

$$3^2+4^2=5^2$$

$$6^2+8^2=10^2$$

$$12^2+5^2=13^2$$

$$(m^2-n^2)^2=m^4-2m^2n^2+n^4=m^4-2m^2n^2+n^4+\underline{4m^2n^2}-4m^2n^2 =$$

$$=(m^4+2m^2n^2+n^4)-4m^2n^2=(m^2+n^2)^2-4m^2n^2$$

$$(m^2-n^2)^2=(m^2+n^2)^2-4m^2n^2$$

$$(m^2-n^2)^2+4m^2n^2=(m^2+n^2)^2$$

$$(m^2-n^2)^2+(2mn)^2=(m^2+n^2)^2$$

$m^2-n^2$   
 $2mn$   
 $m^2+n^2$

$$3^2 + 4^2 = 5^2$$

задача сгенерить и вывести 100 пифагоров троек



$$x^3+y^3=z^3$$

$$x^4+y^4=z^4$$

$$x^5+y^5=z^5$$

$$x^{1117}+y^{1117}=z^{1117}$$

350 лет

1994 году

30 лет на док-во

само док-во 200 стр

void pifagor2 ()

```
{
  int i = 0;
  int stop = 0;
  for(int m = 1; m < 100; m++)
  {
    if(stop == 1)
    {
      break;
    }
    for(int n = 1; n < 100; n++)
    {
      if(stop == 1)
      {
        break;
      }
      if( m > n && (m * m - n * n) * (m * m - n * n) + 2 * m * n * 2 * m * n == (m * m + n * n) * (m * m + n * n) && (m != n))
      {
        cout << m * m - n * n << " " << 2 * m * n << " " << m * m + n * n << endl;
        //cout << "m ==" << m << " n ==" << n << endl;
        cout << i << endl;
        i++;
        if(i == 100)
        {
          stop = 1;
        }
      }
    }
  }
}
```

void pifagor ()

```
{
  int i = 0;
  for(int m = 1; m < 100; m++)
  {
    for(int n = 1; n < 100; n++)
    {
      if(i == 100)
      {
        break;
      }
      if( m > n && (m * m - n * n) * (m * m - n * n) + 2 * m * n * 2 * m * n == (m * m + n * n) * (m * m + n * n) && (m != n))
      {
        cout << m * m - n * n << " " << 2 * m * n << " " << m * m + n * n << endl;
        //cout << "m ==" << m << " n ==" << n << endl;
        cout << i << endl;
        i++;
      }
    }
  }
}
```

void pifagor3 ()

```
{
  int i = 0;
  for(int m = 1; m < 100; m++)
  {
    for(int n = 1; n < 100; n++)
    {
      if( m > n && (m * m - n * n) * (m * m - n * n) + 2 * m * n * 2 * m * n == (m * m + n * n) * (m * m + n * n) && (m != n))
      {
        cout << m * m - n * n << " " << 2 * m * n << " " << m * m + n * n << endl;
        //cout << "m ==" << m << " n ==" << n << endl;
        cout << i << endl;
        i++;
        if(i == 100)
        {
          goto finish;
        }
      }
    }
  }
  finish:
  cout << "finish";
}
```