```
> restart;with(geometry);Digits:=250;_EnvHorizontalName := x;
  _EnvVerticalName := y;
```

[*Apollonius*, *AreCollinear*, *AreConcurrent*, *AreConcyclic*, *AreConjugate*, *AreHarmonic*, *AreOrthogonal*, *AreParallel*, *ArePerpendicular*, *AreSimilar*, *AreTangent*, *CircleOfSimilitude*, *CrossProduct*, *CrossRatio*, *DefinedAs*, *Equation*, *EulerCircle*, *EulerLine*, *ExteriorAngle*, *ExternalBisector*, *FindAngle*, *GergonnePoint*, *GlideReflection*, *HorizontalCoord*, *HorizontalName*, *InteriorAngle*, *IsEquilateral*, *IsOnCircle*, *IsOnLine*, *IsRightTriangle*, *MajorAxis*, *MakeSquare*, *MinorAxis*, *NagelPoint*, *OnSegment*, *ParallelLine*, *PedalTriangle*, *PerpenBisector*, *PerpendicularLine*, *Polar*, *Pole*, *RadicalAxis*, *RadicalCenter*, *RegularPolygon*, *RegularStarPolygon*, *SensedMagnitude*, *SimsonLine*, *SpiralRotation*, *StretchReflection*, *StretchRotation*, *TangentLine*, *VerticalCoord*, *VerticalName*, *altitude*, *apothem*, *area*, *asymptotes*, *bisector*, *center*, *centroid*, *circle*, *circumcircle*, *conic*, *convexhull*, *coordinates*, *detail*, *diagonal*, *diameter*, *dilatation*, *directrix*, *distance*, *draw*, *dsegment*, *ellipse*, *excircle*, *expansion*, *foci*, *focus*, *form*, *homology*, *homothety*, *hyperbola*, *incircle*, *inradius*, *intersection*, *inversion*, *line*, *medial*, *median*, *method*, *midpoint*, *orthocenter*, *parabola*, *perimeter*, *point*, *powerpc*, *projection*, *radius*, *randpoint*, *reciprocation*, *reflection*, *rotation*, *segment*, *sides*, *similitude*, *slope*, *square*, *stretch*, *tangentpc*, *translation*, *triangle*, *vertex*, *vertices*]

$$Digits := 250$$

$$\_EnvHorizontalName := x$$

$$\_EnvVerticalName := y$$

```
>
> distancia := proc( i )
>   local r, s, t; global p4;
>
>   r := (c_a*clave)/(clave-i*c_a);
>   s := -(r - raiz);
>   t := ((s*clave)-(c_a*clave))/(c_a*s);
>   s := (c_a*clave)/(clave-t*c_a);
>   p4 := round(t);
>
>   point(P1,[i,r]):
>   point(P2,[t,s]):
>
>   return distance(P1,P2);
>
> end proc:
>
> lower := proc( left, right )
>   local l, m_1, m, m1, r, new_left, middle, new_right, diff,
  divisor;
>
>   new_left := left;
>   new_right:= right;
```

```
>   diff := new_right - new_left;
>   divisor := div;
>
>   if( diff < 4 ) then
>     new_right := right + (4-diff);
>     diff := new_right - new_left;
>   end if;
>
>   middle := ceil( new_left+((new_right-new_left)/2) );
>
>   l  := distancia( new_left );
>   m_1:= distancia( middle-1 );
>   m  := distancia( middle );
>   m1 := distancia( middle+1 );
>   r  := distancia( new_right );
>
>   if( diff = 4 ) then
>     if( l < m_1 ) then
>       return [new_left,l];
>     elif( m_1 < m ) then
>       return [middle-1,m_1];
>     elif( m < m1 ) then
>       return [middle,m];
>     elif( m1 < r ) then
>       return [middle+1,m1]
>     else
>       return [new_right,r];
>     end if;
>   elif( (l < m_1) or (m_1 < m) ) then
>     new_right:= middle-1;
>     return lower( new_left, new_right );
>   elif( (m_1 > m) and (m < m1) ) then
>     return [middle,m];
>   elif( (m > m1) and ( (m1 < r) or ( r < m1) ) ) then
>     new_left := middle+1;
>     return lower( new_left, new_right );
>   end if;
>
> end proc:
>
> higher := proc( i )
>   local p1, p2, p3;
>   p1 := distancia( i-1 );
>   p2 := distancia( i );
>   p3 := distancia( i+1 );
>   if( (p1 > p2) and (p1 > p3) ) then
>     return [i-1,p1];
>   elif( (p2 > p1) and (p2 > p3) ) then
>     return [i,p2];
```

```
>   else return [i+1,p3];
>   end if;
> end proc:
>
> ask_one := proc( low, up, div )
>   local res, l, u;
>
>   l := distancia( low );
>   u := distancia( up );
>
>   if( l < u ) then
>     res := evalf(u/l);
>   else
>     res := evalf(l/u);
>   end if;
>
>   return res;
>
> end proc:
>
> tanto13 := proc( p1, p2, p3 )
>   local d1, d2, t, i, low_below, low_over, div, low_div, over_div,
  top, temp, LT1, LT2, TopPointT2;
>   global clave, raiz, a, c_a;
>   clave := p1 * p2;
>   raiz := evalf(sqrt(clave));
>
>   print(p1,p2,clave,raiz);
>
>   a  := evalf( clave / ( clave - raiz ) );
>   c_a:= a * raiz;
>
>   # Original Triangle T1
>
>   low_below := [p1-1,distancia( p1-1 )];
>   top       := higher( trunc( raiz ) );
>   low_over  := [p2-1,distancia( p2-1 )];
>
>   point( PT1, low_below );
>   point( PT2, top );
>   point( PT3, low_over );
>
>   triangle( T1, [PT1,PT2,PT3] );
>
>   centroid( C1, T1 );
>   orthocenter( O1, T1 );
>
>   incircle( inc1, T1, 'centername'=i1 );
>   print( "incircle center", coordinates( center( inc1 ) ) );
```

```
>   print( "incircle radius", radius( inc1 ) );
>
>   circumcircle( circ1, T1, 'centername'=c1 );
>   print( "circumcircle center", coordinates( center( circ1 ) ) );
>   print( "circumcircle radius", radius( circ1 ) );
>
>   point(inc1center,coordinates( center( inc1 ) ) );
>   point(circ1center,coordinates( center( circ1 ) ) );
>
>   line(LineT11,[PT1,PT2]);
>   line(LineT12,[PT3,PT2]);
>   line(CENTRES1,[C1,O1]);
>
> #  TangentLine(TLine1,PT2,circ1,[TLine11,TLine12]);
>
>   print( low_below );
>   print( top );
>   print( low_over );
>   print( abs( low_below[2]-low_over[2] ) );
>
>   print( area( T1 ) );
>   print( coordinates( C1 ) );
>   print( coordinates( O1 ) );
> #  print( "slopes", slope(LineT11));
> #  print( slope(TLine11) );
>
>   printf("\n");
>
>   # Guess Triangle T2
>
>
>   low_below := [p3-1,distancia( p3-1 )];
>   div       := p4;
>   top       := higher( trunc(raiz) );
>   low_over  := [div,distancia( div )];
>
>   if( low_below[2] > low_over[2] ) then
>     temp := low_below[2];
>     low_below[2] := low_over[2];
>     low_over[2] := temp;
>   end if;
>
>   point( PT4, low_below );
>   point( PT5, top );
>   point( PT6, low_over );
>   triangle( T2, [PT4,PT5,PT6] );
>
>   centroid( C2, T2 );
>   orthocenter( O2, T2 );
```

```
>
>   incircle( inc2, T2,'centername'=i2 );
>   print( "incircle center", coordinates( center( inc2 ) ) );
>   print( "incircle radius", radius( inc2 ) );
>
>   circumcircle( circ2, T2, 'centername'=c2 );
>   TopPointT2 := coordinates(center(circ2));
>   TopPointT2[2] := TopPointT2[2]+radius(circ2);
>   print( "circumcircle center", TopPointT2 );
>   print( "circumcircle radius", radius(circ2) );
>
>   point(inc2center,coordinates( center( inc2 ) ) );
>   point(circ2center,coordinates( center( circ2 ) ) );
>
>   line(LineT21,[PT4,PT5]);
>   line(LineT22,[PT5,PT6]);
>   line(CENTRES2,[C2,O2]);
>
>   line(THL,y=VerticalCoord(PT5),[x,y]);
> #  line(THL,y=TopPointT2[2],[x,y]);
>
>   TangentLine(TLine2,PT2,circ2,[TLine21,TLine22]);
> #  tangentpc(TLine21,PT5,circ2);
>
>
> #  line( ref, y=VerticalCoord(C2),[x,y] );
> #  reflection( T3, T2, ref );
>
>   print( p3-1, div );
>   print( low_below );
>   print( top );
>   print( low_over );
>   print( abs( low_below[2]-low_over[2] ) );
>
>   print( area( T2 ) );
>   print( coordinates( C2 ) );
>   print( coordinates( O2 ) );
>   print( "coordinates of T2" );
>   print( "slopes", slope(LineT21), slope(LineT22) );
>   print( slope(TLine21) );
>   print( FindAngle( THL,TLine21 ) );
>
>   printf("\n");
>
>   # Rotation of T2
>
> #  rotation(T3,T2,slope(TLine21),'clockwise',PT5);
>   rotation(T3,T2,FindAngle(THL,TLine21),'clockwise',PT5);
>   centroid( C3, T3 );
```

```
>   orthocenter( O3, T3 );
>
>   incircle( inc3, T3,'centername'=i3 );
>   print( "incircle center", coordinates( center( inc3 ) ) );
>   print( "incircle radius", radius( inc3 ) );
>
>   circumcircle( circ3, T3, 'centername'=c3 );
>   print( "circumcircle center", coordinates( center( circ3 ) ) );
>   print( "circumcircle radius", radius( circ3 ) );
>
>   point(inc3center,coordinates( center( inc3 ) ) );
>   point(circ3center,coordinates( center( circ3 ) ) );
>
>   line(CENTRES3,[C3,O3]);
>
>   print( "CENTRES, y=0" );
>   print( solve({Equation(CENTRES1),y=0}) );
>   print( solve({Equation(CENTRES2),y=0}) );
>   print( solve({Equation(CENTRES3),y=0}) );
>   print( solve({Equation(CENTRES2),Equation(CENTRES3)}) );
>
> draw( [THL, T1(colour=green), T2(colour=red), C1(colour=green),
  C2(colour=red), O1(colour=magenta), O2(colour=black),
  inc1center(colour=green), circ1center(colour=green),
  inc2center(colour=red), circ2center(colour=red),
  TLine21(colour=red), T3(colour=blue), C3(colour=blue),
  O3(colour=blue), inc3center(colour=blue),
  circ3center(colour=blue), CENTRES1(colour=green),
  CENTRES2(colour=red), CENTRES3(colour=blue)], axes=normal,
  scaling=unconstrained );
>
> end proc:
>
> tanto13(3,11,1);detail(T3);
```

3, 11, 33, 5.744562646538028659850611468 22

"incircle center", [5.983618994870454250300550854 33, 23.909936464159159167491193707 5]

"incircle radius", 3.934970971853907689235142368 37

"circumcircle center",

[6.000000000000000000000000000220, 142.019471047614327540833507142]

"circumcircle radius", 122.110037819336817730980534807

[2, 19.974965492305251478256051339 2]

[5, 264.125414130823295189417437639]

[10, 19.974965492305251478256051339 2]

0.

976.601794554072174844645545200

$$\left[\frac{17}{3}, 101.358448371811266048643180106\right]$$

[4.999999999999999999999999999, 20.036403020205143064262526031 7]

"incircle center", [15.241094327789419869052427749 2, 47.940432640337720717823794454 2]

"incircle radius", 14.914909881806252564712341294 0

"circumcircle center",

[15.999999999999999999999999984, 264.646505081864413184965078700]

"circumcircle radius", 116.363118124543771328988895931

0, 32

[0, 33.025522758531468153111453159 9]

[5, 264.125414130823295189417437639]

[32, 33.025522758531468153111453160 2]

$0.3\ 10^{-27}$

3697.598261956669232580895751 66

$$\left[\frac{37}{3}, 110.058819882628743831880114653\right]$$

[5.000000000000000000000000198, 33.609685733244947783687978420 9]

"coordinates of T2"

"slopes", 46.219978274458365407261196895 8, -8.559255236010808408752073499 22

0.094956901811846121203956709103 5

0.094673033109203020619930654508 4

"incircle center", [-5.241094327788498265833235732 87, 47.940432640337677059723978881 1]

"incircle radius", 14.914909881806252564712341293 9

"circumcircle center",

[5.000000000000496059548260153 75, 147.762296006279523860428541708]

"circumcircle radius", 116.363118124543771328988895931

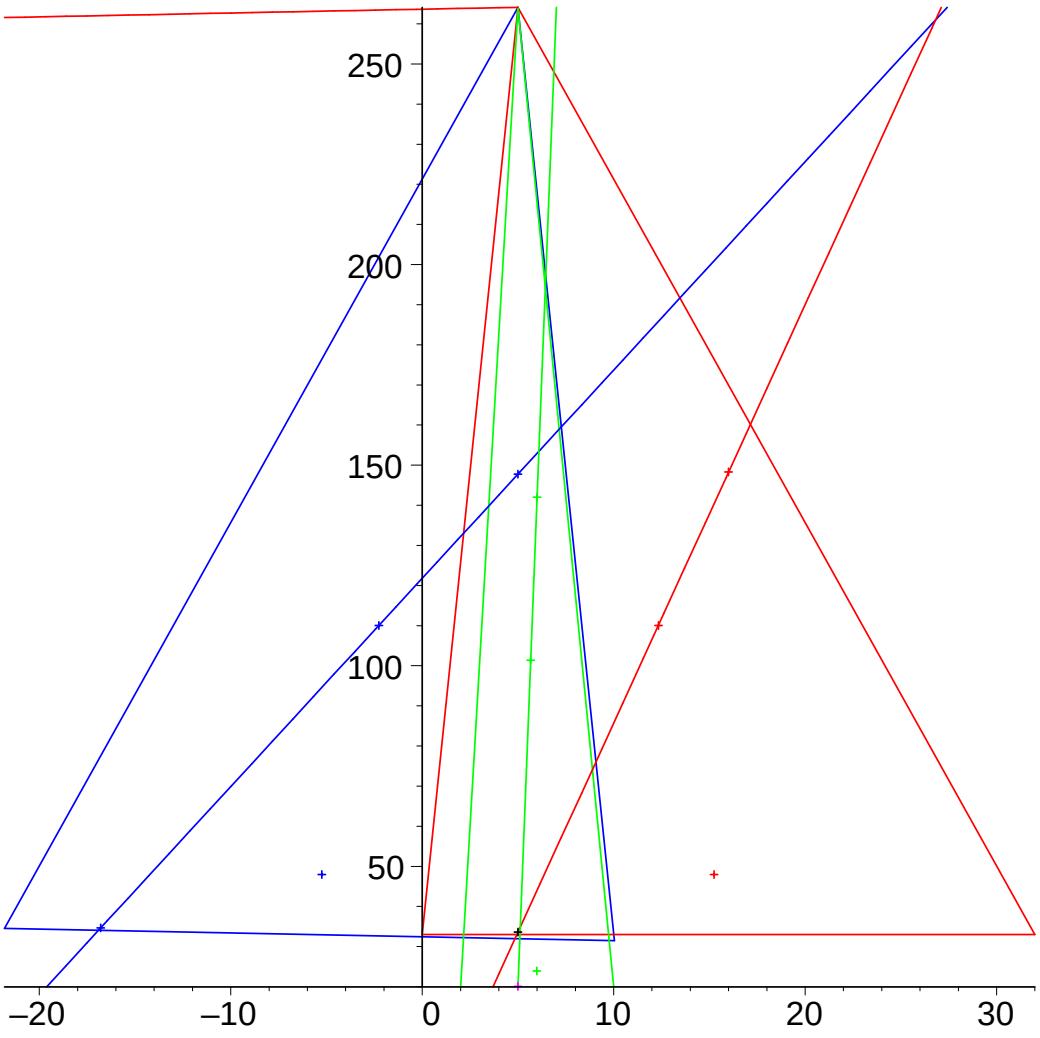
"CENTRES, y=0"

$\{y = 0., x = 4.835744391871640490303449587 81\}$

$\{y = 0., x = 1.776012816196825637207700628 77\}$

$\{y = 0., x = -23.464324095134088012446963946 4\}$

$\{y = 260.985727006292056089058930941, x = 26.810898464995264951595667879 1\}$



name of the object: T3

form of the object: triangle2d

method to define the triangle: points

the three vertices: [[-21.823868174638150968900180016 2, 34.533080006979523971385233 6097], [5., 264.12541413082329518941743763 9], [10.032831175619315731864246139 3,\ 31.508066534727623579502819604]]

```
> tanto13(3,11,2);detail(T3);
```

3, 11, 33, 5.744562646538028659850611468218929318220264457982 8

"incircle center", [5.983618994870454250300550854355683555531657116890 1,

23.909936464159159167491193707532943070941566406837]

"incircle radius", 3.934970971853907689235142368371909203156524523179 4

"circumcircle center", [5.99999999999999999999999999999999999999999999905,
142.019471047614327540833507143169860283226163755 16]
"circumcircle radius", 122.11003781933681773098053480838222948366244125063
[2, 19.974965492305251478256051339161033867785041883658]
[5, 264.125414130823295189417437639696207233186426445 68]
[10, 19.974965492305251478256051339161033867785041883658]
0.
976.60179455407217484464554520214069346160553824810
$\left[\frac{17}{3}, 101.3584483718112660486431801060060916562521700 7100\right]$
[5.00000000000000000000000000000000000000000000000001,
20.036403020205143064262526031678554402304182702690]

"incircle center", [7.917759224063796989091680909610113286954361892 5423,
25.431522817157122467996155458824403348306389761254]
"incircle radius", 6.804131580430830408092216934393937306528435937 8557
"circumcircle center", [5.931392087109393644919261755538097943252094244 2545,
264.128944612648121817352285732913900265115974709 14]
"circumcircle radius", 122.859106387625777489280708671953546367231803469 98
1, 15
[1, 18.509741310556103024780791289473196831672251411442]
[5, 264.125414130823295189417437639696207233186426445 68]
[15, 18.745879862226184621137051370603657773399404574545]
0.236138551670081596356260081130460941727153163103
1718.837432638530181959744004289300150927144918913 5
[7, 100.460345101201860945111760099924353946086027477 22]
[9.137215825781212710161476488923804113495811511464 5,
18.841358853560894179192126177852354042489739953329]
"coordinates of T2"
"slopes", 61.403918205066798041159161587555752600378543758560,
-24.537953426859711056828038626909254945978702187114
0.007581195075944579124417500507184283321522339608768 5
0.007581049839106742102448778603822247259229239819351 3

"incircle center", [6.108142426059797495402737163054451263870522662552 0,
25.416262463541264987833558907932783928515355634464]
"incircle radius", 6.804131580430830408092216934393937306528435937 8550
"circumcircle center", [5.000000000000000000000027550496566504832532946 35,

141.266307743197517700136728967742660865954622975 68]

"circumcircle radius", 122.859106387625777489280708671953546367231803469 99

"CENTRES, y=0"

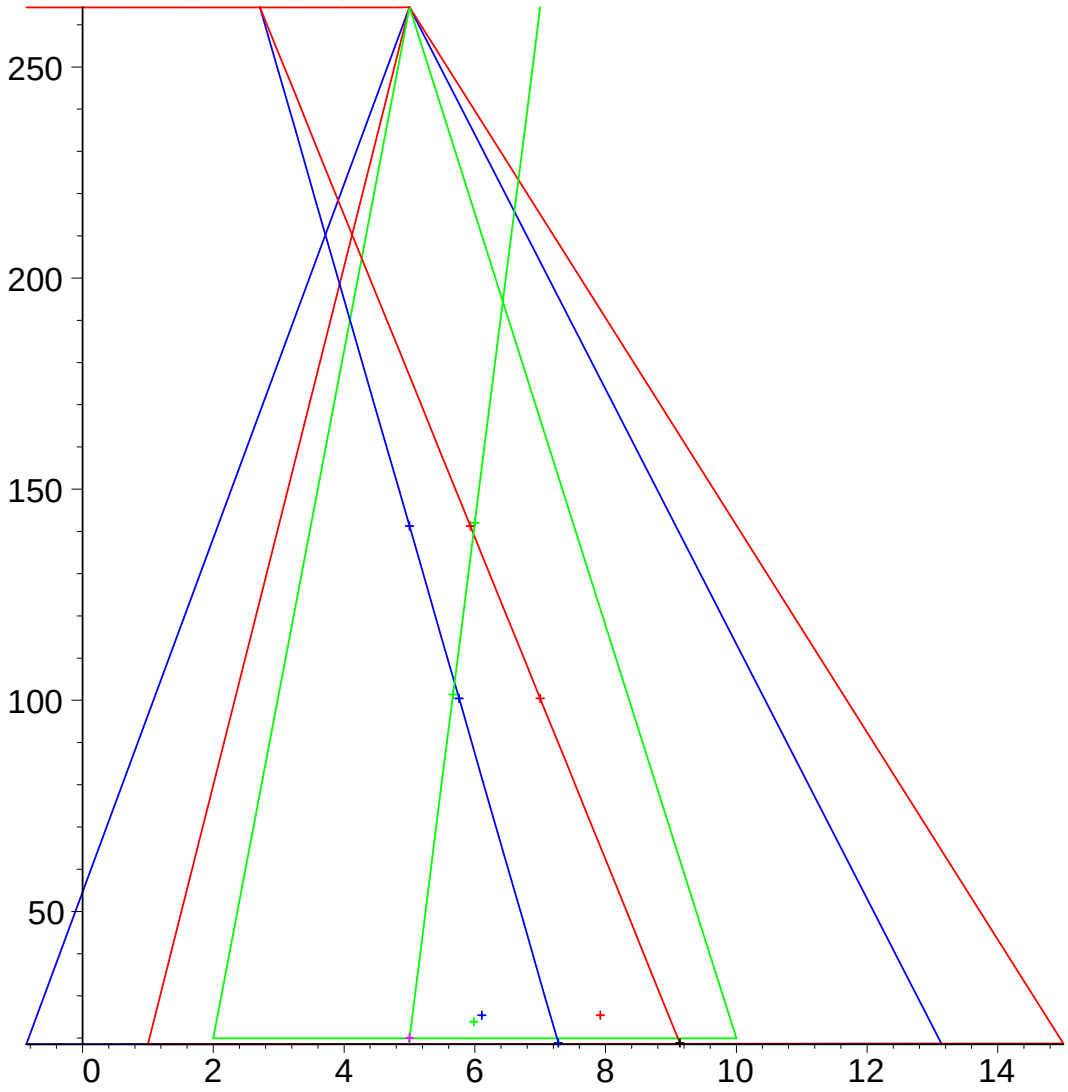
{y = 0., x = 4.835744391871640490303449587827557491138573108800 2}

{y = 0., x = 9.630582040829211752809542999345228620994524154205 4}

{y = 0., x = 7.627608448885447452164028620140954510535314905789 9}

{x = 2.715724101703771268617847605701542451582948657924 5,

y = 264.074263455152973696233108682520433019114082405 43}



name of the object: T3

form of the object: triangle2d

method to define the triangle: points

the three vertices: [[-.8618918770728320027323381765820089793024784550640, 18.547\1 2323650575052902478864350314208287779297671], [5., 264.1254141308232951894174\ 3763969620723318642644568], [13.13949597961889294657750163724996463690440242\ 9091, 18.67712132137759950459530579575701583261915444657]]

```
> tanto13(3,11,3);detail(T3);
```

3, 11, 33, 5.74456264653802865985061146822

"incircle center", [5.98361899487045425030055085433, 23.9099364641591591674911937075]

"incircle radius", 3.93497097185390768923514236837

"circumcircle center",

[6.000000000000000000000000000220, 142.019471047614327540833507142]

"circumcircle radius", 122.110037819336817730980534807

[2, 19.9749654923052514782560513392]

[5, 264.125414130823295189417437639]

[10, 19.9749654923052514782560513392]

0.

976.601794554072174844645545200

$$\left[\frac{17}{3}, 101.358448371811266048643180106\right]$$

[4.999999999999999999999999999999, 20.0364030202051430642625260317]

"incircle center", [5.98361899487045425030055085433, 23.9099364641591591674911937075]

"incircle radius", 3.93497097185390768923514236837

"circumcircle center",

[6.000000000000000000000000000220, 264.129508866951145271814041949]

"circumcircle radius", 122.110037819336817730980534807

2, 10

[2, 19.9749654923052514782560513392]

[5, 264.125414130823295189417437639]

[10, 19.9749654923052514782560513392]

0.

976.601794554072174844645545200

$$\left[\frac{17}{3}, 101.358448371811266048643180106\right]$$

[4.999999999999999999999999999999, 20.0364030202051430642625260317]

"coordinates of T2"

"slopes", 81.3834828795060145703871287667, -48.8300897277036087422322772600

0.008189609569759916867764721743 50

0.008189426485561791678250796064 07

"incircle center", [4.016381005131890794866074268 70, 23.909936464159149565150028498 3]

"incircle radius", 3.934970971853907689235142368 40

"circumcircle center",

[5.000000000001192069540090179 20, 142.015376311486477458436902837]

"circumcircle radius", 122.110037819336817730980534808

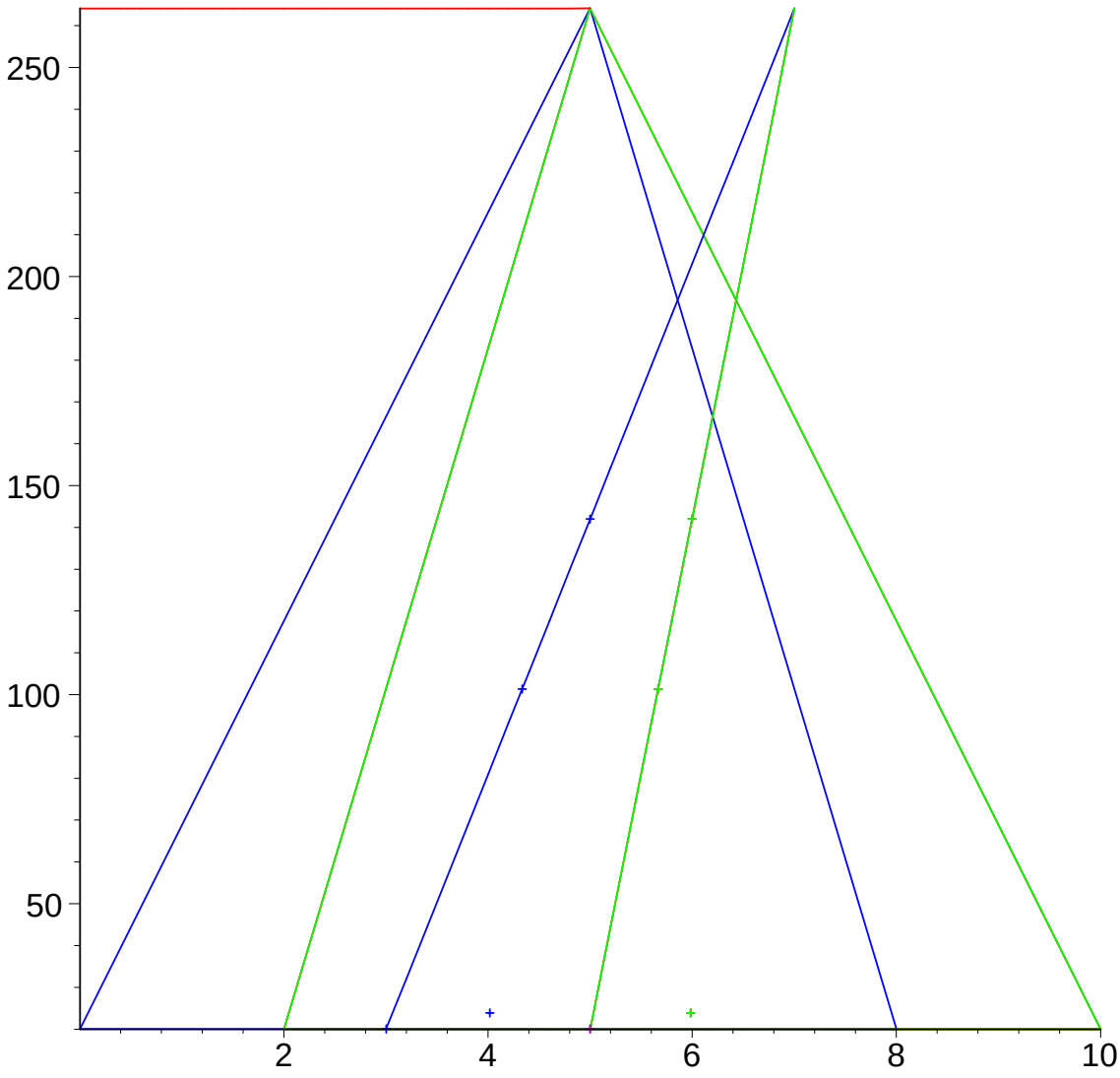
"CENTRES, y=0"

$\{y = 0., x = 4.835744391871640490303449587 81\}$

$\{y = 0., x = 4.835744391871640490303449587 81\}$

$\{y = 0., x = 2.672571217845879011142281402 56\}$

$\{x = 7.000805678505108756530903628 11, y = 264.100818210920414803484483463\}$



name of the object: T3

form of the object: triangle2d

method to define the triangle: points

the three vertices: [[.670798324961096356809213333e-3, 20.007720634585877371500522256], [5., 264.12541413082329518941743763 9], [8.000402532999622419216384363 49, 19\ 942205955016073664946225269]]

```
> tanto13(7,23,1);detail(T3);
```

7, 23, 161, 12.688577540449520380193772746089489791739526627525

"incircle center", [13.983999168964476667486456492123900210617771141496,

54.676178483351405546800167018272730117882742823848]
"incircle radius", 7.936234792159395926181303367307629271083648584660 4
"circumcircle center", [13.999999999999999999999999999999999999999999999980,
546.666971493468377990941685819821999915616317261 30]
"circumcircle radius", 499.991033046811759507015676270722131311269423 89
[6, 46.739943691192009620618863650965100846799094239188]
[12, 1046.654004452542236597827866036417157436130056309 3]
[22, 46.739943691192009620618863650965100846799094239188]
0.
7999.312486090801815817672019083616452714647696561 0
$\left[\frac{40}{3}, 380.044630611642085279688531112782453043242748262 57\right]$
[12.000000000000000000000000000000000000000000000004,
46.799948847989499857182221698703359298495610265029]

"incircle center", [73.902332302191074505846896131992280372870054965680,
233.596687710088133069051701039833802642482185164 32]
"incircle radius", 72.908137305406800695782330997320562099436130369239
"circumcircle center", [80.000000000000000000000000000000000000000000000000,
1051.831202307933234978417018367024210616166579576 9]
"circumcircle radius", 449.162221296120597141300764462471388747825821480 73
0, 160
[0, 160.688550404681332373269370042513240543046054795 07]
[12, 1046.654004452542236597827866036417157436130056309 3]
[160, 160.688550404681332373269370042513240543046054795 07]
0.
70877.236323828872337964679679512313351446720121140
$\left[\frac{172}{3}, 456.010368420634967114788868707147879507407388633 17\right]$
[11.999999999999999999999999999999999999999999999997,
162.693143238279625670134098312337994785540649706 90]
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"slopes", 73.830454503988408685379874666158659741090333459519,
-5.986253067890952055571341189147999438466783794015 1
0.153158319334791154368988364953397889555578343310 77
0.151977328205841616877915296870436866592122213093 35

"incircle center", [-49.902332302191074505845633946064238555717837897376,

233.596687710088133069051604942976747307294470059 69]

"incircle radius", 72.908137305406800695782330997320562099436130369227

"circumcircle center", [12.000000000000000000000697277084227444293975896146,

597.491783156421639456527101573945768688304234829 05]

"circumcircle radius", 449.162221296120597141300764462471388747825821480 79

"CENTRES, y=0"

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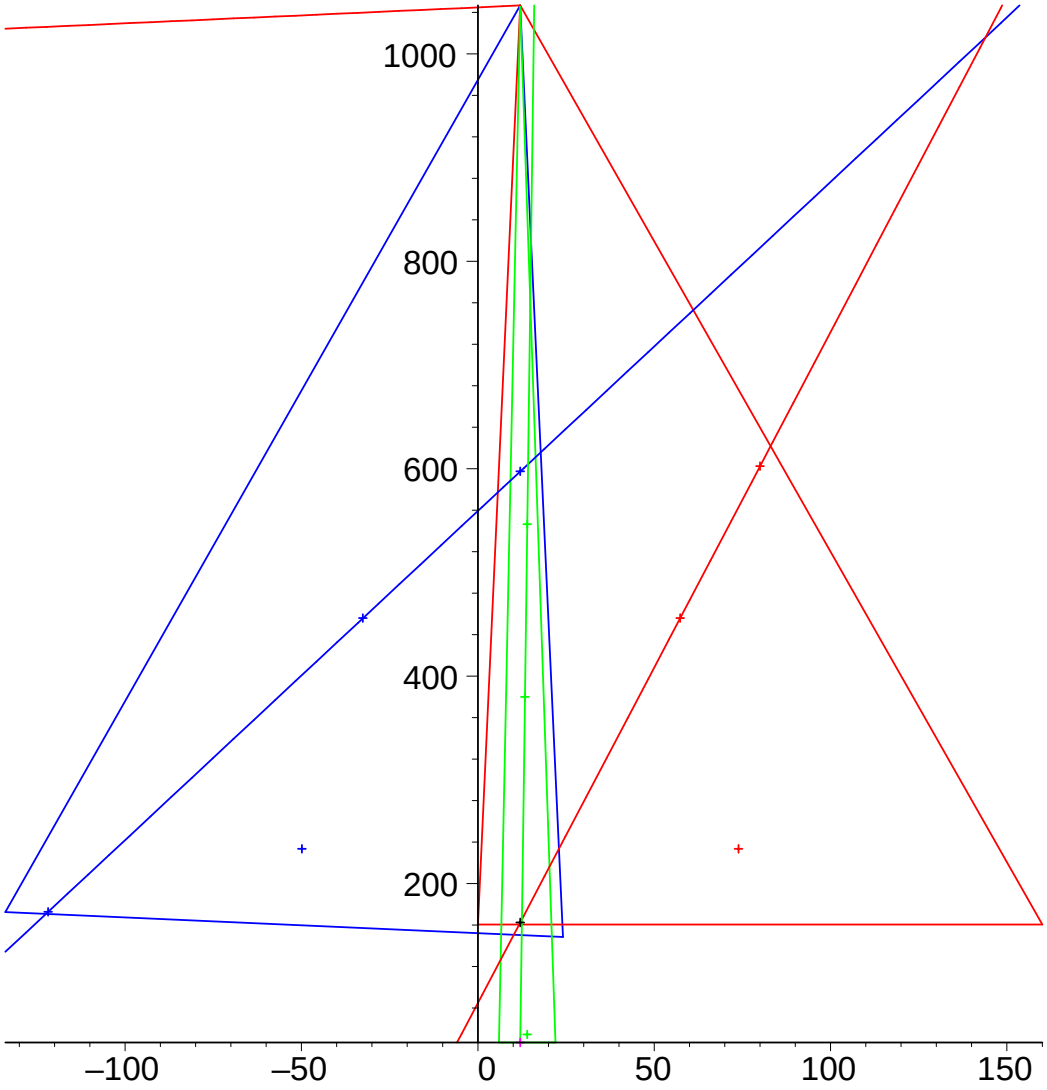
{y = 0., x = -13.144866582190580974360073783187121597709640389880}

{y = 0., x = -176.313149942068817560980759711084369659563235742 70}

{y = 1015.872602373030030554104736164948504947864905995 4,

x = 143.862248424254319487516909442620468595309530971 51 }



name of the object: T3

form of the object: triangle2d

method to define the triangle: points

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> tanto13(7,23,2);detail(T3);
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396103151443693528847903900353]
"incircle radius", 7.936234792159395926181303367307629271083648584660009655751 3\
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"circumcircle center", [13.999999999999999999999999999999999999999999999999999\
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[12, 1046.654004452542236597827866036417157436130056308301771650172251132815\
9212059988]
[22, 46.739943691192009620618863650965100846799094239187386447400115974925449\
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$$0.7\ 10^{-77}$$

7999.312486090801815817672019083616452714647696552915081622177081263123770\
7719230

$$\left[\frac{40}{3}, 380.044630611642085279688531112782453043242748262225514848324161027555 6\right.$$

$$\left.0697500520\right]$$

[12.000000000000000000000000000000000000000000000000000000000000000000000000\
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930510659809586632735 2, 118.562198235149633093863076818231691743800597524 41\
228924811460991126076931620658]
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224874200329654403000
"circumcircle center", [37.490359043690700514034874204245077062434692985463523 5\
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254985738531602624655099651442881 0]
"circumcircle radius", 484.144654935887492203023613621830214845051219477018676 6\

038695324260853231312983 1

1, 80

[1, 80.413309639077030026377281605187140345430003734036361848356077124012113\
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371947248

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66038695324260853231312983 3

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$\{y = 0., x = 14.719512927212646298267219632929778080275442706816737804783655487389087661119264\}$

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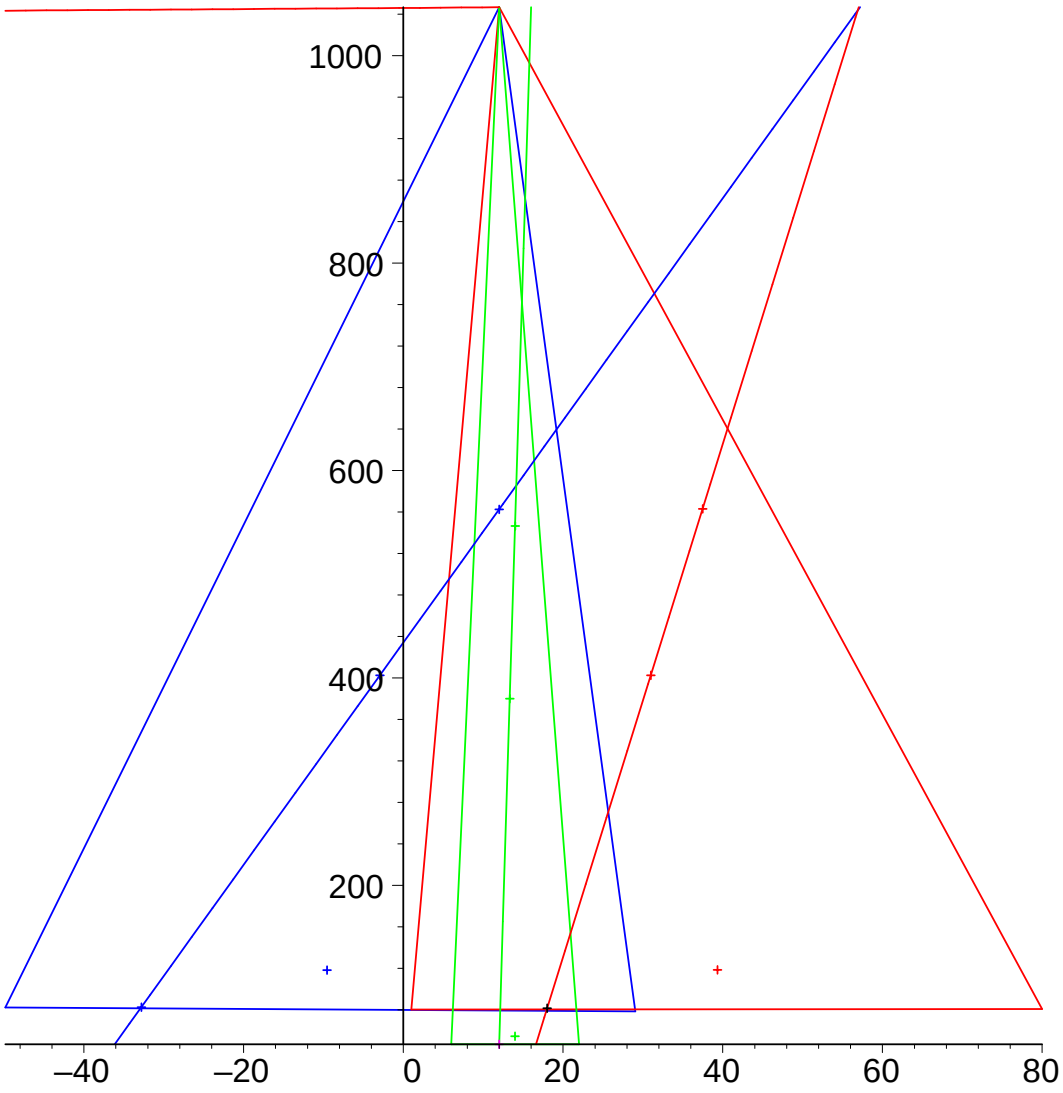
$\{y = 1043.651428464481533834907645709058389516161820461216988388697564482519254167391 1, x = 56.917016560949734001553215780994149774595892878980971353937014808049681732475933\}$



name of the object: T3

form of the object: triangle2d

method to define the triangle: points

the three vertices: [[-49.85760102431114191623412566996939823878118983211131805552
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436130056308301771650172251132815921205998 8], [29.05877023096082809855798988
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751024305611015064639 1, 54.6761784833514055468001670182727301178827428238 47\
396103151443693528847903900353]

"incircle radius", 7.9362347921593959261813033673076292710836485846600096557513\
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"circumcircle center", [13.9999999999999999999999999999999999999999999999999999\
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"circumcircle radius", 499.9910330468117595070156762707221313112694234234249439\
271028380003097501106350 6

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[12, 1046.654004452542236597827866036417157436130056308301771650172251132815\
9212059988]

[22, 46.739943691192009620618863650965100846799094239187386447400115974925449\
9859508428]

$$0.7\ 10^{-77}$$

7999.312486090801815817672019083616452714647696552915081622177081263123770\
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$$\left[\frac{40}{3}, 380.044630611642085279688531111278245304324274826222551484832416102755560697500520\right]$$

[12.000000000000000000000000000000000000000000000000000000000000000000000000000\
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"incircle radius", 24.852156330724299705324485677344954067829865420479329376709\
010257835644724664010

"circumcircle center", [24.559399304173731811819061328211867926528587050043855 8\
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757161259648991519179503465641199 4]

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[12, 1046.65400445254223659782786603641715743613005630830177165017225113281 5\
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9845610

$$\left[\frac{67}{3}, 385.43498408353946367134775042343966790829417151180697900284450796668 71\backslash$$

8303771497$\right]$

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"slopes", 99.19798138408057728517943515691586233190893684884579350285211438 30\
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597533311

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"CENTRES, y=0"

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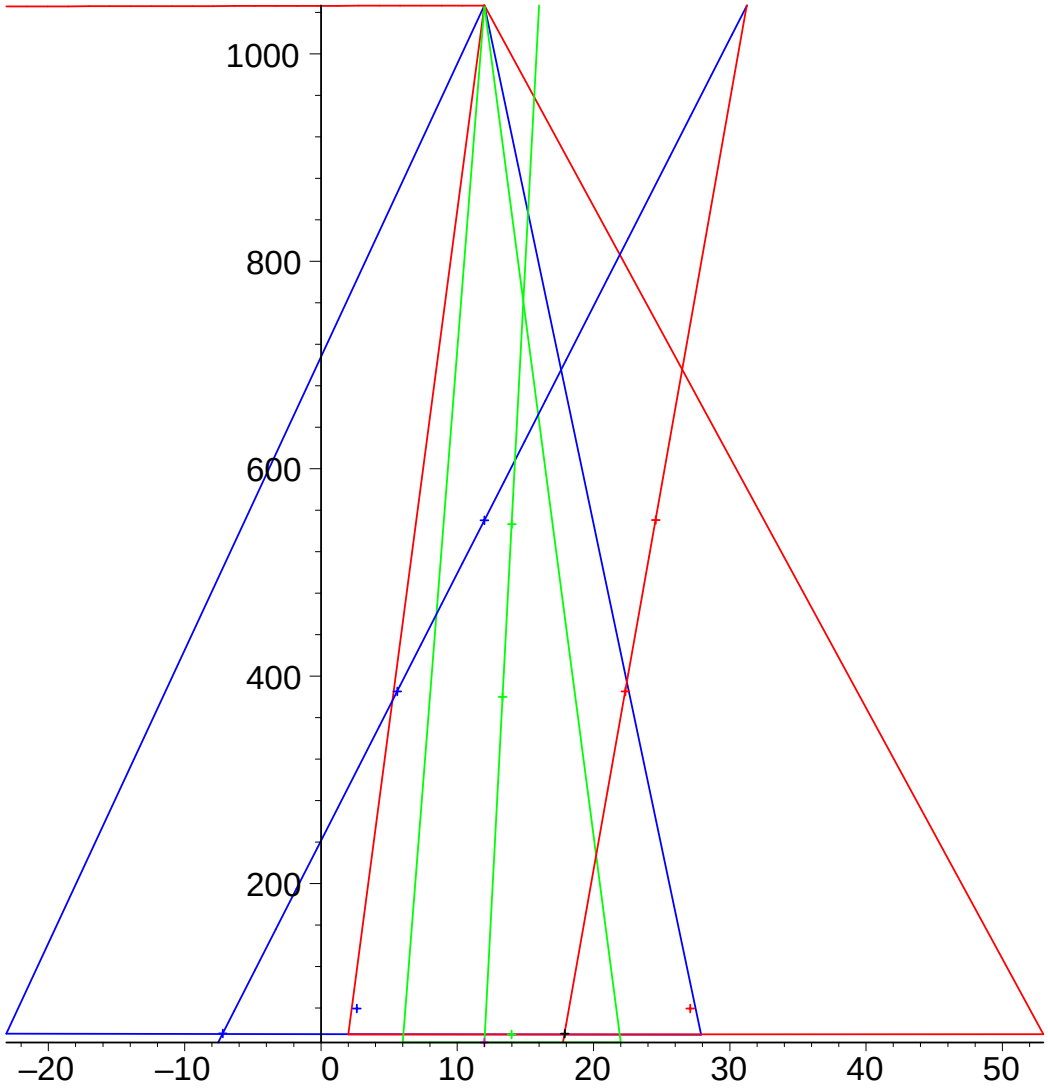
{$x = 17.134952317761933454848315607343877798872952257575796487334448670405 8\
07980170906$, $y = 0.$}

{$x = -9.359970156054320996823014885818669263700912754240223314098478749718 82\
88631311634$, $y = 0.$}

{$y = 1046.150840995065742316800070998651564866085566307604742592062673752 94\
82048196214$, $x = 31.244441325833148865193811292817974893075228833732383172 42\
5278293867559025952487$}



name of the object: T3

form of the object: triangle2d

method to define the triangle: points

the three vertices: [[-23.0985944232877195580730425421613952624259443031365266057
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436130056308301771650172251132815921205998 8], [27.892730913597819348322718 51
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> tanto13(7,23,4);detail(T3);
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"incircle radius", 7.93623479215939592618130336730762927108364858466000965575132771860339804439192 60

"circumcircle center", [13.99999999999999999999999999999999999999999999999999999\
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"circumcircle radius", 499.99103304681175950701567627072213131126942342342494392710283800030975011063506

[6, 46.739943691192009620618863650965100846799094239187386447400115974925449\
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[12, 1046.65400445254223659782786603641715743613005630830177165017225113281592121059988]

[22, 46.739943691192009620618863650965100846799094239187386447400115974925449\
9859508428]

$$0.7\ 10^{-77}$$

7999.312486090801815817672019083616452714647696552915081622177081263123770\
7719230

$$\left[\frac{40}{3}, 380.044630611642085279688531112782453043242748262225514848324161027555606975005 20\right]$$

[12.000000000000000000000000000000000000000000000000000000000000000000000000000\
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"incircle center", [20.840003631553914520650581370473172401068033210969098089611154486619385229243740, 61.276504321099425856209788111132074673603512372666\
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"circumcircle center", [18.661939546479119442401664234400681075675678570469264806573042342186578529126480, 1046.69823615242180530425108558550896030295183 5\

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3, 39
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979946322

"incircle center", [7.755046533142803667595736661427047642166118132996441134407\
8771313714572527063310, 61.245995656408248140727232390823183864344952175017\
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412918453195588688953
"circumcircle center", [12.000000000000000000000000000000000035674013410222 19\
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"circumcircle radius", 501.714777920145182061219815815752879972178890357366756 4\

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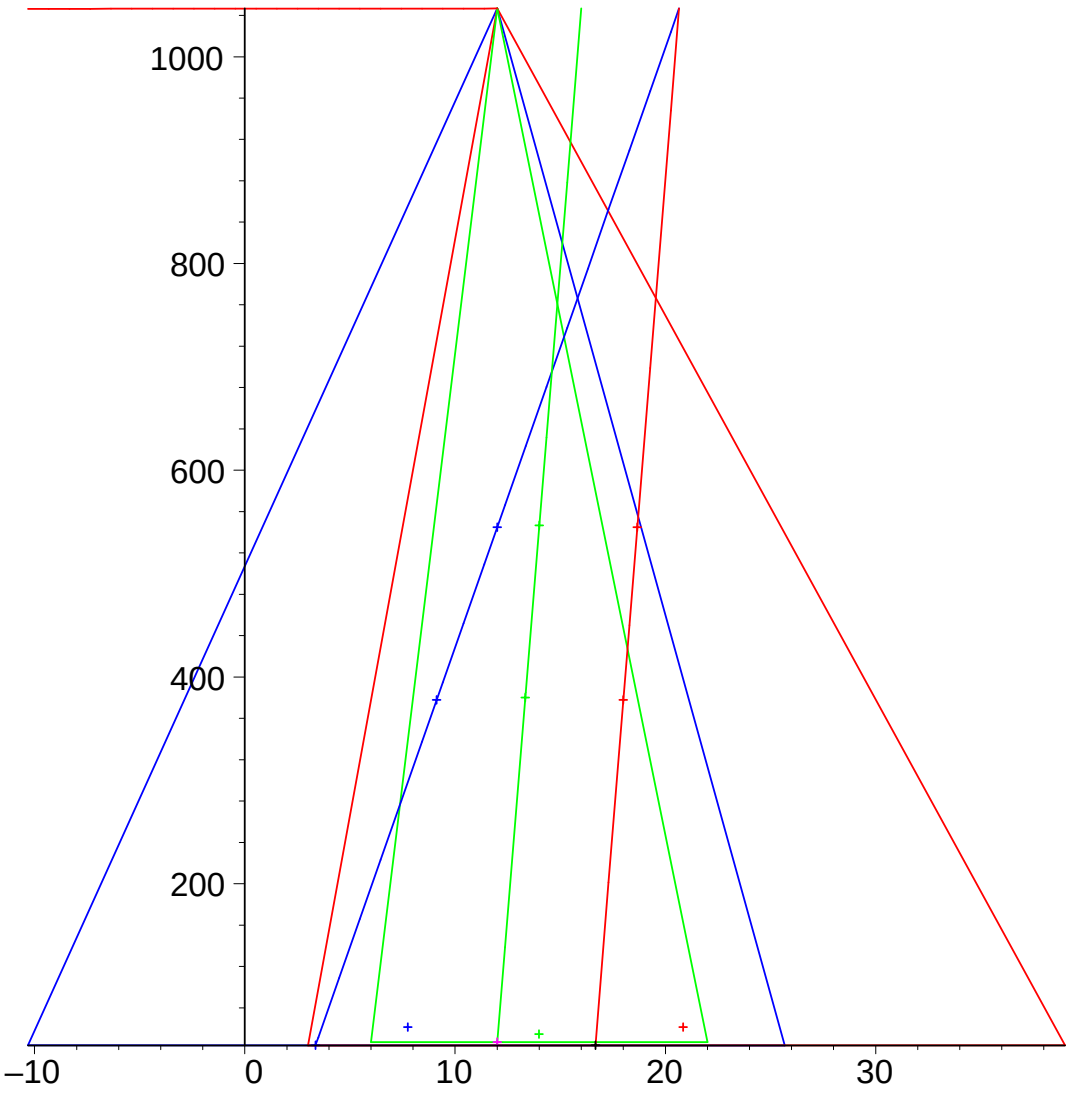
{$y = 0.$, $x = 16.50222337214305507015598066797658395951890614151087277185557483\$
2758242176190744 }

{$y = 0.$, $x = 2.60343815023717667512848615583906713633780346831444567162141736 2\$
2580765233913090 }

{$x = 20.64964744990034416793628899289503744086795008483487505608612556304 63\$
04131832799, $y = 1046.56229531958195927264552343616955917973122188682114220 6\$
2910754763816274610561 }



name of the object: T3

form of the object: triangle2d

method to define the triangle: points

the three vertices: [[-10.319251532708593167911853365176676058287025005132621581\0
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089223608142237429882402764 67], [12., 1046.654004452542236597827866036417157 4
361300563083017716501722511328159212059988], [25.679803769597615898470053217
436370413800156144513242564723251738929268934531510, 43.4109807153883567629
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> tanto13(7,23,5);detail(T3);
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7, 23, 161, 12.688577540449520380193772746089489791739526627525152530902722021903030963357954175334438 3

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"incircle radius", 7.936234792159395926181303367307629271083648584660009655751327718603398044391925603632924 03

"circumcircle center", [14.000000000

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"circumcircle radius", 503.48763632206030595507435226254803522481750894126367447\
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4, 31

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[31, 39.899839117180446770801707702771548996166226801151165847241053175666527\
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[13.177161851522626943313254983934616968763740191860798782192480221468292830676\
3492884945961, 40.041460814364562621994436706408019667508038986347109321394\
109499724023152557857557016496 9]

"coordinates of T2"

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42367414708865032722852 9, -52.98706133344009420142242938598134781262967523721\
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0.009755259935264907767233967209633191891037693063065321260626176560530687\
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0.009754950499515808261147408021450655307352921380257490066549530684556633\
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"incircle center", [7.735306231212433343080075774245486406348728522515864828059\
76172571240208254619707286843094, 53.198386450912011012173969588728818377357\
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"incircle radius", 13.320078068910736426184527702496969847955752550201344989564\
97379691489598444993781222481 00

"circumcircle center", [12.000000000000000000000000000000000000000054422789095\
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"circumcircle radius", 503.4876363220603059550743522625480352248175089412636744\
626446134952236485590911104013045 90

"CENTRES, y=0"

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613435892061442124269203 06}

{$x = 12.87998317280553191947622864810664177512795479089595148214882516248 04$\
281299291065182322063, $y = 0.$}

{$y = 0.$, $x = 2.669337229331393628452150940487547662562250798448485015924340099$\
553362245237675243693817 17}

{$x = 20.647223435791462799768747033563980335104946891471239092121230094477 7$\
172788335659411952336, $y = 1046.54764591028883425431329228670324425276233058$\
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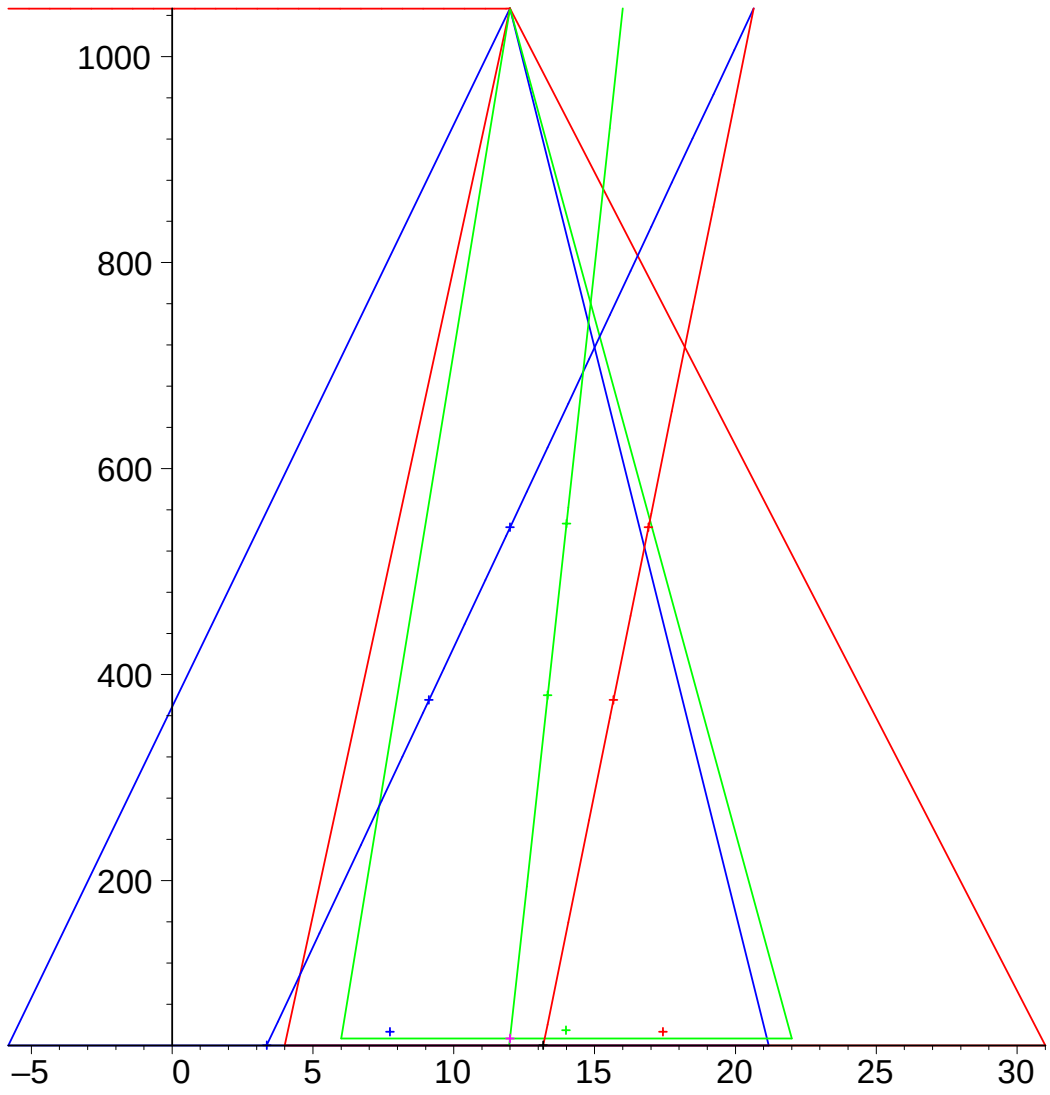

name of the object: T3

form of the object: triangle2d

method to define the triangle: points

*the three vertices: [[-5.8206086622110550981824194061476160656065806931551900152\
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21.178414704272720523743747220666364384005665318231831951629471834334385 83\
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00811270072594660375176568141608 7]]

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> tanto13(7,23,6);detail(T3);
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7, 23, 161, 12.688577540449520380193772746089489791739526627525152530902722021903030963357954175334438 3

"incircle center", [13.983999168964476667486456492123900210617771141495462150537510243056110150646390718834163 9, 54.676178483351405546800167018272730117882742823847396103151443693528847903900350045048678 9]

"incircle radius", 7.936234792159395926181303367307629271083648584660009655751327718603398044391925603632924 13

"circumcircle center", [14.000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000242, 546.666971493468377990941685819821999915616317260827134009593433706771224670447355221419990]

"circumcircle radius", 499.991033046811759507015676270722131311269423423424943927102838000309750110634364900941344

[6, 46.739943691192009620618863650965100846799094239187386447400115974925449\
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[12, 1046.654004452542236597827866036417157436130056308301771650172251132815\
92120599746413364945]

[22, 46.739943691192009620618863650965100846799094239187386447400115974925449\
85950842444141575 41]

$$0.7\ 10^{-87}$$

7999.312486090801815817672019083616452714647696552915081622177081263123770\
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$$\left[\frac{40}{3}, 380.044630611642085279688531112782453043242748262225514848324161027555 6\right.$$

$$\left.0697500477100549365 0\right]$$

[11.999999999

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5, 26
[5, 40.997054378805893632146126098733122342418768505275964635754748417860487/8924063962449964521]
[12, 1046.654004452542236597827866036417157436130056308301771650172251132815/92120599746413364945]
[26, 41.121248043463487301029405731306742149743510257812186781913955604908693888034602793068497]
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[43/3, 376.257435624937205843667799288819007309430778357129974355946985051861700994794872390480017]
[17.946373136657475865870538276295453289906528891559438956914778969261277459641707827632744, 41.177306312676725609753008123011638756561588714066537100647028764413564715998609881356281]
"coordinates of T2"
"slopes", 143.665278581962334709383105705383433584815898257575115287773928959/27934761622729541266471, -71.82376831493419637834274716465074394902761043217782749058987825199337337985449009575578210.001047641677697417094000157362315691600894322506563581664741488987878631/55247080649503177908
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"incircle center", [14.421479360067953507623897520270946191939393560963300888226556921879974065127745571074026951, 51.447123095611853040890652446133507112168437369871900190522558568758717336866811540789195]
"incircle radius", 10.391085483762008626811352847820142175813236331485669937457/5336228967824009715097332721163
"circumcircle center", [12.000000000000000000000000000000000000000065291626170/

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225794271009291691423725091070919854308219268126387085]
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264471600618960668977781960072624 07
"CENTRES, y=0"
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2221336298355470816551947 4}
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4787246364623517607597085 2}
{y = 1046.60379047650828961563846503355247543482298904085338284743052700530\
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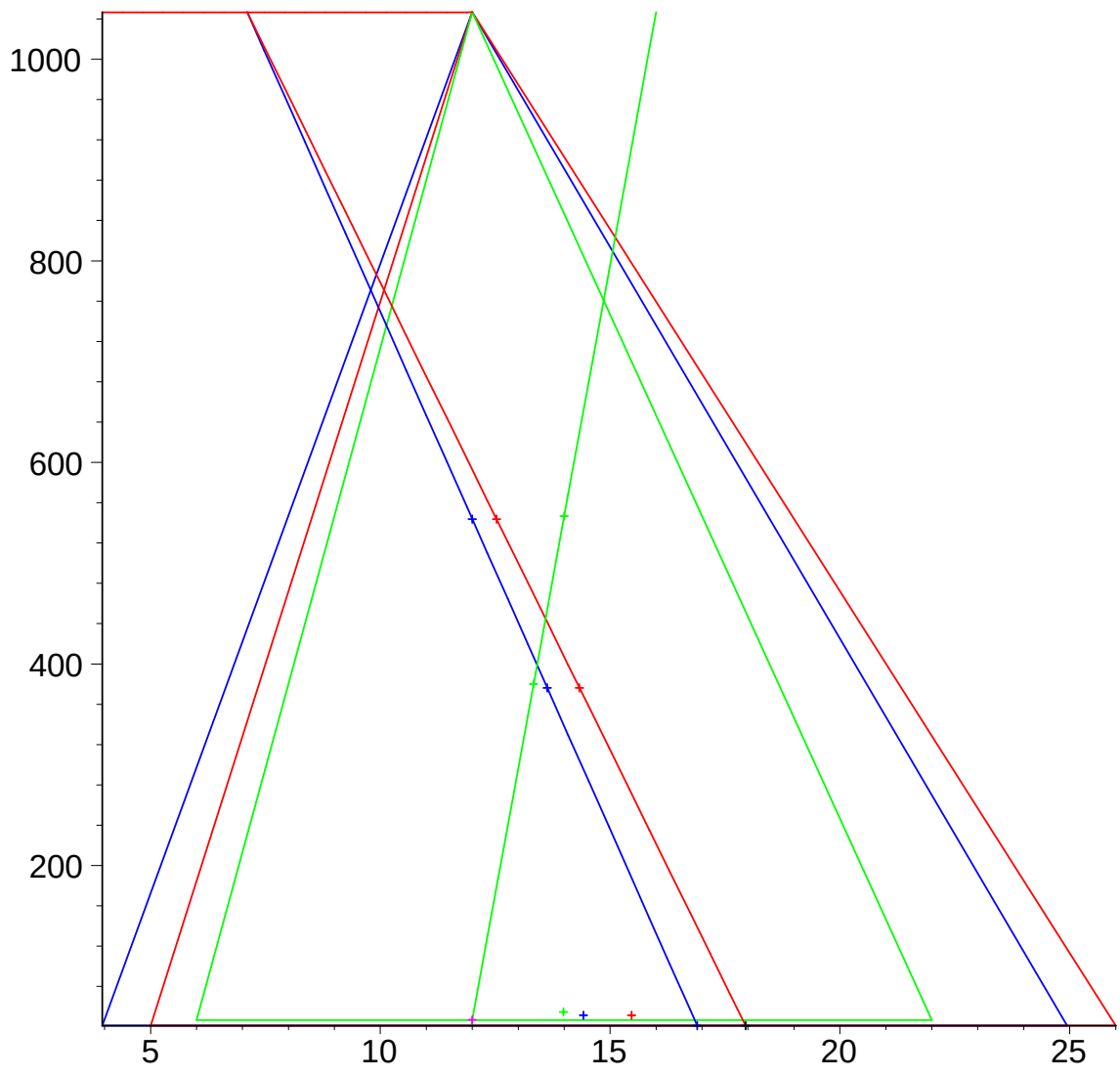

name of the object: T3

form of the object: triangle2d

method to define the triangle: points

the three vertices: [[3.946436285242320127458316118207166832586487229128420662966
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[24.946554871332215374898815334253801573856190446527216703606655266139703 6
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> tanto13(7,23,7);detail(T3);
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95\
8629960]

[22, 46.73994369119200962061886365096510084679909423918738644740011597492\
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98\
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$$0.10\ 10^{-146}$$

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63\
0325

$$\left[\frac{40}{3}, 380.04463061164208527968853111278245304324274826222551484832416102755\right.$$
$$\left.56\backslash\right.$$

069750047710054937141778334812812007123757430043170068864467207174320\
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4107660]

[11.99999999999999999999999999999999999999999999999999999999999999999999999999\
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103151443693528847903900350045048678533734778324524249452964743170299258 8\
71873082455200654412812 9]

"incircle radius", 7.936234792159395926181303367307629271083648584660009655751 3\
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003621295640111952

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902769620436317040192032027 0]

"circumcircle radius", 499.991033046811759507015676270722131311269423423424943 9\
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$$6,\ 22$$

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[12, 1046.654004452542236597827866036417157436130056308301771650172251132815\
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[22, 46.739943691192009620618863650965100846799094239187386447400115974925 44\
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0325

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$$94107660\right]$$

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5952708

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5953286

"incircle center", [10.016000831035523332513543507876099789382228858504537849465\
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10315144369352884790389388519254400590263392970809246796141351064206892115\
28711590995678415151625 8]

"incircle radius", 7.936234792159395926181303367307629271083648584660009655751 3\
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74513319094340462443102968 40]

"circumcircle radius", 499.991033046811759507015676270722131311269423423424943927102838000309750110634364900941435814660035876716646829685337464875796912855953411915276002763

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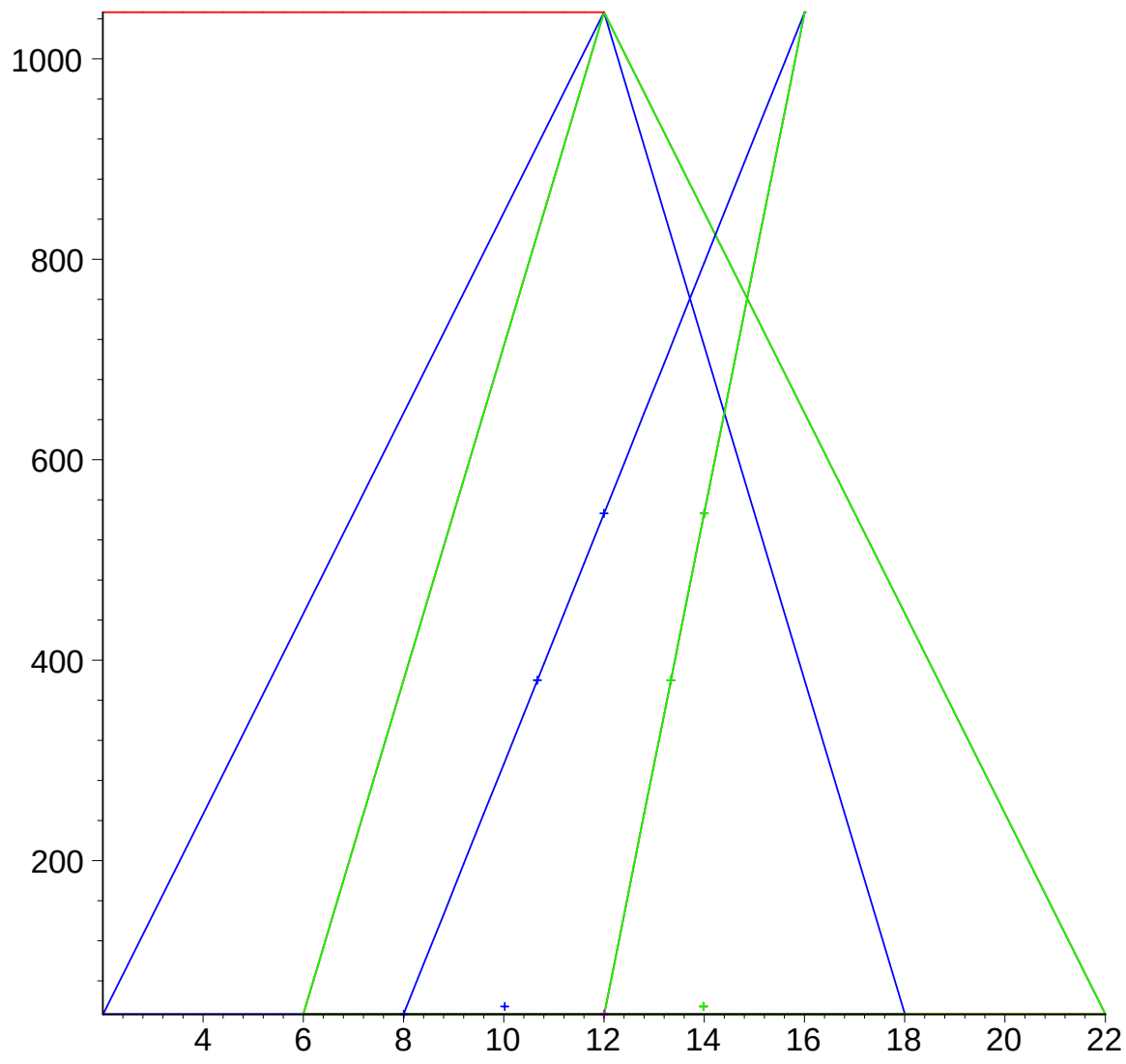
{$y = 0.$, $x = 11.81275040469640475500942466700663882083464474330002465543690922$61343589206144212426920830273180141740072808060672217873832644781398279014426384183231}

{$y = 0.$, $x = 7.625987808773078885132068290743770704729121172743307232831682899$36291687764877887058534586955682257601785013542161812100449844914350523196999712393815}

{$x = 16.000384115695303276250869528086634170645024626290703080488374767024009811604153609860748299048892568830356765339934716297921157719599680328241965977$, $y = 1046.62999752342857945192285176539602429130375470278808073268570018655373185283239167146917667637121606744564636806023122901104341840914165660945330628}



name of the object: T3

form of the object: triangle2d

method to define the triangle: points

the three vertices: [[2.0003200281213023442261849309172456450476338082414719461\6
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> tanto13(7,23,8);detail(T3);
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7273011788274282384739610315144369352884790390035004504867853373477837]

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"circumcircle center", [14.000000000000000000000000000000000000000000000000000000\
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[6, 46.739943691192009620618863650965100846799094239187386447400115974925449\
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[12, 1046.654004452542236597827866036417157436130056308301771650172251132815\
921205997464133649633888497180]

[22, 46.73994369119200962061886365096510084679909423918738644740011597492544\
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$$0.5\ 10^{-97}$$

7999.312486090801815817672019083616452714647696552915081622177081263123770\
771912317537871036527964430

$$\left[\frac{40}{3}, 380.0446306116420852796885311127824530432427482622255148483241610275556\backslash\right.$$

$$\left.069750047710054937141778334773\right]$$

[11.999999999999999999999999999999999999999999999999999999999999999999999\
999999999999999999999999999654, 46.799948847989499857182221698703359298495610\
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"incircle center", [12.99599612094097923911474767696596582174204354244261287759\

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{ $y = 0.$, $x = 78.45429349363352921047315047553452499019310769893610910339492993$\
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{ $y = 0.$, $x = 20.37745995964526747397610319470368988434159033007278668640891422$\
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{ $y = 1031.26076391201116673912513292853617174710360357111625060590322761389$\
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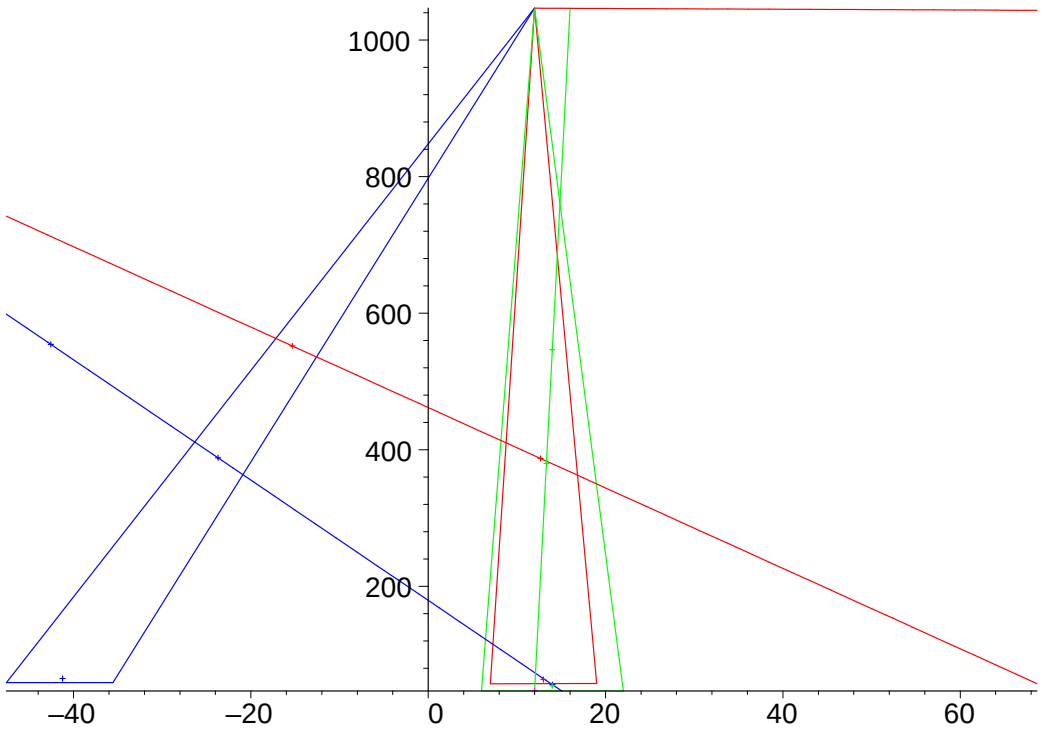

name of the object: T3

form of the object: triangle2d

method to define the triangle: points

the three vertices: [[-47.57241819545088984694543275210184318570162453151202911889
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{ $y = 5584.74250469770849468075359676033538111109451721265204192948470703936$\
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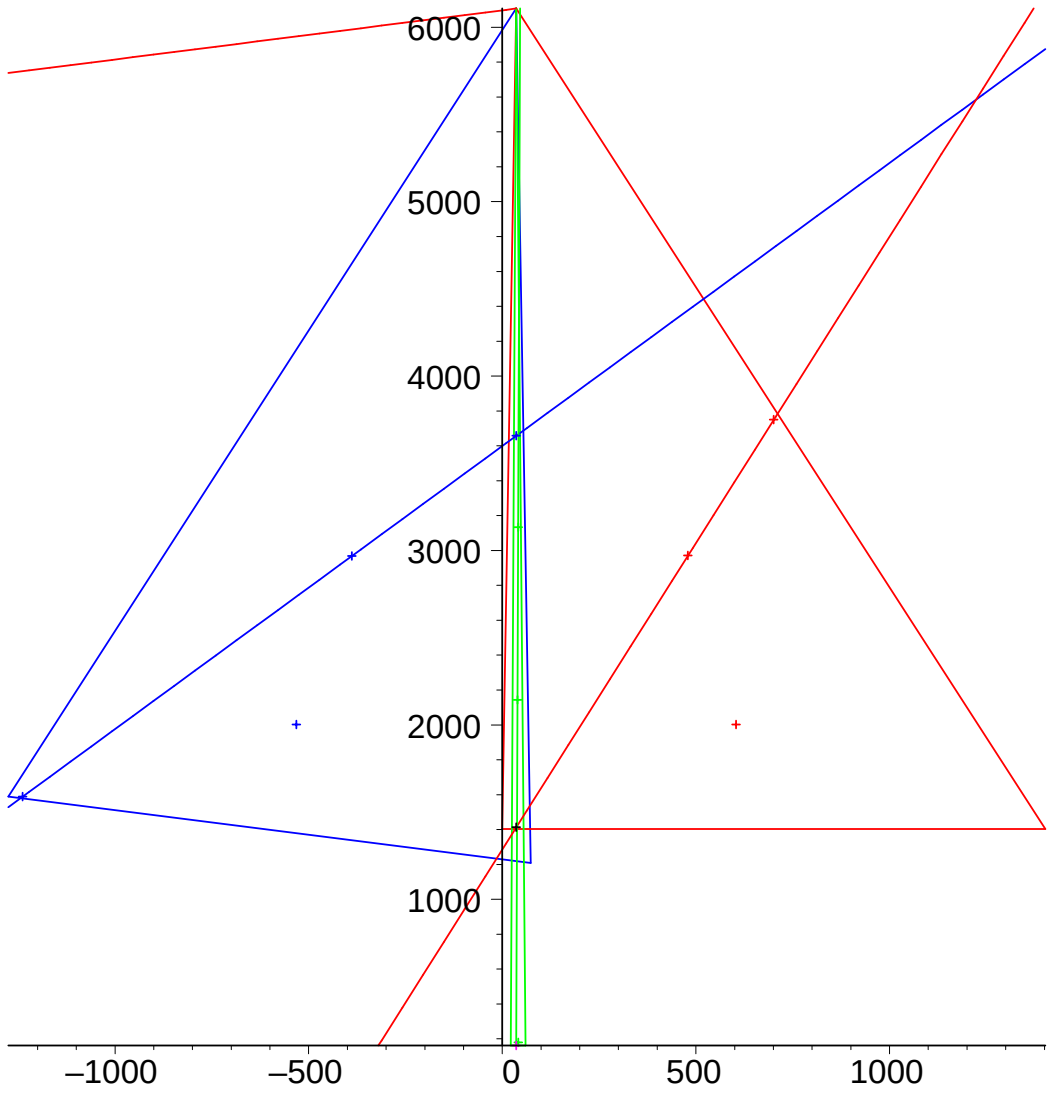

name of the object: T3

form of the object: triangle2d

method to define the triangle: points

the three vertices: [[-1275.865679703188390762015025325386412076509695371808731000
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96]]*

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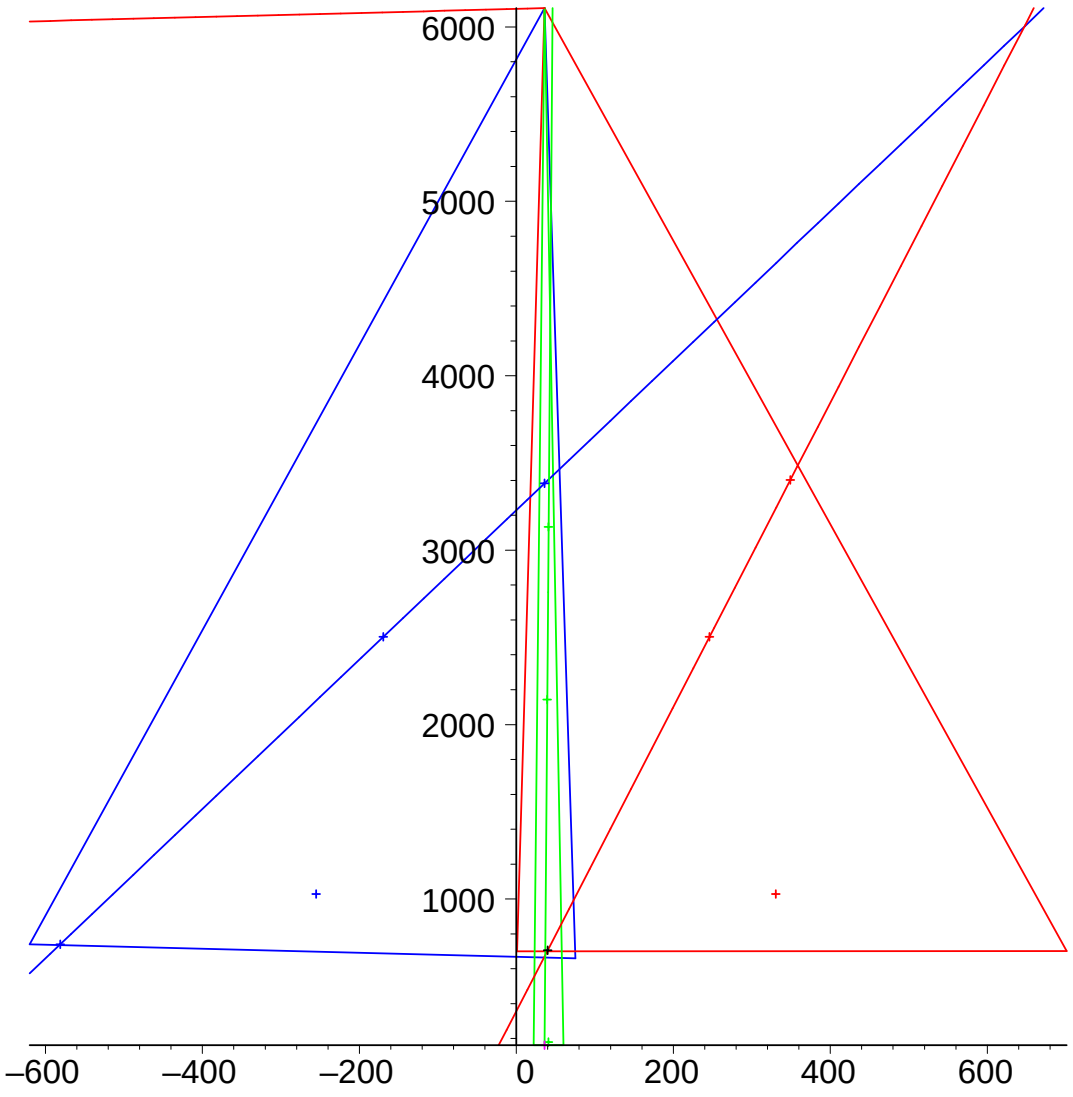

name of the object: T3

form of the object: triangle2d

method to define the triangle: points

the three vertices: [[-620.26434376109987114860498812266853296758174562366867532\27

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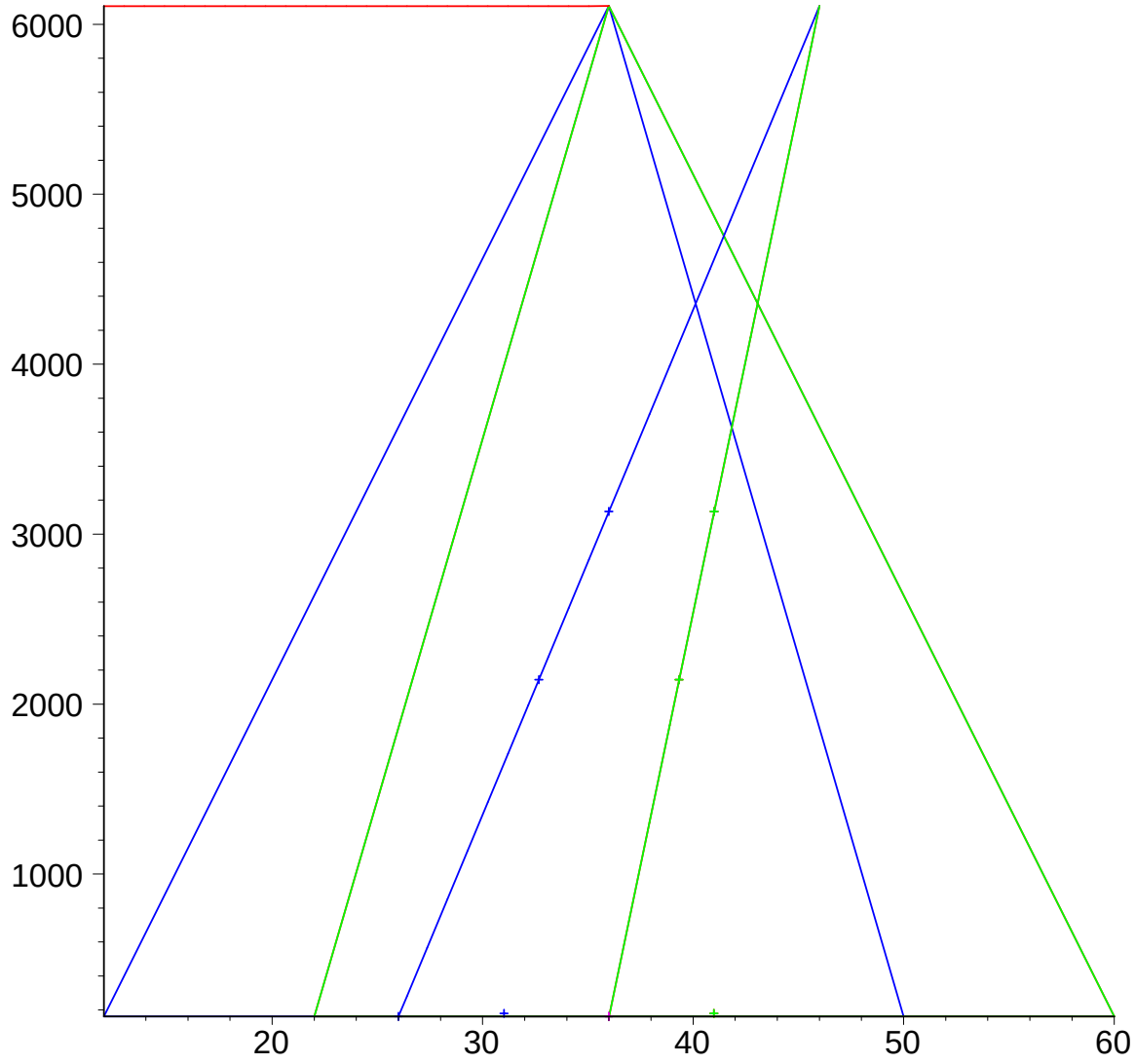

name of the object: T3

form of the object: triangle2d

method to define the triangle: points

the three vertices: [[12.000128966440140145242639002353334227740336975308948747\l

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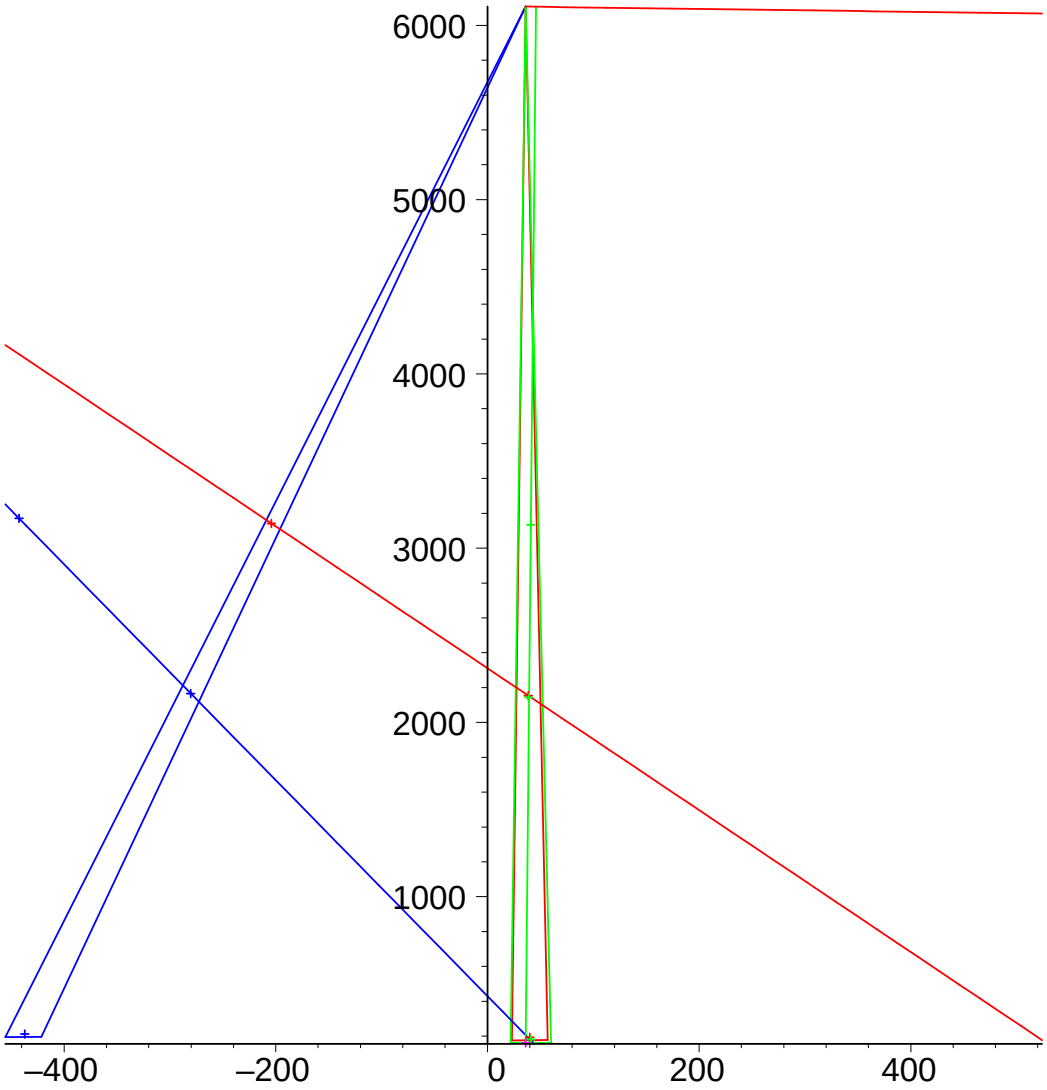

name of the object: T3

form of the object: triangle2d
method to define the triangle: points
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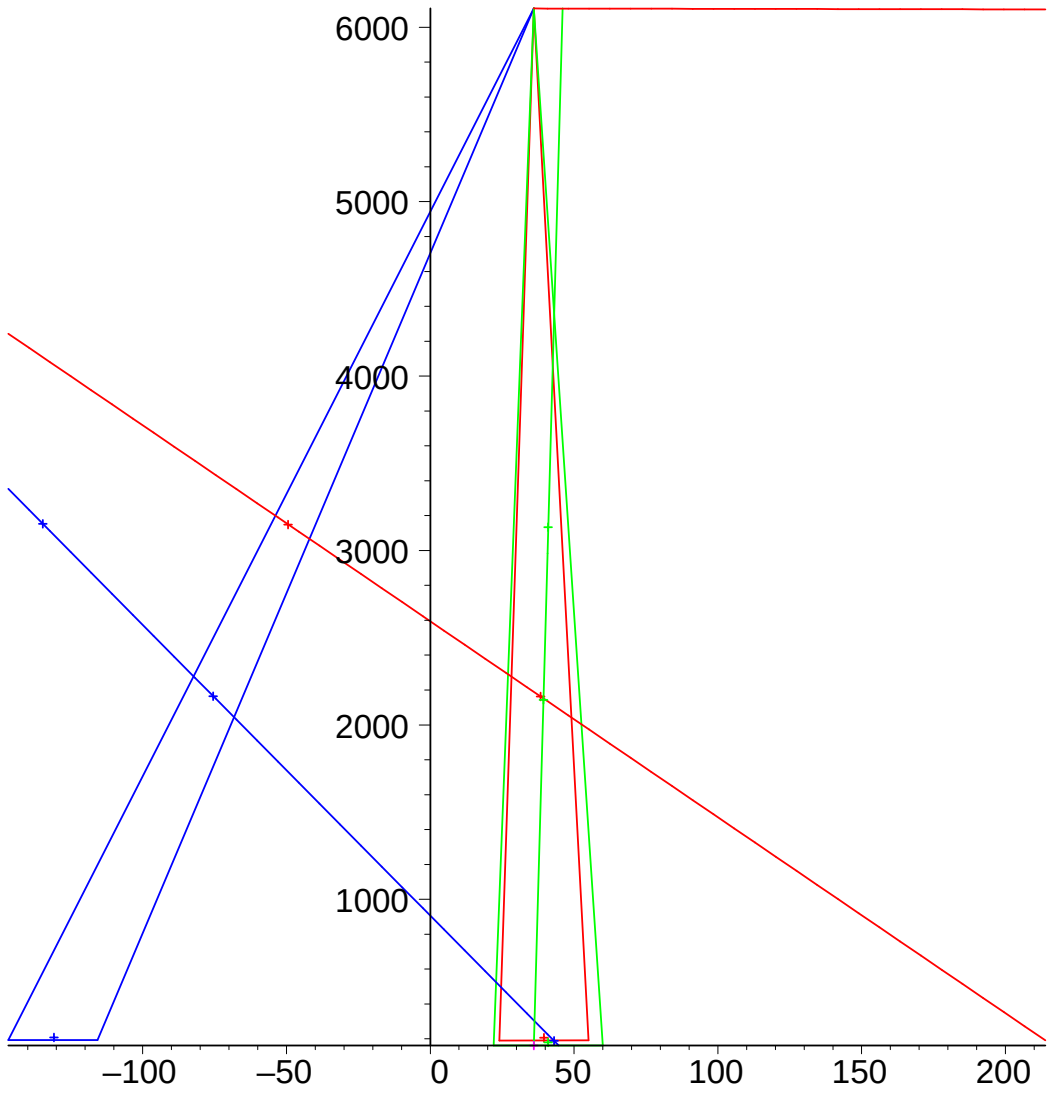

name of the object: T3

form of the object: triangle2d

method to define the triangle: points

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1\
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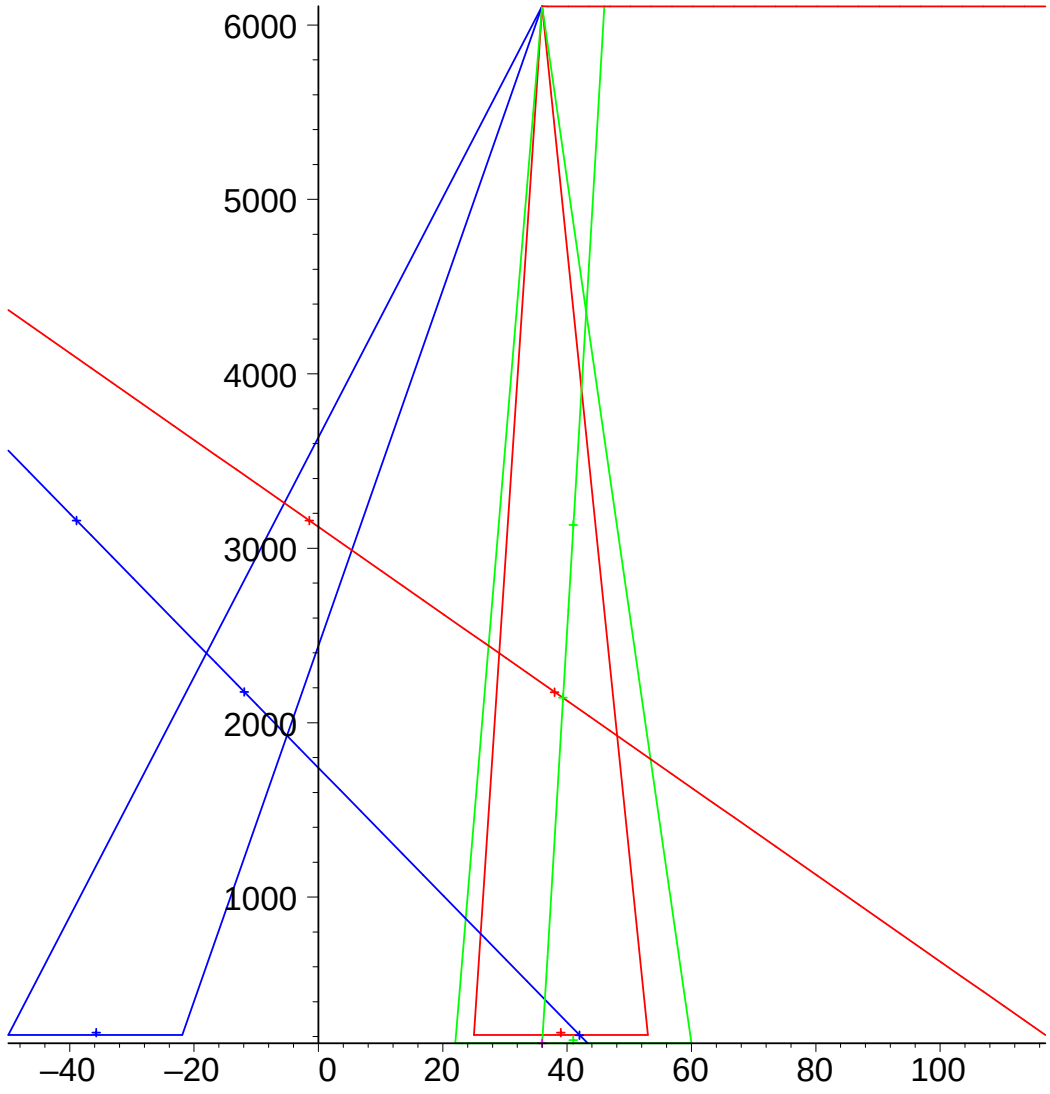
{$y = 0.$, $x = 47.723396547914909552505118253267792543078202988841250673349091\
69$\
623466590876888339066975595846101620017253048270889606821830885802263552\
6\
129903008489545172061732700470465770679698886908274409618700402974944700\
7\
174888152869998949556511928 6257868534403}

{x = -119.605013582458936424276060527037769638865008302679235946872207607756\
4011674165752513739452411528213774587697426364496860188263329294977709261\
7863895889756694680505101880052566935759688158598406177827763847526123409\
60392747761142550055459920735870676, y = 6102.150463496022561918139596941128\
3571205812567782014275507554585790240040844956046805692979405840906448386\
7478593678846268626094721303094813598727767054159350982289382982637746318\
1226508669347509166880089608070911785748337164159069576564491836885754 }



name of the object: T3

form of the object: triangle2d

method to define the triangle: points
*the three vertices: [[-49.899639177812607909475251028080611393458730312258340259\
952751863514714860309226920229352024514805242293857079544876242324519547755\
815368638923455364417056240378334964931382275618773951451752942675192711 0\
116276849098560048551215598903151405869413899 98, 209.573766867819864839472 7\
023207064386875398626226141355888179084789988172228028121986247959291151 4\
838429096088084120590287960291727052974209002879686120256019138197782421 8\
374203549931621255043052104345231346963449925009434934676219940791247392 5\
06557], [36., 6107.406260807182893109527583449375209780946473183191074263016 6\
012411197779604254710627595096279727739769581945224665794387738962606003 6\
801929860537982506869840770604328309003019955772518965831645618682499641 2\
230712809135868356420310821090064070153595], [-21.897019630196960121836135 6\
749725917556903677707433226735737233667034401436035479999628646014394483 7\
253372844525017616726112586820894633364302515304232281316926270173989381 8\
251988562032787172179573239712651715639559283577974007339382941619792721 9\
595, 209.602256704555237438208114054222347265338652901100009773497927544964\
832253833549586006272713798104703026937185519267451810283033378658198211\
233673716859758619621398330127080518443088477168109879736175968562435574 7\
856569462456850160482323969145383 8]]*

```
> p1:=51;p2:=101;p3:=1;tanto13(p1,p2,p3);detail(T3);
```

$$p1 := 51$$

$$p2 := 101$$

$$p3 := 1$$

51, 101, 5151,

71.770467463992457961232152461082730173679957857360779621600548387549 73

"incircle center", [

74.997754178938305978456242089198173787002354862749220453539782867701 14,

452.144594744227191144826248291542028024527426504373326176493910054993 9]

"incircle radius",

24.985967455735548870406269982472867105266516157046393081884855371957 73

"circumcircle center", [

75.000000000000000000000000000000000000000000000000000000000000000018660,

22690.720676897792740444479808020090612960201114679846980682950057582 88]

"circumcircle radius",

22263.576085993092408376471969693534954524728468468904135704806286531 32

[50, 427.158627288491642274419978309069160919260910347326933094609054683036 3]

[71, 44954.296403559570464266866325639248319944100504725202356853606401810 23]

[100, 427.158627288491642274419978309069160919260910347326933094609054683035 9]

$0.4\ 10^{-66}$

$0.1113178444406776970549811158683254478975620989859446885593974933678180\ 10^{7}$

$\left[\frac{221}{3}, 15269.537886045517916271902094085795547260874108473285407680941503725 44\right]$

[70.999999999999999999999999999999999999999999999999999999999999964885, 427.172304340968267926746666217205415862220096060162261676924396010578 4]

"incircle center", [2413.664502952694346215147066339961320383617621640119201112544396592170, 7559.891702177733212155535767531827677242305310827364140180846973566409]

"incircle radius", 2409.362966967069513632884129722315428880761661652452385841207897657835

"circumcircle center", [2574.999999999999999999999999999999999999999999999999999999999999999806, 25047.882734383005604646601153371928578050342532161274085039315761545 78]

"circumcircle radius", 20063.282911038751233209121820991479988629629458015370752375637213570260, 5150

[0, 5150.528735210663698522651637809512248361543649174911754339639075908549]

[71, 44954.296403559570464266866325639248319944100504725202356853606401810 23]

[5150, 5150.528735210663698522651637809512248361543649174911754339639075908597]

$0.48\ 10^{-64}$

$0.1024947017459984349217913528211615703843250839030419983014734658641968\ 10^{9}$

$\left[\frac{5221}{3}, 18418.451291326965953770723200419424272222395934358341955177628184542 46\right]$

[71.000000000000000000000000000000000000000000000000000000000000038220, 5159.588405214886652018967294514415660566502738752477695454253030535793]

"coordinates of T2"

"slopes", 560.616446033083193883721333631404733402571223317609726795971370787347 6, -7.836930039052747935763775288015305389167662306664754991634961080114517

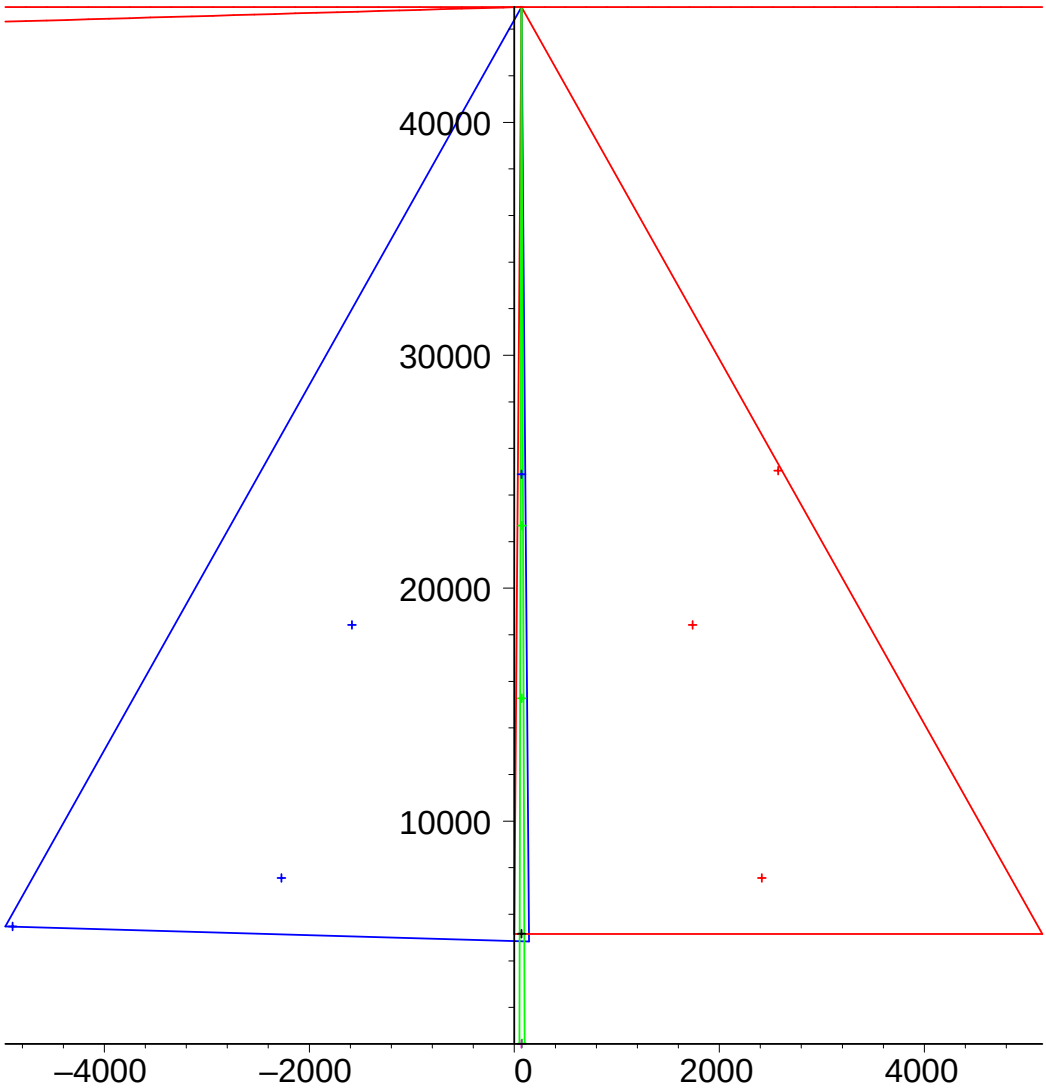
0.125788604698657342699952536499968267849480271749996001382945754865622 7

0.125131391353093773475981155119945554024783583957588966167007188491975 9

"incircle center", [-2271.664502952694346215147066339961368980110586037093694960384805036193, 7559.891702177733212155535767531827680286752199200378297391742920909844]

"incircle radius",

2409.362966967069513632884129722315428880761661652452385841207897657834
"circumcircle center", [
70.999999999999999999999999999997392644181355369163511766796797275660,
24891.013492520819231057744504647768331314471046709831604477969188239 94]
"circumcircle radius",
20063.282911038751233209121820991479988629629458015370752375637213570 26



name of the object: T3

form of the object: triangle2d

method to define the triangle: points

the three vertices: [[-4967.158015328699055608913037185926197695094421243887968\44
2301755694101, 5470.604511735713941214136497734022846581720940203168858905\4
3625757148], [71., 44954.296403559570464266866325639248319944100504725202356\8
5360640181023], [142.575563708569624885875592175571743223496749923229257014\7
54121312504, 4827.858254446739365686878972031033042493879914798116798103990
09458385]]

```
> p1:=101;p2:=103;p3:=1;tanto13(p1,p2,p3);
```

$$p1 := 101$$

$$p2 := 103$$

$$p3 := 1$$

101, 103, 10403,

101.995097921419733298482352971112184692566119623801500546303622728214 2

"incircle center",

[101., 20807.500083871856257936116400908816233932208617765756125482496124660 21]

"incircle radius",

0.999999763236164009246020041995154669533473279137627768643341660368600 9

"circumcircle center", [

101.000000000000000000000000000000000000000000000000000000000001606309,

0.213261525126742612914707664609071635564600858850313686469125151803164 7 10^{7}]

"circumcircle radius",

0.211180875118355427291716909334248611195844132021635566672342803536231 6 10^{7}

[100, 20806.500084108620093926870380866821079262675144486618497713852783000 03]

[

101, 0.424442400245098040206424573943320246760444990871949253141467955339399 7 10^{7}

]

[102, 20806.500084108620093926870380866821079262675144486618497713852783000 03]

0.

0.422361750236687178197031886905233564652518723357500591291696570061099 7 10^{7}

[

101, 0.142867900087306588075069982673164536992099175300282192280336908631999 9 10^{7}

]

[101.000000000000000000000000000000000000000000000000000000000691562,

20806.500084345383957946188013503398470958082002192039027604222896668 78]

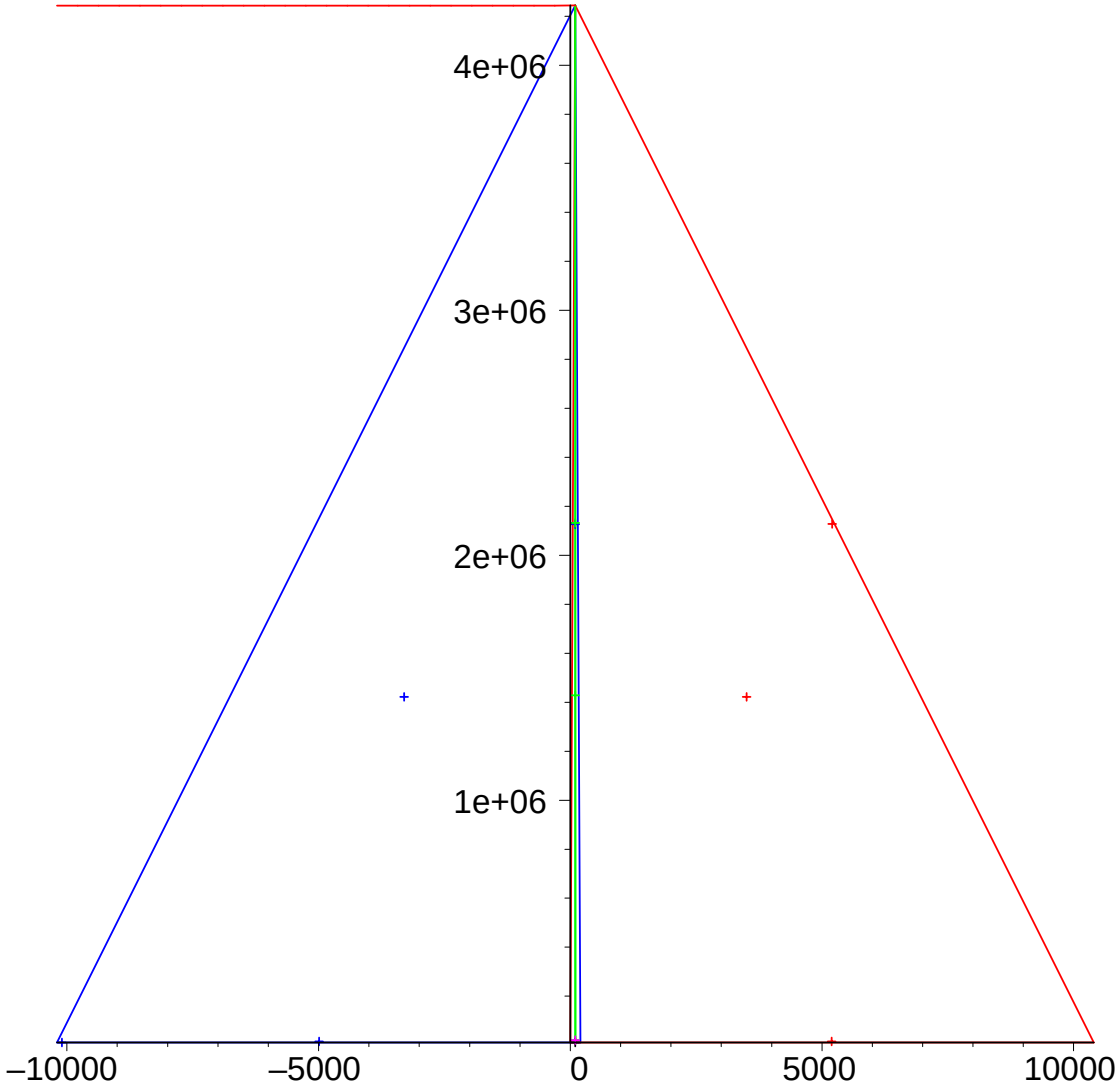
"incircle center", [

5194.735255984032834087791972570093819267865976619380042254458136250049,

15597.131376231495737150416662306225205621472638490825858863129214129 11]

"incircle radius",
5194.611340220919024877116468103958643297065226723705664492023677460971
"circumcircle center", [
5200.99999999999999999999999999999999999999999999999999999999999950085,
0.212741313838145944150030920572028059901053831355444106952934036256170 2 10^{7}]
"circumcircle radius",
0.211701700715614936072159503394520564631828029415047682944026072991936 6 10^{7}
0, 10402
[0, 10402.520036010576712273300194202266562324407411767120194371105536668 03]
[
101, 0.424442400245098040206424573943320246760444990871949253141467955339 3997 10^{7}
]
[10402, 10402.520036010576712273300194202266562324407411767120194371105536668 27]
0.24 10^{-63}
0.220211457300402580616556086564820400456200947323014798637568242373059 7 10^{11}
[3501,
0.142174301417433385182959744660720233357636624118100892393447392148911 1 10^{7}]
[101.000000000000000000000000000000000000000000000000000000000000000000000 0994231,
10402.765760082672488173928381045802708022096434144632744741039343926 79]
"coordinates of T2"
"slopes", 41921.004776385839854970024150881190109327975260472528823963449978785 44,
-411.030140997473043913403789849432113488217212048124008467169056194284 9
0.002409057075029030194948793846420995299047454558617099116148738573149231
0.002409052414679384865180452812823730702396131857803731161348551736054807

"incircle center", [
-4992.735255984032834087791972569861104081551157619888238004551770718280,
15597.131376231495737150416662306224925309796309821030158544550029050 87]
"incircle radius",
5194.611340220919024877116468103958643297065226723705664492023677460975
"circumcircle center", [
101.000000000000000000000000001165008694543162093538148961258414410026,
0.212740699529483104134265070548799682128616961456901570197441882347463 3 10^{7}]
"circumcircle radius",
0.211701700715614936072159503394520564631828029415047682944026072991936 9 10^{7}




```
> p1:=nextprime(45);p2:=nextprime(60);p3:=1;tanto13(p1,p2,p3);
```

$$p1 := 47$$

$$p2 := 61$$

$$p3 := 1$$

47, 61, 2867, 53.544374120910219114530304469301206097236603660798593789735360\
630638961144830802

"incircle center", [52.999999999999999999999999999999999999999999999999999999\
99999999999999999997, 829.743004898495317124284982055269360852752232799101\
295001361716131946155245664 83]

"incircle radius", 6.9958541980153473147322011793735646959001548364492303231993\
039859142769144081753
"circumcircle center", [53.000000000000000000000000000000000000000000000000000\
000000000000000000289185, 6730.586982828793421034725991370454885958155054\
0046097703758196390776189740920600]
"circumcircle radius", 5907.843979158716650771102595721703298411684033722284243\
2080709964685792506968991
[46, 822.7471507004799698095527808758957961568520779626520646781624121460318\
7833125703]
[53, 12638.43096198751007180582858709215818436983908772689401358389063554619\
8224788958]
[60, 822.7471507004799698095527808758957961568520779626520646781624121460318\
7833125632]

$$0.71\ 10^{-75}$$

82709.78667900921071397393064351383671749090906834969364234009756380116442\
5203905
[53, 4761.308421129490003808311382947983258894514414550732714313405153279420\
6604838237]
[52.99999999999999999999999999999999999999999999999999999999999999999999\
99421429, 822.7512977308831693554821661030400047672331356429786021885761816\
8302403326735248]

"incircle center", [1234.658458917894435218621341354899806579889924873338626749\
8798072449154088018581, 4094.5191023971165445543569454269644954695798178314\
717415182306192144373158361836]
"incircle radius", 1227.9801776093021664242542303560225278917791335944664043335\
153188100344773251703
"circumcircle center", [1432.99999999999999999999999999999999999999999999999999\
999999999999999999999999885, 7744.856482111563025148921338679941595146024290\
3365242299396243233744673221947485]
"circumcircle radius", 5084.434205503415270516336974976962461647629217852910362\
9791532748461481902455211

$$0,\ 2866$$

[0, 2866.5389247878143781301027150709419675778006842370053371847153004044028\
385110104]
[53, 12638.43096198751007180582858709215818436983908772689401358389063554619\
8224788958]

[2866, 2866.538924787814378130102715070941967577800684237005337184715300404\
4028385110172]

$0.68\ 10^{-74}$

0.140031212893071639290373151746064028386629910322010104732800182552581927\
88536299 10^{8}

[973, 6123.836270521046276022011339078014039841813485400301562651107078785\
00\
13006036617]

[53.000000000000000000000000000000000000000000000000000000000000000000000000\
00022792, 2881.795847340012777768191339874158929233391875527856228074072589\
6060692574214887]

"coordinates of T2"

"slopes", 184.375321456598031956145771170211626731925252896035635403758025191\
35462992977260, -3.473832931816457765259767462503098548450777960714500062708\
5585976330591490501034

0.282002451515764655728816643788209441996709997201318205383178247926723121\
34225063

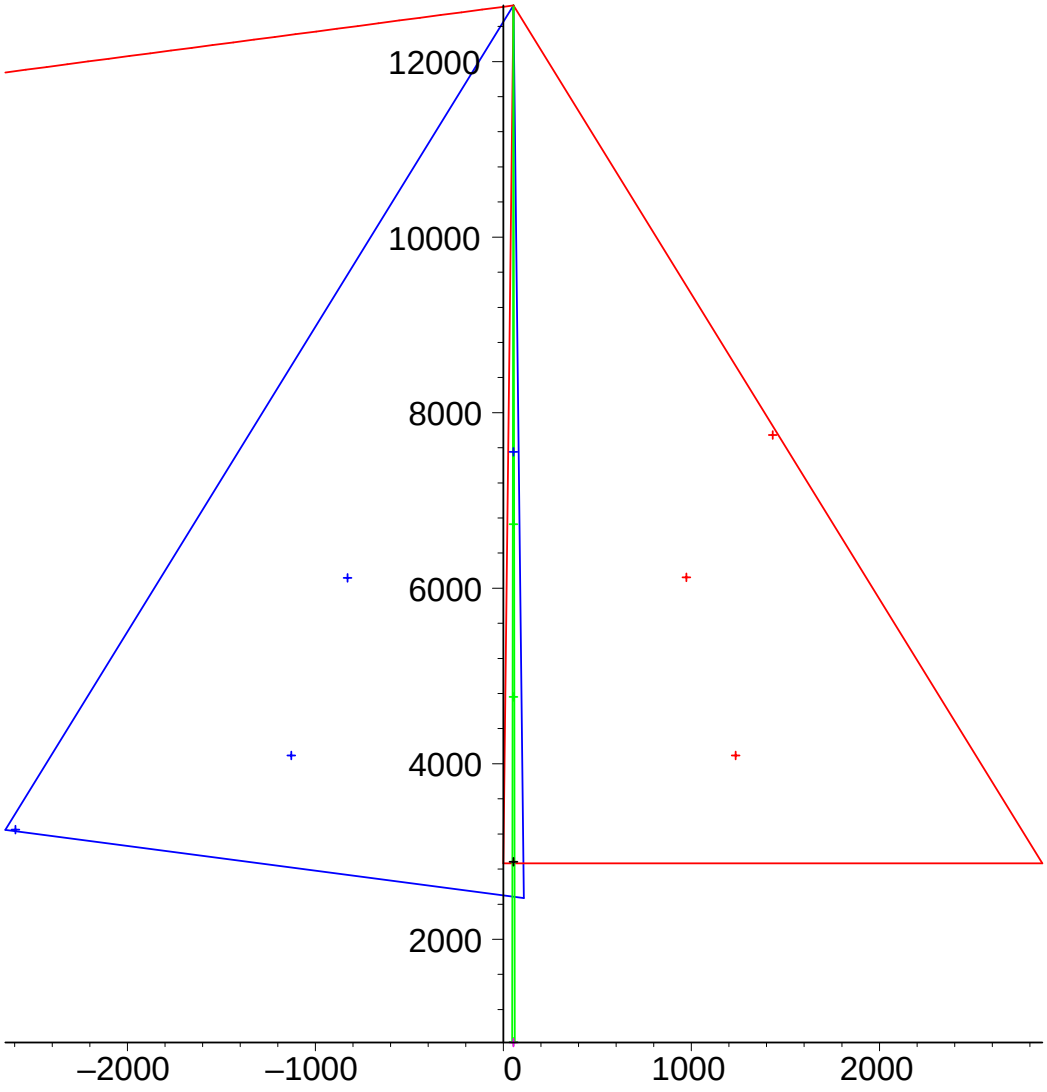
0.274864608720611199040876791167429474666214569743997548682150074389775945\
76496044

"incircle center", [-1128.658458917894435218621341354899806565195281423417781337\
1875413997869665342553, 4094.519102397116544554356945426964495467547487674\
1924910450397546255099745997036]

"incircle radius", 1227.980177609302166424254230356022527891779133594466404333\
51538810034477325 1

"circumcircle center", [53.000000000000000000000000000000000087447002055140752\
20424484880819495895564455, 7553.996756484094801289491612115195722722209869\
87398365060473736070000500345434445]

"circumcircle radius", 5084.434205503415270516336974976962461647629217852910362\
97915327484614819024552 09




```
> p1:=1237;p2:=9743;p3:=1;tanto13(p1,p2,p3);
```

$$p1 := 1237$$

$$p2 := 9743$$

$$p3 := 1$$

1237, 9743, 12052091, 3471.61216151804607080526185950920074796803982404415497\
2070296618622366997635768163722062531900875141

"incircle center", [5488.861888709344508635809152042789122273918122912376681679\
523491837391255578061676718581596725233217, 15471.5832913835093440097006344\
3942412799555617724661972193514300079148394056640518223795557281407617]

"incircle radius", 4252.708933723839533558867350479808939433021303161287546826985\
3515178298431701683443664972403390937999

"circumcircle center", [5488.999999999999999999999999999999999999999999999999999\
9999999999999999999999999999999999999923755, 0.3108237136120619620082372\
1198649130406609803326719405761017280145819909155012484286570439321267788\
68 10^{8}]

"circumcircle radius", 0.3107115277792253069540784702672614743811738105297976233\
8473076448102419593857769982067125306721520 29 10^{8}

[1236, 11218.8743576596698104508332839596151885625348740853321751081576856133\
1855088647217385729831694231381 5]

[3471, 0.6215352407359649458092389211249107848446372858436056606675213371401\
3613470212552862901192286431497 98 10^{8}]

[9742, 11218.8743576596698104508332839596151885625348740853321751081576856133\
1855088647217385729831694231381 7]

$$0.2\ 10^{-94}$$

0.2642912240123627648769654657604678765510272812084660025641560896910629852\
1084478566436461989677360 43 10^{12}

$$\left[\frac{14449}{3}, 0.2072532060743727130684826459301966590494695121803624557703411667646161328041009410212611275092344809\ 10^{8}\right]$$

[3471.000000000000000000000000000000000000000000000000000000000000000000000000\
0000000000000000000000000151289, 11219.0998994215188973513817607369016212470006\
6699252090677897377450215312053137332374596102347669255 1]

"incircle center", [0.5311849340086027611018544853839328239514340137724864056005\
7733248478238728854809872637725844830915122 10^{7}, 0.1736357185138400054893479\
3448212840342675118350423880532201915896397885138525996005080184602099434\
33 10^{8}]

"incircle radius", 0.5311481350807536154493213420040020960139818551539624242388\
6437332865167901060210367303091261217990 90 10^{7}

"circumcircle center", [0.6026044999999999999999999999999999999999999999999999999\
9999999999999999999999999999999999999999920100 10^{7}, 0.3710238992620909013521\
7713832197098039337632097759485597665083430189262881355534303494730076785\
58078 10^{8}]

"circumcircle radius", 0.2576491256837242324054896601943587196422841014528385585

45135769956746365320790416293966985418537392790 10^{8}

0, 12052090

[0, 0.120520905005764643944415800281728193825352997988842562898132721631613683\
6

8348419974968349875475977618300 10^{8}]

[3471, 0.621535240735964945809238921124910784844637285843605660667521337140136\
1

3613470212552862901192286431497980 10^{8}]

[12052090, 0.120520905005764643944415800281728193825352997988842562898132721631\
1

6311136834841997496834987547597765674 10^{8}]

0.3844 10^{-88}

0.3019134932755294878051008043241456236698802986405755891497735419545067190\
4

70495255505857148990905154940 10^{15}

$\left[\frac{12055561}{3}, 0.2875256835824980778993568405627890574984477606070969288212622600\right.$\
1

$\left.34121167223508342665336477461289243400000000 10^{8}\right]$

[3471.000000000000000000000000000000000000000000000000000000000000000000000000\
0

0000000000000000000159809261, 0.120529252223312430993716245044425211708590639\
8

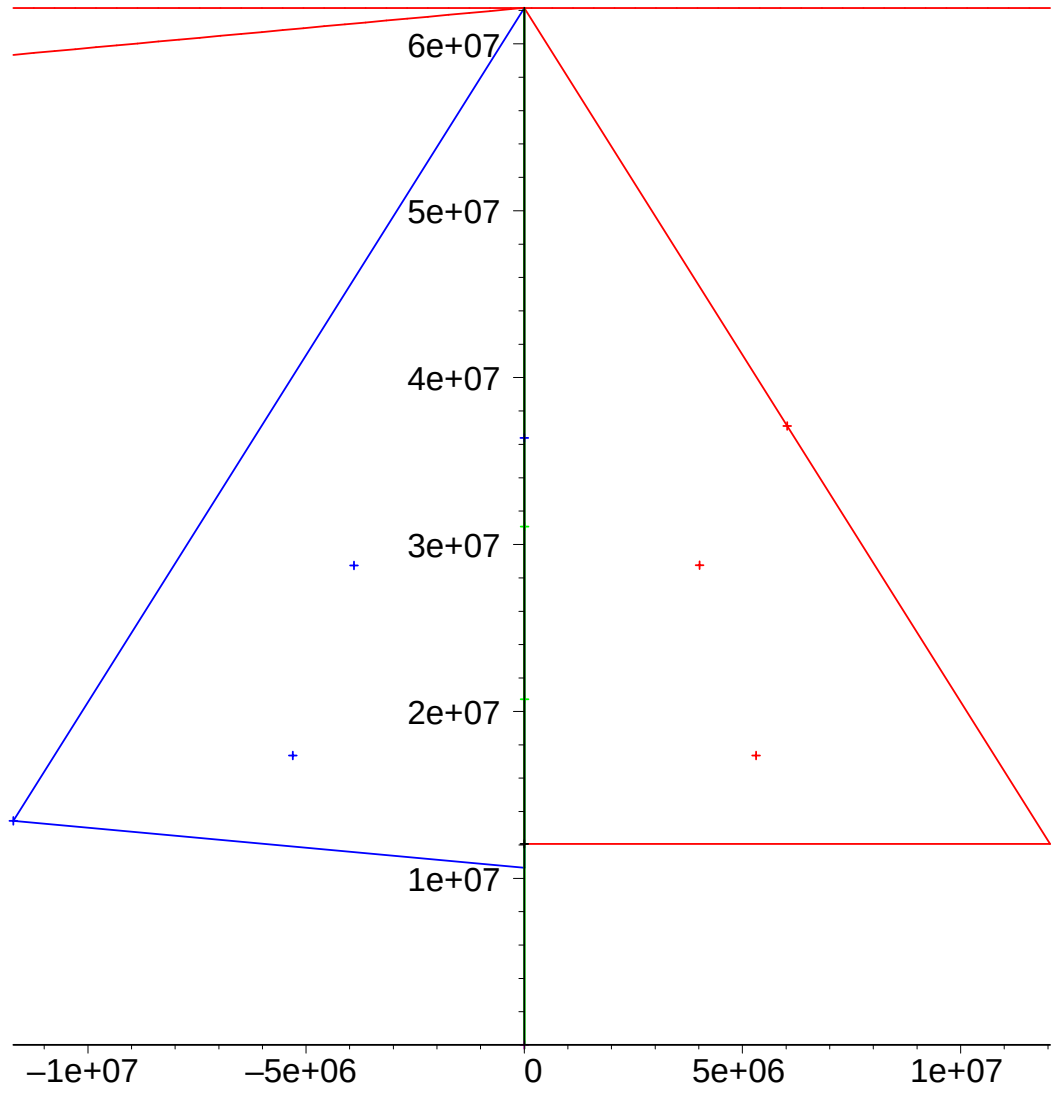
6610107451048511179857824404341434192611483084815611450000000000000000000000\
0

0000000000000000000000000000000000000000000000000000000

19 10^8]

"circumcircle radius", 0.257649125683724232405489660194358719642284101452838558\

4513576995674636532079041629396698541853739280 10^8




```
> Digits:=100;p1:=nextprime(34535453557357476867834464267);p2:=nextp
rime(6574853557357476867834464267);p3:=345354535573574768678344642
73;tanto13(p1,p2,p3);
```

$$Digits := 100$$

$$p1 := 34535453557357476867834464273$$

$$p2 := 6574853557357476867834464297$$

$$p3 := 34535453557357476867834464273$$

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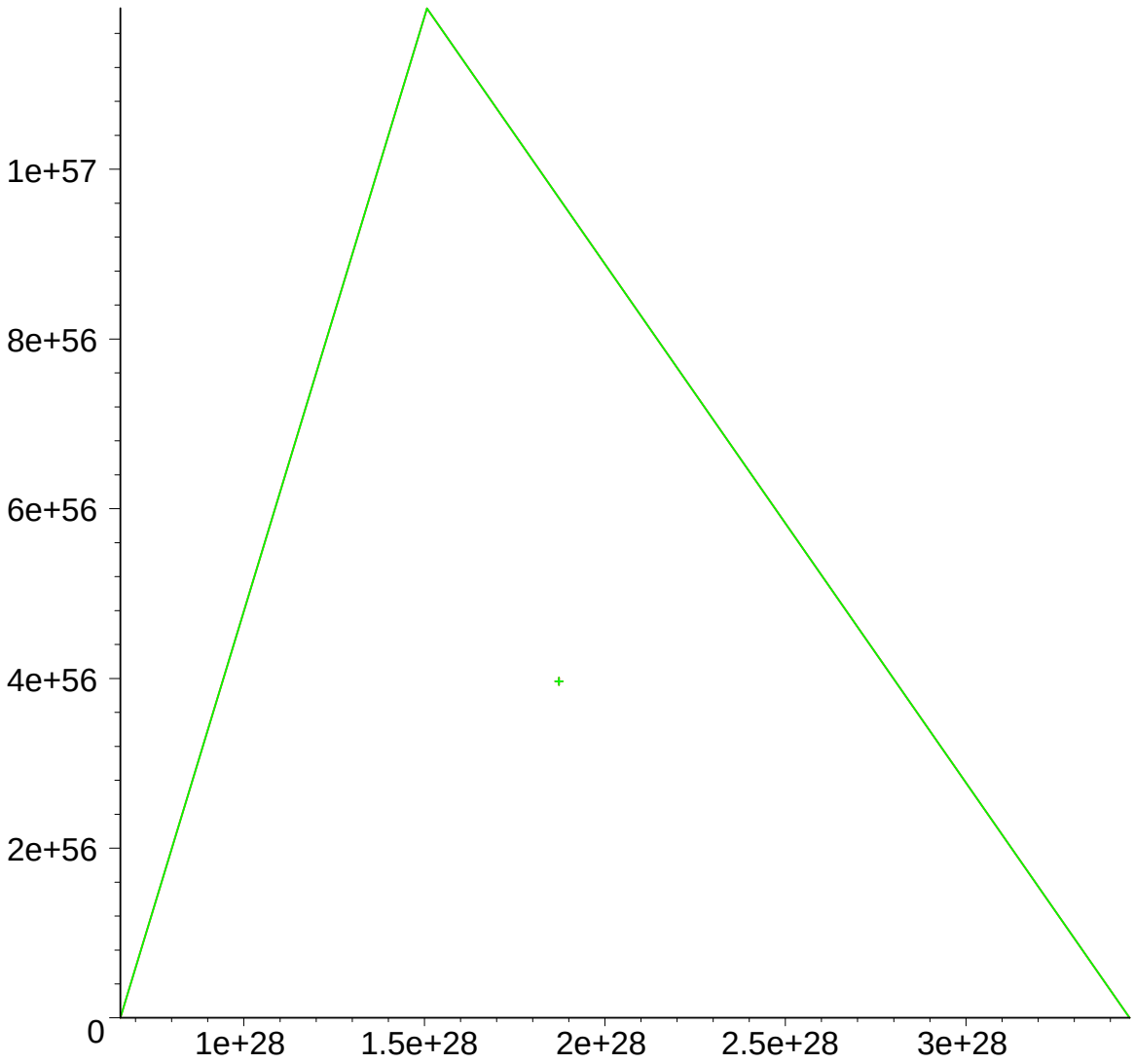


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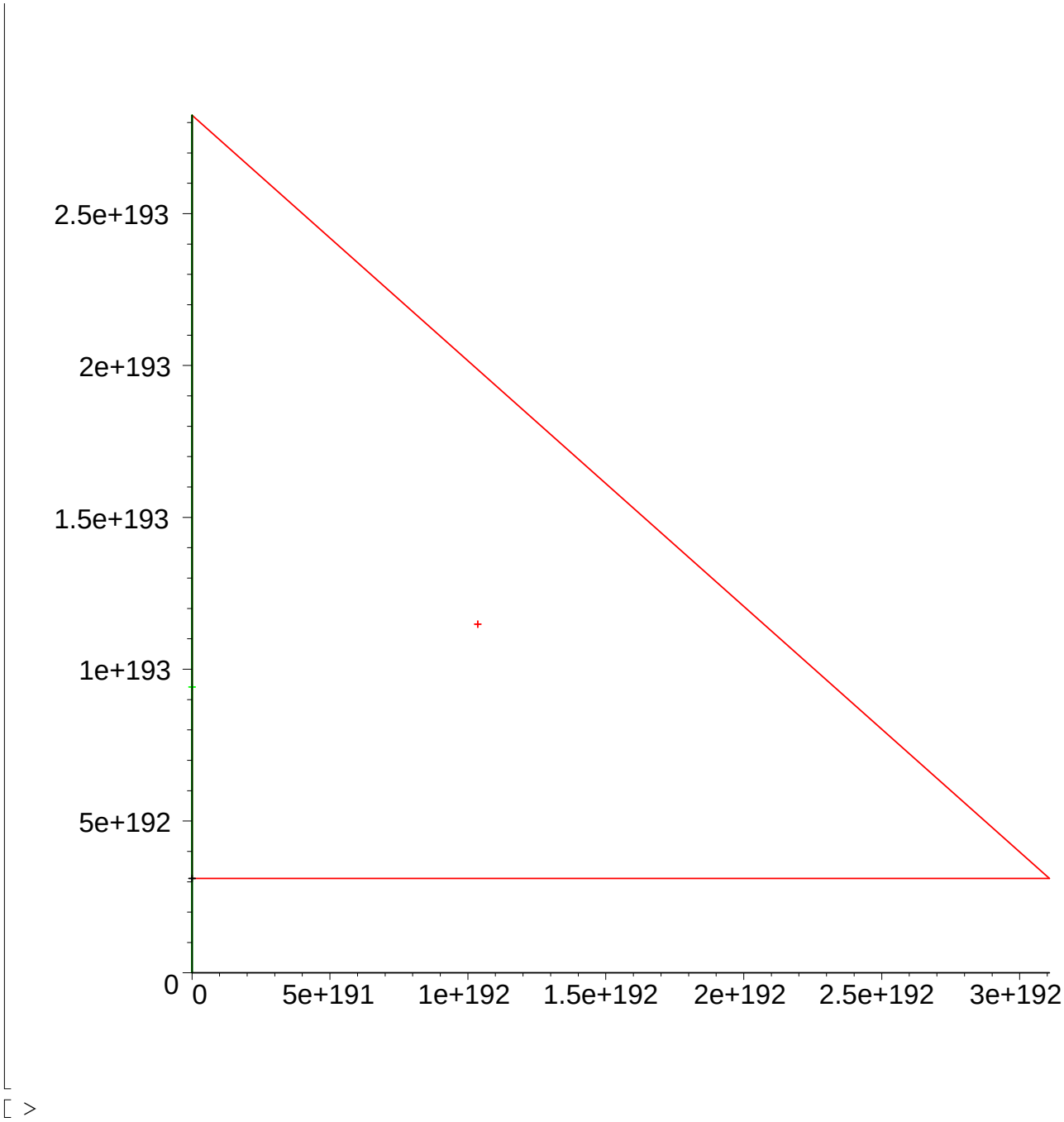
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