```
> restart;Digits:=30;with(geometry);_EnvHorizontalName := x;
  _EnvVerticalName := y;
```

$$Digits := 30$$

[*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*]

$$_EnvHorizontalName := x$$

$$_EnvVerticalName := y$$

```
> tanto_slope_5:=proc(k,p1)
>   local p2, p3, sq, sl1, sl2, pp1;
>   p2:=evalf(k/p1);
>   sq:=evalf(sqrt(k));
>   sl1:=sq/p1;
>   sl2:=sq/p2;
>   pp1:= p1*2+1;
>   p3 := ((k/pp1)-1)/2;
>
>   line(Y,y=x,[x,y]);
>   line(_Y,y=-x,[x,y]);
>   line(SQh,y=sq,[x,y]);
>   line(SQv,x=sq,[x,y]);
>   line(P1h,y=p1,[x,y]);
>   line(P1v,x=p1,[x,y]);
>   line(P2h,y=p2,[x,y]);
>   line(P2v,x=p2,[x,y]);
>   line(LH,y=0,[x,y]);
>   line(LV,x=0,[x,y]);
>
>   point(KK,k,k);
>   point(K0,k,0);
>   point(SQP1,sq,0);
```

```
>   point(SQP1SQ,sq,sq);
>   point(SQP3SQ,sq,sq);
>
>   point(SQP2,sq*pp1,0);
>   point(SQP2SQ,sq*pp1,sq);
>   point(OO,0,0);
>
>   line(AA,[KK,SQP2]);
>   line(BB,[K0,SQP2SQ]);
>   intersection(PP3,AA,BB);
>   point(PP4,HorizontalCoord(PP3),-VerticalCoord(PP3));
>
  point(PP5,(sq*pp1)-(HorizontalCoord(PP3)-(sq*pp1)),VerticalCoord(P
  P3));
>   point(PP6,HorizontalCoord(PP5),-VerticalCoord(PP5));
>
>   circle(C1,[PP3,PP4,PP5]);
>
>   line(A,[KK,SQP1]);
>   line(B,[K0,SQP1SQ]);
>   intersection(P3,A,B);
>   point(P4,HorizontalCoord(P3),-VerticalCoord(P3));
>   point(P5,sq-(HorizontalCoord(P3)-sq),VerticalCoord(P3));
>   point(P6,HorizontalCoord(P5),-VerticalCoord(P5));
>
>   circle(C2,[P3,P4,P5]);
>
>   point(X0,(k/(sq-p1)),0);
>   line(BL1,[P4,X0]);
>   point(X1,(k/(sq-p3)),0);
>   line(BL2,[P4,X1]);
>
>   point(P7,coordinates(intersection(I1,BL1,LV)));
>   point(P8,coordinates(intersection(I2,BL2,LV)));
>   line(RL1,[P7,SQP1SQ]);
>   line(RL2,-slope(RL1)*x+slope(RL1)*sq=y,[x,y]);
>
>   point(X2,k/(p1+1),0);
>   point(X3,sq/(p1+1),0);
>   point(X4,k/(p1*2+1)/2,0);
>   line(ML1,[P3,X2]);
>   line(ML2,[X3,P5]);
>   line(ML3,[P8,P3]);
>
>   line(YL1,[P3,PP4]);
>   line(YL2,[PP4,P5]);
>   line(YL3,[P3,PP6]);
>   line(YL4,[PP6,P5]);
>
```

```
>   print( solve(Equation(BL1),y) );
>   print( solve(Equation(BL2),y) );
>   print( solve(Equation(RL2),y) );
>   print( solve({Equation(ML2),x=0}) );
>   print( solve({Equation(ML1),Equation(BL2)}) );
>   print( solve({Equation(ML1),Equation(Y)}) );
>   print( solve({Equation(BL2),x=k}) );
>   print( solve({Equation(ML3),x=k}) );
>   print( solve({Equation(BL1),x=k}) );
>   print( solve({Equation(ML1),x=k}) );
>   print( solve({Equation(ML3),Equation(BL1)}) );
>   print( solve({Equation(ML3),Equation(_Y)}) );
>   print( solve({Equation(ML3),Equation(Y)}) );
>   print( solve({Equation(ML1),Equation(_Y)}) );
>   print( solve({Equation(BL1),Equation(Y)}) );
>   print( solve({Equation(YL2),Equation(Y)}) );
>   print( solve({Equation(YL1),x=0}) );
>   print( solve({Equation(YL2),x=0}) );
>   print( solve({Equation(YL3),x=0}) );
>   print( solve({Equation(YL4),x=0}) );
>
>   draw([Y,_Y,SQh,SQv,P3,P4,P5,P6,PP3,PP4,PP5,PP6,
>         A(colour=green),
>         B(colour=green),
>         BB(colour=green),
>         AA(colour=green),
>         BL1(colour=blue),
>         BL2(colour=blue),
> #        RL2(colour=red),
>         ML1(colour=magenta),
> #        ML2(colour=magenta),
>         ML3(colour=magenta),
>         YL1(colour=pink),
>         YL2(colour=pink),
>         YL3(colour=pink),
>         YL4(colour=pink),
>         C1(colour=green),
>         C2(colour=green)
>        ],colour=black,axes=normal,view=[-k..k,-k..k]
>   );
>
> end proc:
> tanto_slope_5(33,1);
```

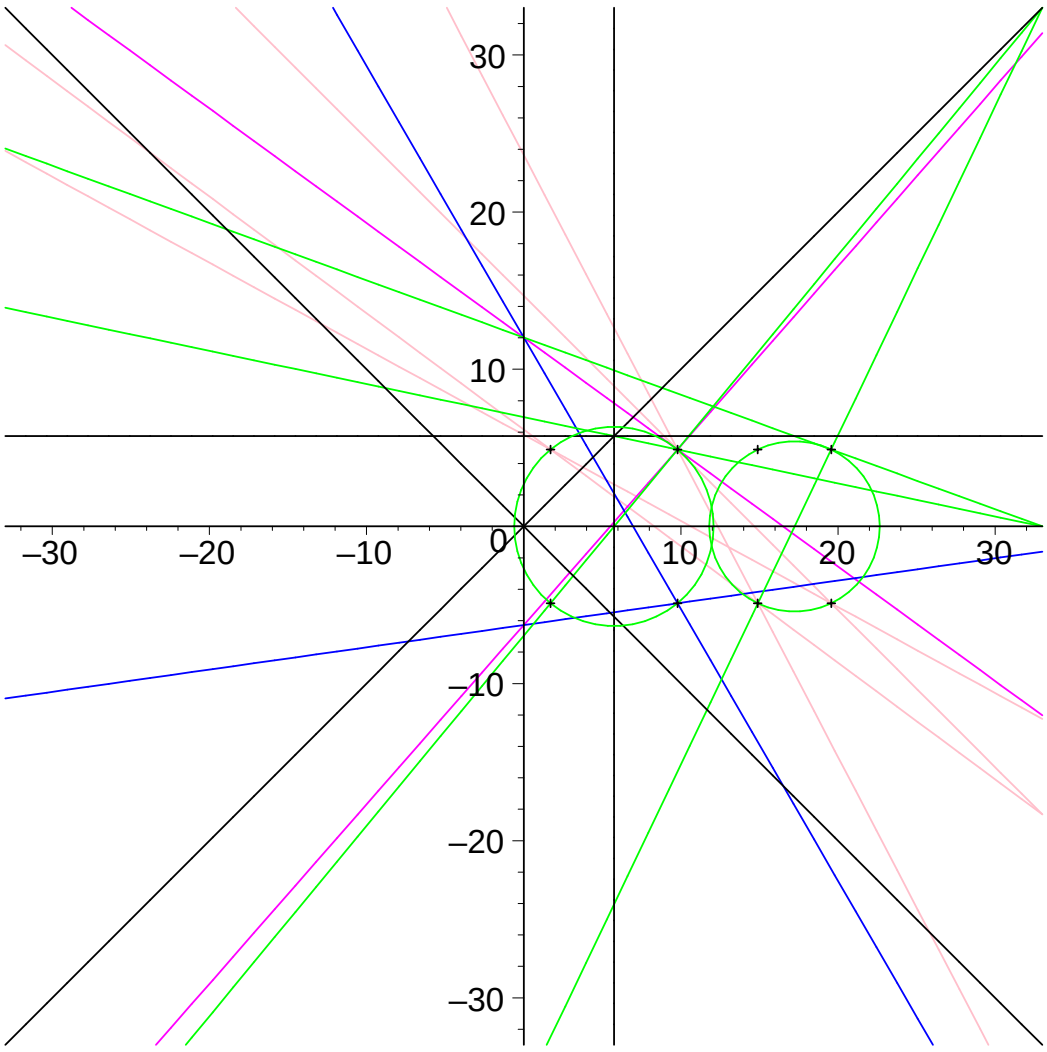
$$12.023773638989789407294590768 7 - 1.728713553878169054987550955 67\, x$$

$$-6.279210992451760747443979300 57 + 0.141674725900320135898905327379\, x$$

$$1.093070330817253582481326433 51\, x - 6.279210992451760747443979300 48$$

$$\{x = 0.,\ y = 12.023773638989789407294590768 2\}$$

$$\{y = -3.299999999999999999999999999,\ x = 21.028528366787747288753508922 5\}$$
$$\{x = 6.955330229242342055470943076 60,\ y = 6.955330229242342055470943076 60\}$$
$$\{y = -1.603945037741196262780103497 08,\ x = 33.\}$$
$$\{x = 33.,\ y = 31.396054962258803737219896502 9\}$$
$$\{x = 33.,\ y = -45.023773638989789407294590768 4\}$$
$$\{x = 33.,\ y = -12.023773638989789407294590768 8\}$$
$$\{y = 1.000659507810793885748319424 78,\ x = 6.376483892574286242933718705 74\}$$
$$\{x = 2.931916278655292756933867884 57,\ y = -2.931916278655292756933867884 57\}$$
$$\{y = 44.321320916969368221883772306 4,\ x = 44.321320916969368221883772306 4\}$$
$$\{y = 44.321320916969368221883772306 5,\ x = -44.321320916969368221883772306 5\}$$
$$\{x = 4.406389091995774927156382387 07,\ y = 4.406389091995774927156382387 07\}$$
$$\{y = 3.764219812408832293112712692 09,\ x = 3.764219812408832293112712692 09\}$$
$$\{y = 14.678490687727026166412829229 7,\ x = 0.\}$$
$$\{x = 0.,\ y = 5.825764118872229963021005014 33\}$$
$$\{x = 0.,\ y = 23.630943409747447351823647692 3\}$$
$$\{x = 0.,\ y = 6.156382595605995423304541060 70\}$$




```
> tanto_slope_5(33,2);
```

$$44.321320916969368221883772305 - 5.029210992451760747443979300 47\, x$$

$$-38.576758270431339562033160839 6 + 3.442172164473911828355333672 41\, x$$

$$6.715351654086267912406632167 48\, x - 38.576758270431339562033160837 3$$

$$\{y = 44.321320916969368221883772294 4,\ x = 0.\}$$

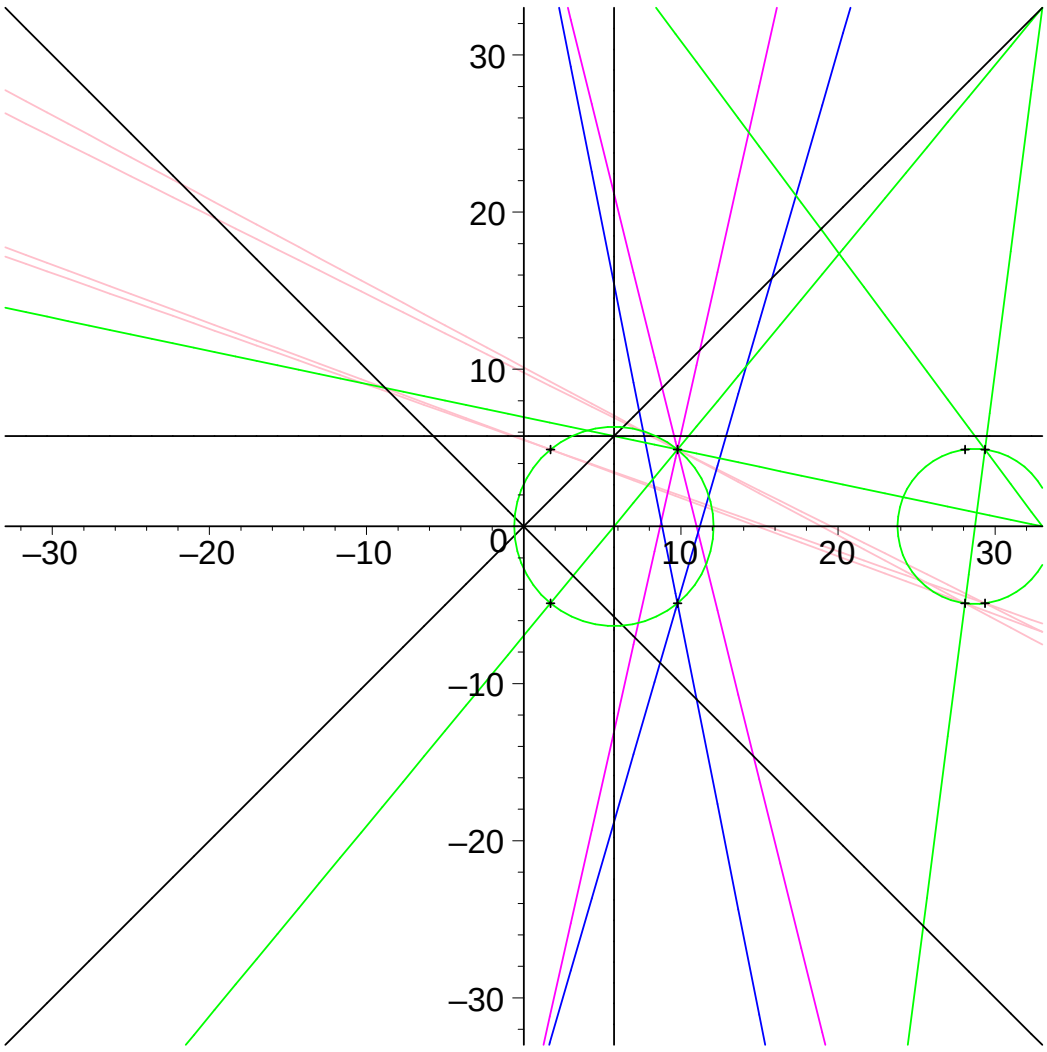
$$\{y = -0.384437695529846401317373528175,\ x = 11.095412649337561102220140728 8\}$$

$$\{x = 8.812778183991549854312764774 20,\ y = 8.812778183991549854312764774 20\}$$

$$\{y = 75.014923157207750773692850350 1,\ x = 33.\}$$

$$\{y = 108.01492315720775077369285035 0,\ x = 33.\}$$

$$\{y = -121.64264183393873644376754461 0, x = 33.\}$$
$$\{y = -88.64264183393873644376754461 40, x = 33.\}$$
$$\{y = 0.30325890903998983719925106 8092, x = 8.75247868383235094792159839193\}$$
$$\{x = 7.08848546215746335517655905346, y = -7.08848546215746335517655905346\}$$
$$\{y = 11.20709727089646048390580995 43, x = 11.20709727089646048390580995 43\}$$
$$\{x = 14.63130862373403050887323156 29, y = -14.63130862373403050887323156 29\}$$
$$\{y = 7.35109800809048062108602839639, x = 7.35109800809048062108602839639\}$$
$$\{y = 4.05921022657402922511132409842, x = 4.05921022657402922511132409842\}$$
$$\{y = 9.78566045848468411094188615320, x = 0.\}$$
$$\{y = 5.49562982073906716282944384580, x = 0.\}$$
$$\{y = 10.12471740704459158244490230 43, x = 0.\}$$
$$\{y = 5.52460641242416873938774206864, x = 0.\}$$




```
> tanto_slope_5(161,2);
```

$$20.940154294208623391258804500 4 - 1.390189210451092361327803810 54\, x$$

$$-8.251576753759103011065031754 75 - 0.149216309860862670908822812858\, x$$

$$0.650315350751820602213006350920\, x - 8.251576753759103011065031754 31$$

$$\{y = 20.940154294208623391258804500 1,\ x = 0.\}$$

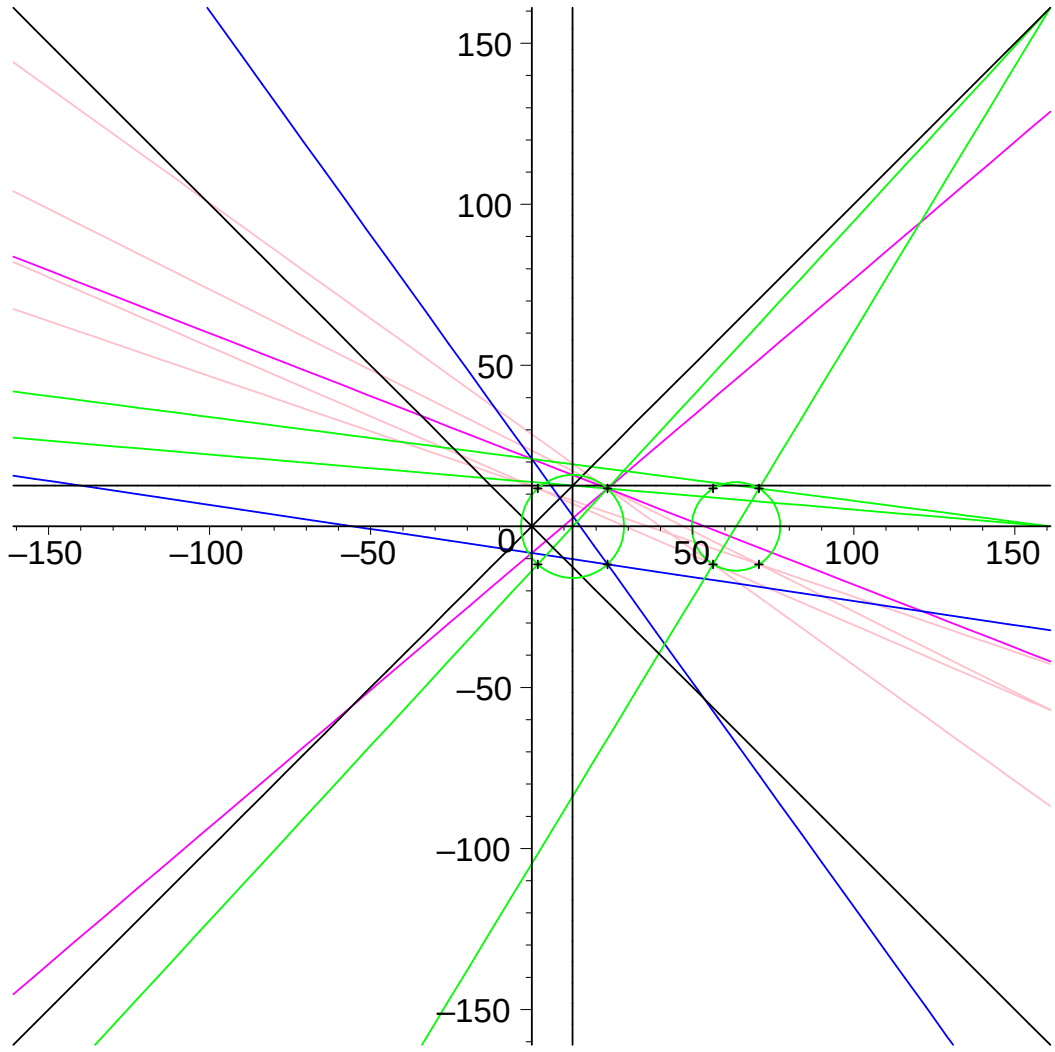
$$\{y = -26.327810117591251858533827210 7,\ x = 121.141136519777248384578505836\}$$

$$\{x = 15.062808815365431727459856128 1,\ y = 15.062808815365431727459856128 1\}$$

$$\{x = 161.,\ y = -32.275402641357993027385504624 9\}$$

$$\{x = 161.,\ y = 128.724597358642006972614495373\}$$

$$\{x = 161., y = -202.880308588417246782517608997\}$$
$$\{x = 161., y = -41.88030858841724678251760900 17\}$$
$$\{y = 2.831042164121571952076854194 35, x = 13.026365040058797229295050986 2\}$$
$$\{x = 4.458423098130268226662822419 03, y = -4.458423098130268226662822419 03\}$$
$$\{y = -55.299429140509625803924203640 0, x = -55.299429140509625803924203640 0\}$$
$$\{y = 34.338773031055389497022653733 1, x = -34.338773031055389497022653733 1\}$$
$$\{y = 8.760877257184446323398982897 79, x = 8.760877257184446323398982897 79\}$$
$$\{y = 9.234913240795703826730015086 72, x = 9.234913240795703826730015086 72\}$$
$$\{x = 0., y = 23.523262300154659765139967651 3\}$$
$$\{x = 0., y = 12.396267528115790297259017019 5\}$$
$$\{x = 0., y = 28.635613075266105772373179635 7\}$$
$$\{x = 0., y = 12.562364312814705744686480950 0\}$$




```
> tanto_slope_5(161,3);
```

$$28.302330214396185546528548322 - 1.703163483587482870721206169 48\,x$$

$$-15.613752673946665166334775576 3 + 0.163757963275527838484579546069\,x$$

$$1.230536096278095023762110796 60\,x - 15.613752673946665166334775576 0$$

$$\{y = 28.302330214396185546528548320 8,\ x = 0.\}$$

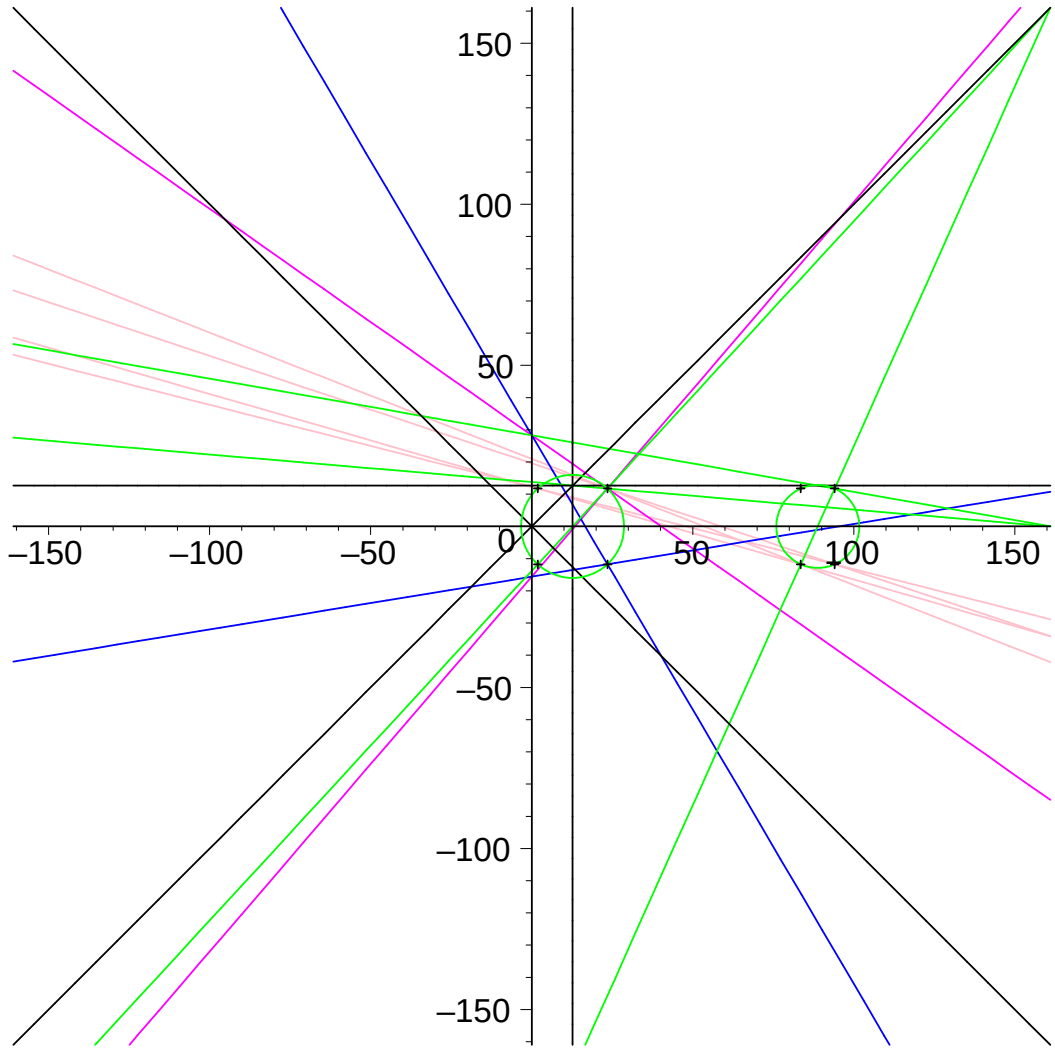
$$\{y = -7.318181818181818181818181818 09,\ x = 50.657511181958781604672697864 8\}$$

$$\{x = 16.617506473765610402705246132 4,\ y = 16.617506473765610402705246132 4\}$$

$$\{x = 161.,\ y = 10.751279413413316829682531340 8\}$$

$$\{x = 161.,\ y = 171.751279413413316829682531339\}$$

$$\{x = 161., y = -245.90699064318855663958564496 4\}$$
$$\{x = 161., y = -84.9069906431885566395856449676\}$$
$$\{y = 2.21292731168713724896978472677, x = 15.318202365256950966303238726 2\}$$
$$\{x = 7.21603475941012479437142613921, y = -7.21603475941012479437142613921\}$$
$$\{y = 95.346524600309319530279935309 3, x = 95.346524600309319530279935309 3\}$$
$$\{x = -95.346524600309319530279935303 3, y = 95.346524600309319530279935303 3\}$$
$$\{x = 10.470077147104311695629402250 4, y = 10.470077147104311695629402250 4\}$$
$$\{x = 9.748349715220771268095126254 58, y = 9.748349715220771268095126254 58\}$$
$$\{x = 0., y = 19.602718583462216470949973042 9\}$$
$$\{x = 0., y = 12.234419582348994356630014931 4\}$$
$$\{x = 0., y = 20.980376186633435870353260056 6\}$$
$$\{x = 0., y = 12.295453258568913790647648575 3\}$$




```
> tanto_slope_5(145,2);
```

$$20.591926782707357038488291244 - 1.426039864469807387003206025 72\,x$$

$$-8.550332203915061558360050214 65 - 0.115482875457062597411029288137\,x$$

$$0.710066440783012311672010042884\,x - 8.550332203915061558360050214 09$$

$$\{x = 0.,\ y = 20.591926782707357038488291244 1\}$$

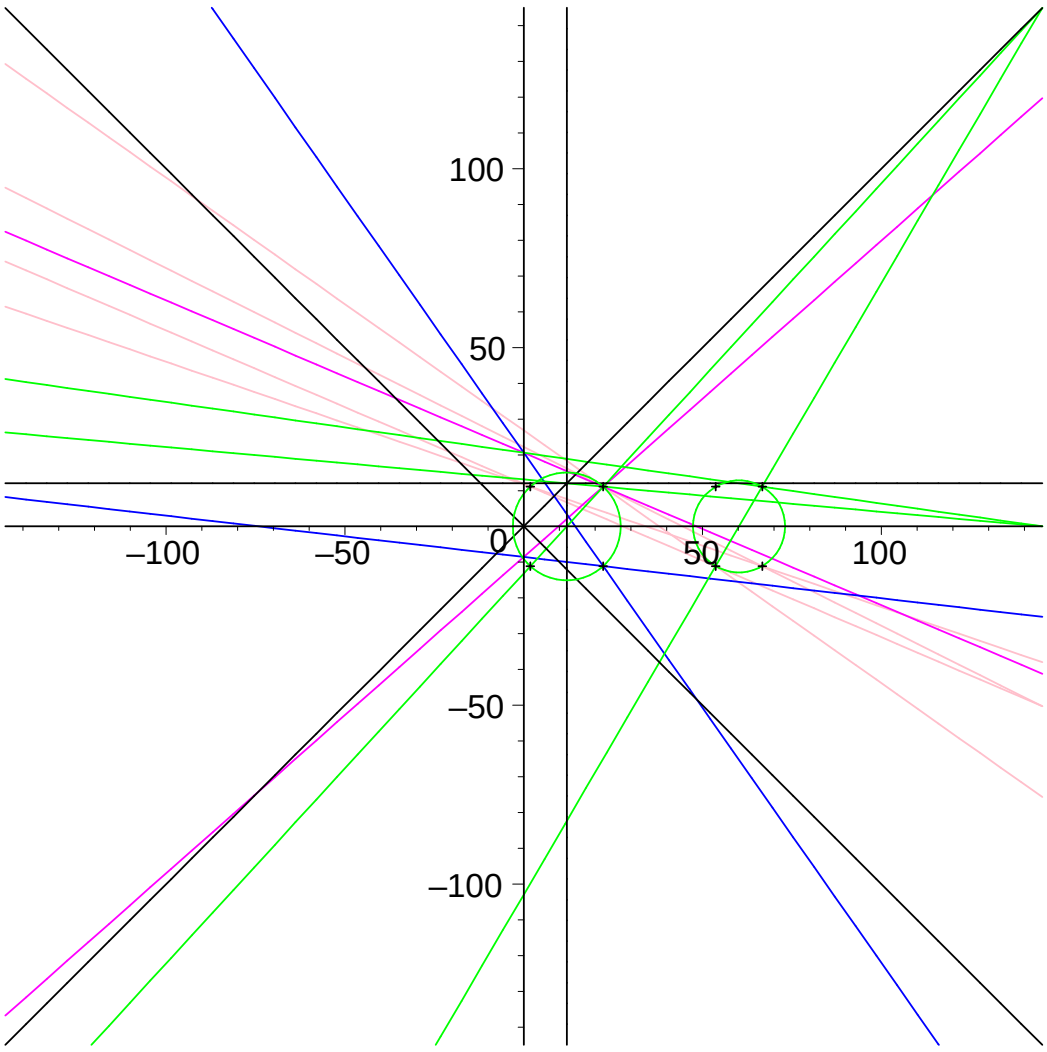
$$\{x = 93.838683454734500663937316080 3,\ y = -19.387093198372886454173270374 4\}$$

$$\{x = 14.439937687410516628500673400 1,\ y = 14.439937687410516628500673400 1\}$$

$$\{x = 145.,\ y = -25.295349145189138182959296994 5\}$$

$$\{x = 145.,\ y = 119.704650854810861817040703005\}$$

$$\{x = 145., y = -186.18385356541471407697658248 6\}$$
$$\{x = 145., y = -41.183853565414714076976582490 2\}$$
$$\{x = 12.612655357647909959478813014 7, y = 2.605777445882741503240327680 55\}$$
$$\{y = -4.537147523129471158357674455 28, x = 4.537147523129471158357674455 28\}$$
$$\{x = -74.039827724017310678795979396 7, y = -74.039827724017310678795979396 7\}$$
$$\{x = -35.876928566973862279241912955 8, y = 35.876928566973862279241912955 8\}$$
$$\{y = 8.487876511958127475022956494 83, x = 8.487876511958127475022956494 83\}$$
$$\{x = 8.751222165162626528941604505 81, y = 8.751222165162626528941604505 81\}$$
$$\{x = 0., y = 22.236544637845595064147152075 1\}$$
$$\{x = 0., y = 11.751345103220580361729792061 9\}$$
$$\{x = 0., y = 26.830619782896458028924182798 0\}$$
$$\{x = 0., y = 11.910082127740042974653570873 5\}$$




```
> tanto_slope_5(145,1);
```

$$16.036994220035903269254374627 7 - 1.221199920276357286472474132 78\, x$$

$$-3.995399641243607789126133597 57 - 0.320322819650512697941761181096\, x$$

$$0.331799880414535929708711199174\, x - 3.995399641243607789126133597 30$$

$$\{x = 0.,\ y = 16.036994220035903269254374627 6\}$$

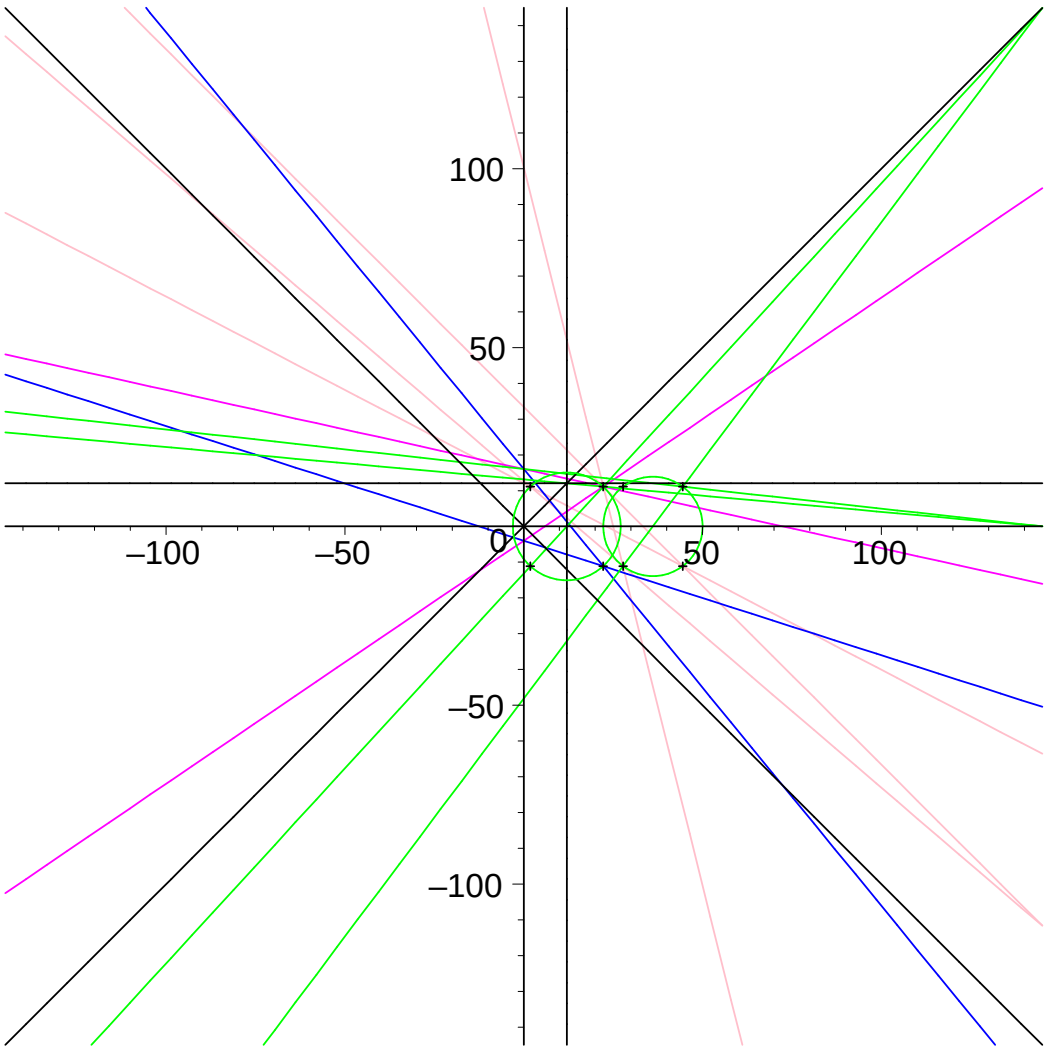
$$\{y = 60.740730218853615571554137418 4,\ x = -202.096528529336104969773422072\}$$

$$\{x = 13.132161207811686420962464926 4,\ y = 13.132161207811686420962464926 4\}$$

$$\{x = 145.,\ y = -50.442208490567948990681504856 5\}$$

$$\{x = 145.,\ y = 94.557791509432051009318495142 4\}$$

$$\{x = 145., y = -161.03699422003590326925437462 5\}$$
$$\{x = 145., y = -16.03699422003590326925437462 80\}$$
$$\{x = 10.538500282150827997016230524 7, y = 3.16737851564094334989978782277\}$$
$$\{x = 2.37867114466143573391562402573, y = -2.37867114466143573391562402573\}$$
$$\{y = -12.47304093290255503253944179 43, x = -12.47304093290255503253944179 43\}$$
$$\{x = -20.59192678270735703848829124 50, y = 20.59192678270735703848829124 50\}$$
$$\{x = 7.21996884370525831425033669995, y = 7.21996884370525831425033669995\}$$
$$\{x = 7.93974219953001737942923071200, y = 7.93974219953001737942923071200\}$$
$$\{x = 0., y = 33.35481695676839259622072811 27\}$$
$$\{x = 0., y = 12.08159434890924728153100755 37\}$$
$$\{x = 0., y = 100.37275743964093251069119201 4\}$$
$$\{x = 0., y = 12.70189193655728841723356570 96\}$$




```
> tanto_slope_5(1403,11);
```

$$97.048819411579503981103588831 4 - 1.830068305729831823074300118 31\, x$$

$$-59.592177810923419533858730214 5 + 0.316719538231379904169366098825\, x$$

$$1.590964252648844327559075226 76\, x - 59.592177810923419533858730216 1$$

$$\{y = 97.048819411579503981103588853 8,\ x = 0.\}$$

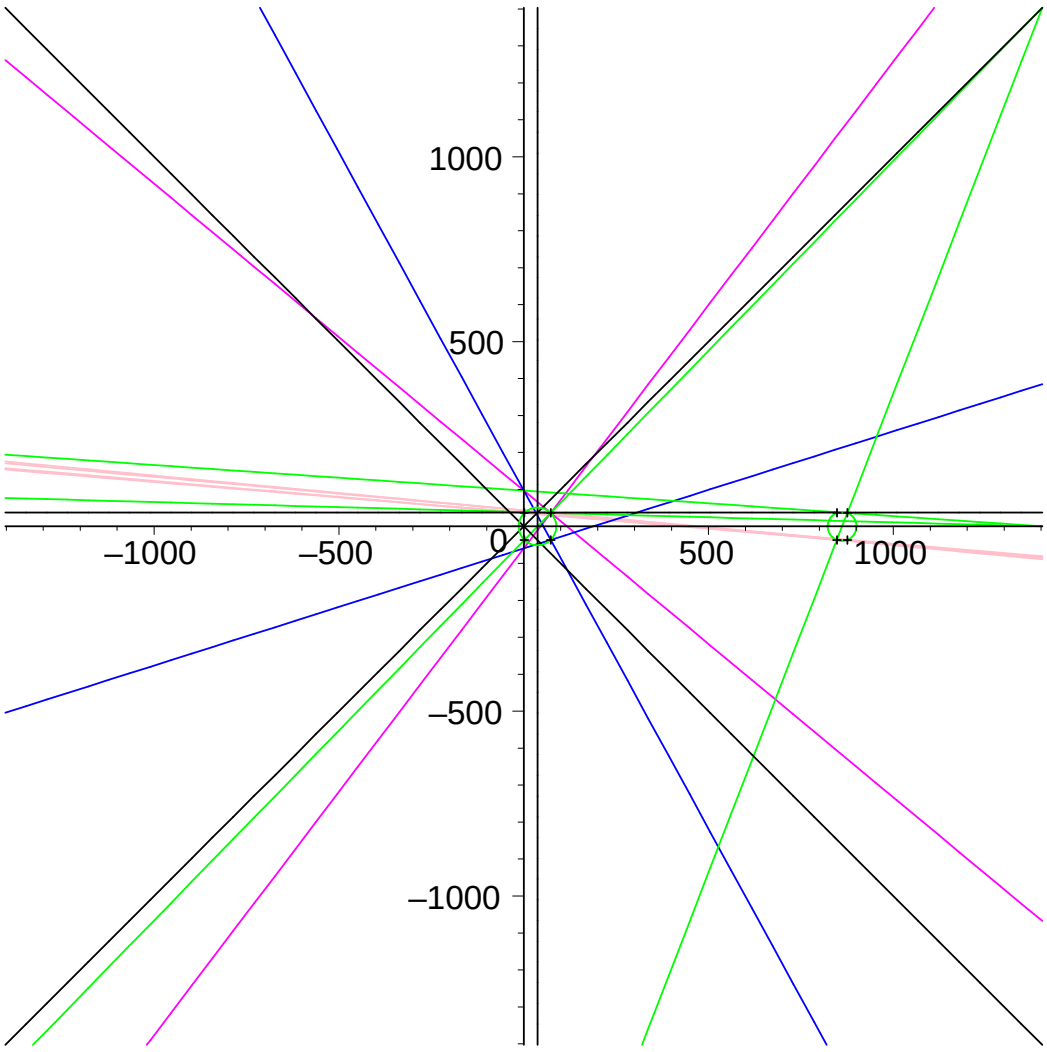
$$\{y = -16.331112070073091787159438378 5,\ x = 136.591086178099613533854602155\}$$

$$\{y = 53.030162375757009734387314069 4,\ x = 53.030162375757009734387314069 4\}$$

$$\{x = 1403.,\ y = 384.765334327702586015761906437\}$$

$$\{x = 1403.,\ y = 1787.765334327702586015761906437\}$$

$$\{x = 1403., y = -2470.537013527374543792139477 16\}$$
$$\{x = 1403., y = -1067.537013527374543792139477 12\}$$
$$\{x = 49.778060991020444695083625340 5, y = 5.951567671226485535445503168 16\}$$
$$\{x = 25.722655171465866942286437705 2, y = -25.722655171465866942286437705 2\}$$
$$\{y = 188.154409872207726599372836254, x = 188.154409872207726599372836254\}$$
$$\{x = -571.104877335508351008340093430, y = 571.104877335508351008340093430\}$$
$$\{y = 34.292041367019967001563975151 6, x = 34.292041367019967001563975151 6\}$$
$$\{x = 33.820666465549985339494035188 9, y = 33.820666465549985339494035188 9\}$$
$$\{y = 43.115853077056563625554336421 1, x = 0.\}$$
$$\{x = 0., y = 36.645339655290643886631512912 2\}$$
$$\{x = 0., y = 43.357055324664174338706245704 7\}$$
$$\{x = 0., y = 36.650758767391155024672597953 8\}$$




```
> tanto_slope_5(1403,10);
```

$$85.254332812599258294682470518 2 - 1.668423136805838803450824786 69\, x$$

$$-47.797691211943173847437611901 4 + 0.155074369307386884545890767198\, x$$

$$1.276080533902055897497029138 20\, x - 47.797691211943173847437611902 7$$

$$\{x = 0.,\ y = 85.254332812599258294682470534 2\}$$

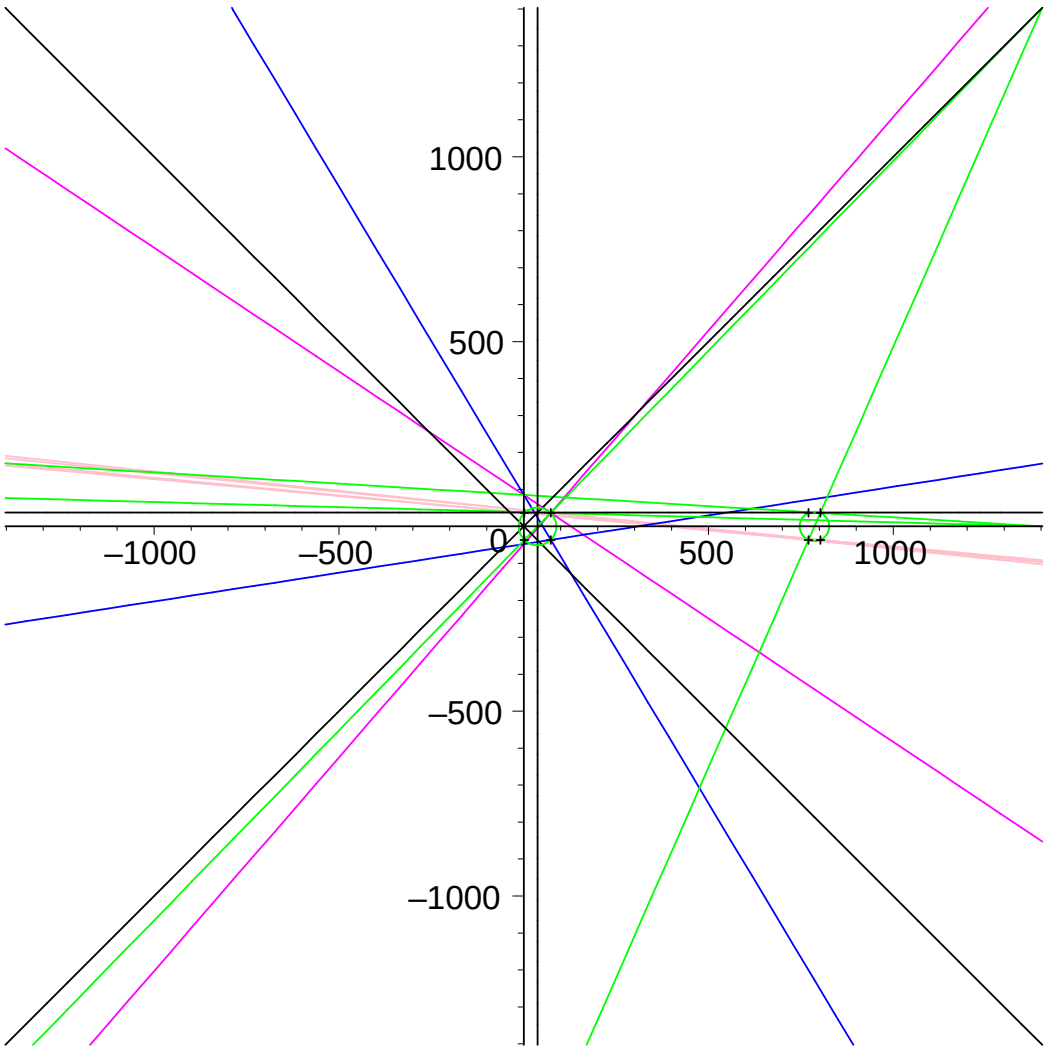
$$\{y = -22.742413500099922352852667610 5,\ x = 161.569431645915175467177468759\}$$

$$\{y = 51.098747632939744036442468639 7,\ x = 51.098747632939744036442468639 7\}$$

$$\{y = 169.771648926320625170447134477,\ x = 1403.\}$$

$$\{x = 1403.,\ y = 1572.771648926320625170447134480 \}$$

$$\{x = 1403., y = -2255.5433281259925829468247052 0\}$$
$$\{x = 1403., y = -852.543328125992582946824705175\}$$
$$\{x = 47.123124329477230984797001490 1, y = 6.633021902721317209900707062 31\}$$
$$\{x = 22.179137709899420090442988655 0, y = -22.179137709899420090442988655 0\}$$
$$\{x = 308.224314729915567164530951533, y = 308.224314729915567164530951533\}$$
$$\{y = 257.117857957046138468296930446, x = -257.117857957046138468296930446\}$$
$$\{y = 31.949330537828633188339942652 2, x = 31.949330537828633188339942652 2\}$$
$$\{x = 33.598340298347052314813220064 5, y = 33.598340298347052314813220064 5\}$$
$$\{y = 43.779173893626664604409018519 9, x = 0.\}$$
$$\{y = 36.660166070989470078117185734 6, x = 0.\}$$
$$\{y = 44.114479911423132942155322984 3, x = 0.\}$$
$$\{x = 0., y = 36.667570152994715143439106205 9\}$$




```
> tanto_slope_5(10403,50);
```

$$10454.247542953116264871841 1859 - 52.251237594021813852587 1287595\, x$$

$$-10352.252445031696531573358 8210 + 50.746335397639932677286 8075262\, x$$

$$101.49754896070986664924117 6563\, x - 10352.252445031696531573358 8329$$

$$\{x = 0.,\ y = 10454.247542953116264871841 4690\}$$

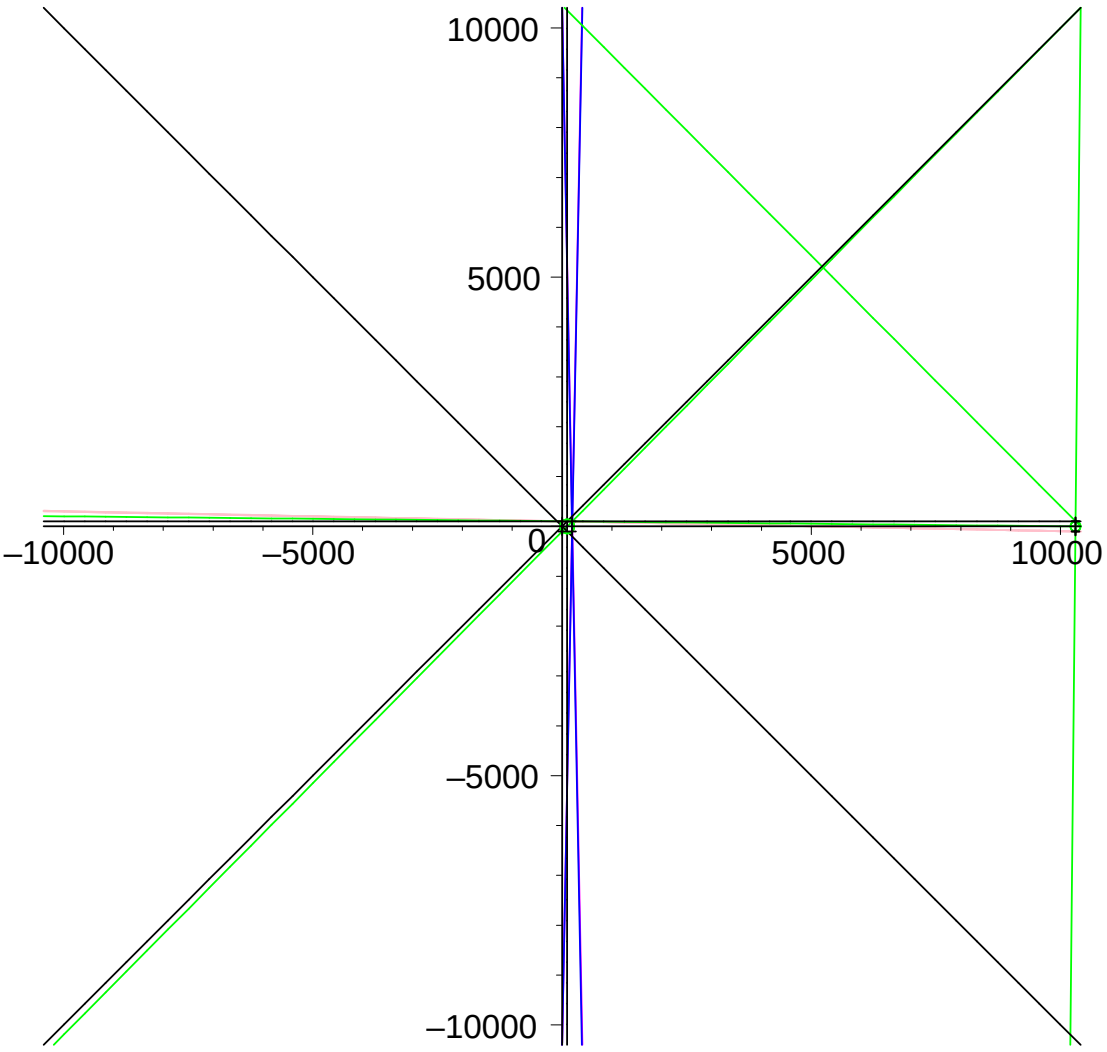
$$\{x = 203.99014778210197564270318 8290,\ y = -0.49998786701404054208615 2652474\}$$

$$\{y = 200.07655367284948570215258 9897,\ x = 200.07655367284948570215258 9897\}$$

$$\{y = 517561.87469661652311024129 9874,\ x = 10403.\}$$

$$\{x = 10403.,\ y = 527964.87469661652311024129 9877\}$$

$$\{x = 10403., y = -533115.37714765581324359205929 9\}$$
$$\{x = 10403., y = -522712.37714765581324359205877 3\}$$
$$\{y = 0.490372491334953718360035430369, x = 200.067168775688866900262995208\}$$
$$\{x = 196.264865928390066473653789305, y = -196.264865928390066473653789305\}$$
$$\{y = 204.000000471229106063075098431, x = 204.000000471229106063075098431\}$$
$$\{x = 208.039603470319619361004008974, y = -208.039603470319619361004008974\}$$
$$\{x = 196.319334822872732497380460155, y = 196.319334822872732497380460155\}$$
$$\{y = 99.100135973964172563137167721 4, x = 99.100135973964172563137167721 4\}$$
$$\{y = 105.044999406228673805448605525, x = 0.\}$$
$$\{x = 0., y = 101.043649521888284598815081171\}$$
$$\{x = 0., y = 105.045787909139961031535387537\}$$
$$\{x = 0., y = 101.043656955314049378084005399\}$$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[>