfect Equation
Found a factor =  932219
It took 3.541 seconds.
=====================================
```

Test Case: 388616539515299129

```
PEX1 - Factoring Program by the One and Only Isabella Gentile
CyS 431

Enter an integer you wish to factor: 388616539515299129


====================================
Brute Force Factoring
Found a factor =  159327967
It took 59.27514 seconds.
====================================
Pollard's Rho
Connection Timed Out, The Algorithm Has Exceeded Two Minutes
====================================
Dixon's Algorithm
Enter number of factors in factor base: 300
1    39456277793 === 388616519611939204   7 1 2 0 0 0 0 0 1 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
2    52082083731 === 388616485622259070   7 1 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
3    58985454802 === 388616457827056396   8 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
4    59015094909 === 388616521682223312   6 0 0 1 2 0 0 0 1 0 1 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0
5    63088910259 === 388616491977066992   9 2 0 0 0 0 1 0 0 0 1 0 0 0 1 1 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
6    71616765415 === 388616523737516812   8 0 2 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
7    72594964648 === 388616416913574664   8 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
8    84130095888 === 388616471446771196   9 1 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 0
9    86610998506 === 388616482030444078   6 0 0 0 1 1 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 1 0 1 0 0 0 0
10     101323599131 === 388616483926864368    9 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
11     107711457935 === 388616333049566188    10 7 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
12     110677829496 === 388616423419067936    9 2 0 0 0 0 0 1 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
13     115278494027 === 388616407420960574    6 0 0 0 1 1 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
```

```
123    396682071812 === 388615762893443438    7 0 0 1 0 0 0 0 0 0 0 0 0 0 0 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
124    401307061205 === 388615918988704006    8 0 3 0 2 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
125    402863613704 === 388615792330757088    10 0 1 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Connection Timed Out, The Algorithm Has Exceeded Two Minutes
====================================
```

Test Case: 2423227335211338189528063578 9

```
PEX1 - Factoring Program by the One and Only Isabella Gentile
CyS 431


Enter an integer you wish to factor: 2423227335211338189528063578 9


===================================
Brute Force Factoring
Ran out of time at factor 254434285
Connection Timed Out, The Algorithm Has Exceeded Two Minutes
===================================
Pollard's Rho
Connection Timed Out, The Algorithm Has Exceeded Two Minutes
===================================
Dixon's Algorithm
Enter number of factors in factor base: 400
1    3860420716910234 === 2423227335210855314130356 0310   42 1 0 0 0 1 0 1 1 0 0 1 0 0 0 1 0 0 1
2    3919599635835257 === 2423227335210855064740180 1612   42 1 0 0 0 1 0 1 1 0 0 1 0 0 0 1 0 0 1
3    9038085719330958 === 2423227335210352079139458 8834   42 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0
4    10388962677299067 === 2423227335210855124948790 2072  42 1 0 0 0 1 0 1 1 0 0 1 0 0 0 1 0 0 1
5    10796167598905889 === 2423227335209500878530137 1020  44 0 0 1 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0
6    12225574098414983 === 2423227335209828779719797 9526  42 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
7    12332142861557499 === 2423227335210855415409355 9026  42 1 0 0 0 1 0 1 1 0 0 1 0 0 0 1 0 0 1
8    18381256413763366 === 2423227335210855151241947 9718  42 1 0 0 0 1 0 1 1 0 0 1 0 0 0 1 0 0 1
9    20719530754967417 === 2423227335210080892426864 9754  43 1 3 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0
10    20788418962527911 === 2423227335208819103587599 8684   42 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 1
11    21065170059220985 === 2423227335210080754134243 7846   43 1 3 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0
12    22624285845451364 === 2423227335208794537130032 5238   42 1 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
13    23526354490987798 === 2423227335208943779206346 8044   42 0 1 1 0 0 0 0 0 0 0 0 0 0 0 0 2 0
```

```
159    84261111616228160 === 2423227335194688281057462 3334   44 2 0 0 0 0 0 0 0 0 0 0 0 1 0
160    84562250681348318 === 2423227335198158437706518 1536   43 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0
161    84580015619476308 === 2423227335207972296799822 5440   47 3 0 0 0 0 1 1 1 0 0 0 1 0 0
162    85167025016814732 === 2423227335202555677306278 2032   44 0 1 1 0 0 0 0 0 0 1 0 0 1 1
163    85699417176422968 === 2423227335202555892998172 7326   44 0 1 1 0 0 0 0 0 0 1 0 0 1 1
Connection Timed Out, The Algorithm Has Exceeded Two Minutes
===================================
```

Test Case: 2130168056979909203766757141159374442919

```
PEX1 - Factoring Program by the One and Only Isabella Gentile
CyS 431


Enter an integer you wish to factor: 2130168056979909203766757141159374442919


====================================
Brute Force Factoring
Ran out of time at factor 331592253
Connection Timed Out, The Algorithm Has Exceeded Two Minutes
====================================
Pollard's Rho
Connection Timed Out, The Algorithm Has Exceeded Two Minutes
====================================
```

```
Dixon's Algorithm
Enter number of factors in factor base: 10000
1    14595095261696338800 === 2130168056979909203613457413243854440000    75 1 0 1 0 0 0 0 0 0 0
2    29190190523392677601 === 2130168056979909203737362039965147864444    75 1 0 1 0 0 0 0 0 0 0
3    38614992423745682286 === 2130168056979909203172123953320295282282    75 1 0 1 0 0 0 0 0 0 0
4    46153743694091698283 === 2130168056979909203474507363356681661818    75 1 0 1 0 0 0 0 0 0 0
```

```
1179    704506321672360044747 === 2130168056979909189989831701695377735658    75 1 0 1 0 0 0 0 0
1180    704959720617719276824 === 2130168056979909200683982015994266639868    75 1 0 1 0 0 0 0 0
Connection Timed Out, The Algorithm Has Exceeded Two Minutes
====================================
```