#include<stdio.h>

#include<string.h>

void perfect(int n)

{

int i,sum=0;

for(i =0;i<n;i++)

{

if(n%i==0)

sum=sum+i;

}

if(sum==n)

printf("True");

else

printf("False")

}

int depth(char s[256])

{

int k,max=0,current\_max=0;

int m=strlen(s);

for(k=0;k<m;k++)

{

if(s[k]=='(')

{

current\_max++;

if(current\_max>max)

max=current\_max;

}

if(s[k]==')')

{

if(current\_max>0)

current\_max--;

}}

return(max);}

int sumsquares(int x=0;int y=0;int z=0;int p=0;int q=0)

{

int flag=0;

for(int a=0;a<x;a++)

{

if(x==a\*a)

flag=flag+x;}

for(int b=0;b<y;b++)

{

if(y==b\*b)

flag=flag+b;}

for(int c=0;c<z;c++)

{

if(z==c\*c)

flag=flag+z;}

for(int d=0;d<p;d++)

{

if(p==d\*d)

flag=flag+p;}

for(int e=0;e<q;e++)

{

if(q==e\*e)

flag=flag+q;}

return(flag);}

int main()

{

printf("INPUT\t" "\tOUTPUT");

printf("\nTestCase 1\t" "perfect(6)\t");

perfect(6);

printf("\nTestCase 2\t" "perfect(12)\t");

perfect(12);

printf("\nTestCase 3\t" "perfect(8128)\t");

perfect(8128);

printf("\nTestCase 4\t" "depth("33")\t%d",depth(33));

printf("\nTestCase 5\t" "depth("(a+b)(c-d)(e-f)")\t%d",depth((a+b)(c-d)(e-f)));

printf("\nTestCase 6\t" "depth("sqrt((2(b\*b-4ac)+33)-64)")\t%d",depth(sqrt((2(b\*b-4ac)+33)-64));

printf("\nTestCase 7\t" "sumsquares([3,9,12,16])\t%d",sumsquares(3,9,12,16));

printf("\nTestCase 8\t" "sumsquares([5,6,7,8])\t%d",sumsquares(5,6,7,8));

printf("\nTestCase 9\t" "sumsquares([64,676,1024])\t%d",sumsquares(64,676,1024));

printf("\nTestCase 10\t" "perfect(28)\t");

perfect(28);

printf("\nTestCase 11\t" "perfect(77)\t");

perfect(77);

printf("\nTestCase 12\t" "perfect(33550336)\t");

perfect(33550336);

printf("\nTestCase 13\t" "depth("a3f7+ag343")\t%d",depth(a3f7+ag343));

printf("\nTestCase 14\t" "depth("() ((((()))))")\t%d",depth(()((((()))))));

printf("\nTestCase 15\t" "depth("() () (()) (()) ((())) (((())))")\t%d",depth(() () (()) (()) ((())) (((())))));

printf("\nTestCase 16\t" "sumsquares([625,676,729])\t%d",sumsquares(625,676,729));

printf("\nTestCase 17\t" "sumsquares([23,31,47,55,77])\t%d",sumsquares(23,31,47,55,77));

printf("\nTestCase18\t"sumsquares([1048576,145924,5184])\t%d",sumsquares(1048576,145924,5184));