1/(tg5x+tg2x) - 1/(ctg5x + ctg2x) = tg3x
1/(sin5x/cos5x+sin2x/cos2x) - 1/(cos5x/sin5x + cos2x/sin2x) = sin3x/cos3x
1/([sin5x*cos2x+sin2x*cos5x]/cos5x*cos2x) - 1/([cos5x*sin2x + cos2x*sin5x]/sin2x*sin5x) =
=sin3x/cos3x
cos5x*cos2x/[sin5x*cos2x+sin2x*cos5x] - sin2x*sin5x/[cos5x*sin2x + cos2x*sin5x] =
=sin3x/cos3x
cos5x*cos2x/sin(5x+2x) - sin2x*sin5x/sin(5x+2x) = sin3x/cos3x
[cos5x*cos2x - sin2x*sin5x]/sin(5x+2x) = sin3x/cos3x
cos(5x+2x)/sin(5x+2x) = sin3x/cos3x
cos7x/sin7x = sin3x/cos3x
cos7x/sin7x - sin3x/cos3x=0
[cos7x*cos3x - sin3x*sin7x]/cos3x*sin7x=0
[cos7x*cos3x - sin3x*sin7x]/cos3x*sin7x=0
[cos7x*cos3x - sin3x*sin7x]=0
cos7x*cos3x - sin3x*sin7x=0
cos(7x+3x)=0
cos10x=0
10x=P/2+Pn
x=P/20+Pn/10

ax+by=c
x=x0 - bt
y=y0+at

x=x0 + bt
y=y0 - at

Ответ P/20+Pn/10, где n целое и n!=7+5t, где t произвольное целое

P/20+Pn/10!=Pk/2|*(20/P)
1+2n!=10k
1!=10k-2n нет решения

P/20+Pn/10!=P/4+Pk/2|*(20/P)
1+2n!=5+10k
-4!=10k-2n
-2!=5k-n
k0=1 n0=7

-2!=5k0-n0
-2!=5(k0 + a*t)-(n0 + b*t)=
=5k0 + 5a*t-n0 - b*t=5k0 - n0 + 5a*t - b*t
a=1 b=5

k=k0 + 1*t = 1+t
n=n0 + 5t=7+5t

sin2x!=0
x!=Pk/2
cos2x!=0
x!=P/4+Pk/2
cos3x!=0
x!=P/6+Pk/3
cos5x!=0
x!=P/10+Pk/5
sin5x!=0
x!=Pk/5
sin7x!=0
x!=Pk/7

P/20+Pn/10!=P/6+Pk/3
1/20+n/10!=[1+2k]/6
1/20+n/10!=[1+2k]/6|*60
3+6n!=10[1+2k]
3+6n!=10+20k
20k-6n!=-7 реш нет
P/20+Pn/10!=P/10+Pk/5
1+2n!=2+4k
2n-4k!=1 реш нет
P/20+Pn/10!=Pk/5
1+2n!=4k реш нет
P/20+Pn/10!=Pk/7
7+14n!=20k
7!=20k-14n реш нет