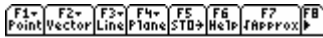


Anageom tutorial

by Tomas Boril (borilt@gmail.com)

Start Anageom

Press “diamond” and “3”.



ANAGEOM RAD AUTO FUNC 0/30

New problem

Press F8 and choose Problem, new.



ANAGEOM RAD AUTO FUNC 0/30

Now all old variables are deleted and we can start our new problem.

We want to enter these points:

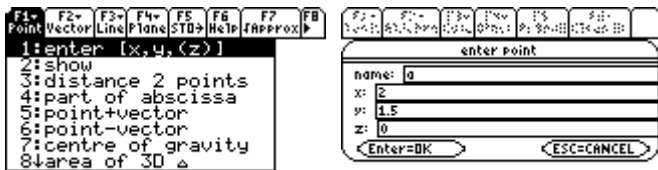
A [2; 1.5; 0]

B [4; 0.5; 0]

C [0; -5; 3]

D [2; -1; 1]

Press F1 and Enter. Then enter point A.



TYPE OR USE ←→+1+ [ENTER] OR [ESC]

ANAGEOM RAD AUTO FUNC 0/30

Press Enter.



A[2; 1.5; 0.1]

ANAGEOM RAD AUTO FUNC PAUSE

Now we are in pause mode. If the result is big, we can scroll the screen by left and right arrow. Press enter to leave the pause mode.

Ok. Now enter points B, C and D.

```

F1= F2= F3= F4= F5= F6= F7= F8=
Point Vector Line Plane STD Help FApprox
A[2.;1.5;0.]
B[4.;.5;0.]
C[0.;-5.;3.]
D[2.;-1.;1.]

```

ANAGEOM RAD AUTO FUNC 0/30

If you have entered some point wrong, enter it again, it will overwrite.

What is distance between A and B?

Press F1, 3, ab, ENTER twice and once more ENTER to leave the pause mode.

```

F1= F2= F3= F4= F5= F6= F7= F8=
Point Vector Line Plane STD Help FApprox
1:enter [x,y,(z)]
2:show
3:distance 2 points
4:part of abscissa
5:point+vector
6:point-vector
7:centre of gravity
8:area of 3D

```

A[2.;1.5;0.]
distance 2 points
2 points: ab
Enter=OK ESC=CANCEL

```

F1= F2= F3= F4= F5= F6= F7= F8=
Point Vector Line Plane STD Help FApprox
A[2.;1.5;0.]
B[4.;.5;0.]
C[0.;-5.;3.]
D[2.;-1.;1.]
|AB| = 2.23607

```

ANAGEOM RAD AUTO FUNC 0/30 ANAGEOM RAD AUTO FUNC 0/30 ANAGEOM RAD AUTO FUNC 0/30

The distance is 2.23. I will be more brief in next questions so just follow screenshots.

What is point just in half between A and B?

```

F1= F2= F3= F4= F5= F6= F7= F8=
Point Vector Line Plane STD Help FApprox
1:enter [x,y,(z)]
2:show
3:distance 2 points
4:part of abscissa
5:point+vector
6:point-vector
7:centre of gravity
8:area of 3D

```

A[2.;1.5;0.]
part of abscissa
2 points: ab
part: 1/2
Enter=OK ESC=CANCEL

```

F1= F2= F3= F4= F5= F6= F7= F8=
Point Vector Line Plane STD Help FApprox
A[2.;1.5;0.]
B[4.;.5;0.]
C[0.;-5.;3.]
D[2.;-1.;1.]
|AB| = 2.23607
1/2 AB = [3.;1.;0.]

```

ANAGEOM RAD AUTO FUNC 0/30 ANAGEOM RAD AUTO FUNC 0/30 ANAGEOM RAD AUTO FUNC 0/30

What is point in one third between A and B?

```

F1= F2= F3= F4= F5= F6= F7= F8=
Point Vector Line Plane STD Help FApprox
1:enter [x,y,(z)]
2:show
3:distance 2 points
4:part of abscissa
5:point+vector
6:point-vector
7:centre of gravity
8:area of 3D

```

A[2.;1.5;0.]
part of abscissa
2 points: ab
part: 1/3
Enter=OK ESC=CANCEL

```

F1= F2= F3= F4= F5= F6= F7= F8=
Point Vector Line Plane STD Help FApprox
A[2.;1.5;0.]
B[4.;.5;0.]
C[0.;-5.;3.]
D[2.;-1.;1.]
|AB| = 2.23607
1/2 AB = [3.;1.;0.]
1/3 AB = [2.66667;1.16667;0.]

```

ANAGEOM RAD AUTO FUNC 0/30 ANAGEOM RAD AUTO FUNC 0/30 ANAGEOM RAD AUTO FUNC 12/1934

We can scroll and then press ENTER.

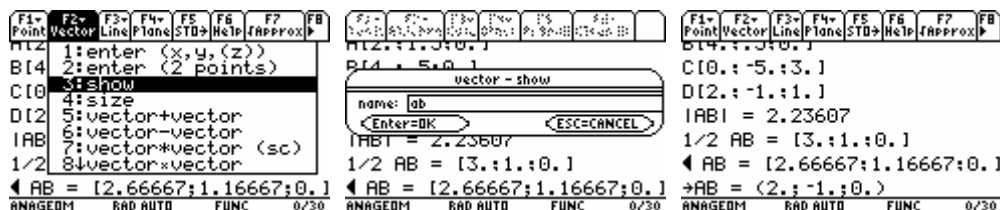
```

F1= F2= F3= F4= F5= F6= F7= F8=
Point Vector Line Plane STD Help FApprox
A[2.;1.5;0.]
B[4.;.5;0.]
C[0.;-5.;3.]
D[2.;-1.;1.]
|AB| = 2.23607
1/2 AB = [3.;1.;0.]
1/3 AB = [2.66667;1.16667;0.]

```

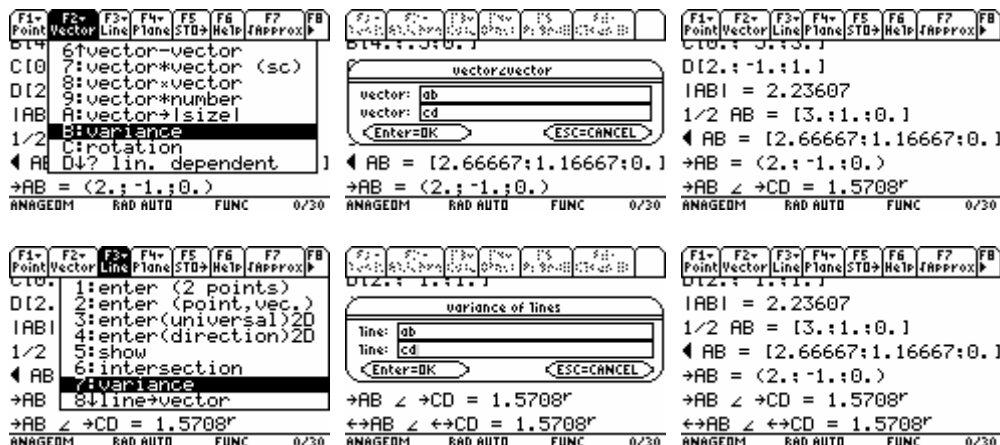
ANAGEOM RAD AUTO FUNC 12/1934

What is vector between A and B?

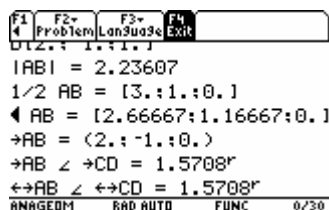


What is angle between AB and CD?

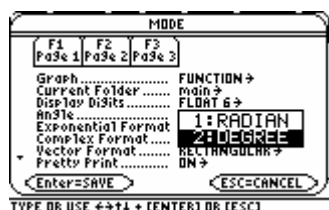
We can do this in two ways – by vectors or by lines.



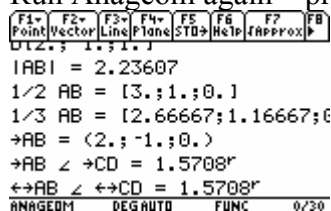
If we do not like result in radians, we can exit Anageom and set degree mode and run Anageom again – it remembers all variables. To access Exit menu, press F8.



Press MODE and set degrees mode.



Run Anageom again – press “diamond” and “3”.



Now we calculate angle again, exactly same way as before.

F1	F2	F3	F4	F5	F6	F7	F8
Point	Vector	Line	Plane	STD	Help	F7	F8
1/2	5:vector+vector						
1AB	6:vector-vector						
1/2	7:vector*vector (sc)						
1/3	8:vector*vector						
1/3	9:vector*number						
→AB	A:vector+size						
→AB	B:variance						
→AB	C:rotation						
↔AB ∠ ↔CD = 1.5708°							
ANAGEDM DEGAUTO FUNC 0/30							

F1	F2	F3	F4	F5	F6	F7	F8
Point	Vector	Line	Plane	STD	Help	F7	F8
1/2	5:vector+vector						
1AB	6:vector-vector						
1/2	7:vector*vector (sc)						
1/3	8:vector*vector						
→AB	A:vector+size						
→AB	B:variance						
→AB	C:rotation						
↔AB ∠ ↔CD = 1.5708°							
ANAGEDM DEGAUTO FUNC 0/30							

F1	F2	F3	F4	F5	F6	F7	F8
Point	Vector	Line	Plane	STD	Help	F7	F8
1/2	5:vector+vector						
1AB	6:vector-vector						
1/2	7:vector*vector (sc)						
1/3	8:vector*vector						
→AB	A:vector+size						
→AB	B:variance						
→AB	C:rotation						
↔AB ∠ ↔CD = 1.5708°							
ANAGEDM DEGAUTO FUNC 0/30							

Nice. It seems that both lines are perpendicular.

Calculate scalar product of AB and CD.

F1	F2	F3	F4	F5	F6	F7	F8
Point	Vector	Line	Plane	STD	Help	F7	F8
1/2	1:enter (x,y,z)						
1/2	2:enter (2 points)						
1/3	3:show						
1/3	4:size						
→AB	5:vector+vector						
→AB	6:vector-vector						
→AB	7:vector*vector (sc)						
→AB	8:vector*vector						
↔AB ∠ ↔CD = 90.°							
ANAGEDM DEGAUTO FUNC 0/30							

F1	F2	F3	F4	F5	F6	F7	F8
Point	Vector	Line	Plane	STD	Help	F7	F8
1/2	1:enter (x,y,z)						
1/2	2:enter (2 points)						
1/3	3:show						
1/3	4:size						
→AB	5:vector+vector						
→AB	6:vector-vector						
→AB	7:vector*vector (sc)						
→AB	8:vector*vector						
↔AB ∠ ↔CD = 90.°							
ANAGEDM DEGAUTO FUNC 0/30							

It is 0. So they are perpendicular.

Calculate vector product between AB and CD and store it as vector c.

F1	F2	F3	F4	F5	F6	F7	F8
Point	Vector	Line	Plane	STD	Help	F7	F8
1/2	1:enter (x,y,z)						
1/2	2:enter (2 points)						
1/3	3:show						
1/3	4:size						
→AB	5:vector+vector						
→AB	6:vector-vector						
→AB	7:vector*vector (sc)						
→AB	8:vector*vector						
↔AB ∠ ↔CD = 90.°							
ANAGEDM DEGAUTO FUNC 0/30							

F1	F2	F3	F4	F5	F6	F7	F8
Point	Vector	Line	Plane	STD	Help	F7	F8
1/2	1:enter (x,y,z)						
1/2	2:enter (2 points)						
1/3	3:show						
1/3	4:size						
→AB	5:vector+vector						
→AB	6:vector-vector						
→AB	7:vector*vector (sc)						
→AB	8:vector*vector						
↔AB ∠ ↔CD = 90.°							
ANAGEDM DEGAUTO FUNC 0/30							

Press F5.

F1	F2	F3	F4	F5	F6	F7	F8
Point	Vector	Line	Plane	STD	Help	F7	F8
1/2	1:enter (x,y,z)						
1/2	2:enter (2 points)						
1/3	3:show						
1/3	4:size						
→AB	5:vector+vector						
→AB	6:vector-vector						
→AB	7:vector*vector (sc)						
→AB	8:vector*vector						
↔AB ∠ ↔CD = 90.°							
ANAGEDM DEGAUTO FUNC 0/30							

F1	F2	F3	F4	F5	F6	F7	F8
Point	Vector	Line	Plane	STD	Help	F7	F8
1/2	1:enter (x,y,z)						
1/2	2:enter (2 points)						
1/3	3:show						
1/3	4:size						
→AB	5:vector+vector						
→AB	6:vector-vector						
→AB	7:vector*vector (sc)						
→AB	8:vector*vector						
↔AB ∠ ↔CD = 90.°							
ANAGEDM DEGAUTO FUNC 0/30							

What is area of triangle ABC?

F1	F2	F3	F4	F5	F6	F7	F8
Point	Vector	Line	Plane	STD	Help	F7	F8
1/2	1:enter (x,y,z)						
1/2	2:enter (2 points)						
1/3	3:show						
1/3	4:part of abscissa						
1/3	5:point+vector						
1/3	6:point-vector						
1/3	7:centre of gravity						
1/3	8:area of 3D						
↔AB ∠ ↔CD = 90.°							
ANAGEDM DEGAUTO FUNC 0/30							

F1	F2	F3	F4	F5	F6	F7	F8
Point	Vector	Line	Plane	STD	Help	F7	F8
1/2	1:enter (x,y,z)						
1/2	2:enter (2 points)						
1/3	3:show						
1/3	4:part of abscissa						
1/3	5:point+vector						
1/3	6:point-vector						
1/3	7:centre of gravity						
1/3	8:area of 3D						
↔AB ∠ ↔CD = 90.°							
ANAGEDM DEGAUTO FUNC 0/30							

And what formula have you used to calculate it!?

Do not panic, we have got help ☺

Press F6.

F1	F2	F3	F4	F5	F6	F7	F8
Point	Vector	Line	Plane	STD	Help	F7	F8
1/2	1:enter (x,y,z)						
1/2	2:enter (2 points)						
1/3	3:show						
1/3	4:part of abscissa						
1/3	5:point+vector						
1/3	6:point-vector						
1/3	7:centre of gravity						
1/3	8:area of 3D						
↔AB ∠ ↔CD = 90.°							
ANAGEDM DEGAUTO FUNC 0/30							

F1	F2	F3	F4	F5	F6	F7	F8
Point	Vector	Line	Plane	STD	Help	F7	F8
1/2	1:enter (x,y,z)						
1/2	2:enter (2 points)						
1/3	3:show						
1/3	4:part of abscissa						
1/3	5:point+vector						
1/3	6:point-vector						
1/3	7:centre of gravity						
1/3	8:area of 3D						
↔AB ∠ ↔CD = 90.°							
ANAGEDM DEGAUTO FUNC 0/30							

And press F5.

```

F1- F2- F3- F4- F5- F6- F7- F8-
Point Vector Line Plane STD Help FApprox FB
7:AB * CD = (2.;4.;10.)
+AB * +CD = (2.;4.;10.)
+c(2.;4.;10.)
area ABC = 8.21584
-----
ΔABC
area = 1/2 |→AB × →BC|
ANAGEDM DEGAUTO FUNC 0/30

```

What is a centre of gravity of triangle ABC?

```

F1- F2- F3- F4- F5- F6- F7- F8-
Point Vector Line Plane STD Help FApprox FB
1:enter (x,y,z)
2:show
3:distance 2 points
4:part of abscissa
5:point+vector
6:point-vector
7:centre of gravity
8:area of 3D Δ
area = 1/2 |→AB × →BC|
ANAGEDM DEGAUTO FUNC 0/30

F1- F2- F3- F4- F5- F6- F7- F8-
Point Vector Line Plane STD Help FApprox FB
7:AB * CD = (2.;4.;10.)
+AB * +CD = (2.;4.;10.)
+c(2.;4.;10.)
area ABC = 8.21584
-----
ΔABC
area = 1/2 |→AB × →BC|
centre of gr. ABC = [2.;-1]
ANAGEDM DEGAUTO FUNC 0/30

```

We could scroll the result or save the result if we wanted.

Make line p from points A and B

```

F1- F2- F3- F4- F5- F6- F7- F8-
Point Vector Line Plane STD Help FApprox FB
1:enter (2 points)
2:enter (point,vec.)
3:enter(universal)2D
4:enter(direction)2D
5:show
6:intersection
7:variance
8:line+vector
centre of gr. ABC = [2.;-1]
ANAGEDM DEGAUTO FUNC 0/30

F1- F2- F3- F4- F5- F6- F7- F8-
Point Vector Line Plane STD Help FApprox FB
7:AB * CD = (2.;4.;10.)
+AB * +CD = (2.;4.;10.)
+c(2.;4.;10.)
area ABC = 8.21584
-----
ΔABC
area = 1/2 |→AB × →BC|
centre of gr. ABC = [2.;-1]
+→p = +→AB = ([2.;1.5;0.])
ANAGEDM DEGAUTO FUNC 0/30

```

What is distance between line p and point C?

```

F1- F2- F3- F4- F5- F6- F7- F8-
Point Vector Line Plane STD Help FApprox FB
4:enter(direction)2D
5:show
6:intersection
7:variance
8:line+vector
9:point_line
Hx → point
By → point
+→p = +→AB = ([2.;1.5;0.])
ANAGEDM DEGAUTO FUNC 0/30

F1- F2- F3- F4- F5- F6- F7- F8-
Point Vector Line Plane STD Help FApprox FB
7:AB * CD = (2.;4.;10.)
+AB * +CD = (2.;4.;10.)
+c(2.;4.;10.)
area ABC = 8.21584
-----
ΔABC
area = 1/2 |→AB × →BC|
centre of gr. ABC = [2.;-1]
+→p = +→AB = ([2.;1.5;0.])
IC ↔p| = 7.34847
ANAGEDM DEGAUTO FUNC 0/30

```

You can also try to calculate distance between line AB and point C, it is the same.

```

F1- F2- F3- F4- F5- F6- F7- F8-
Point Vector Line Plane STD Help FApprox FB
3:enter(universal)2D
4:enter(direction)2D
5:show
6:intersection
7:variance
8:line+vector
9:point_line
Hx → point
ANAGEDM DEGAUTO FUNC 0/30

F1- F2- F3- F4- F5- F6- F7- F8-
Point Vector Line Plane STD Help FApprox FB
7:AB * CD = (2.;4.;10.)
+AB * +CD = (2.;4.;10.)
+c(2.;4.;10.)
area ABC = 8.21584
-----
ΔABC
area = 1/2 |→AB × →BC|
centre of gr. ABC = [2.;-1]
+→p = +→AB = ([2.;1.5;0.])
IC ↔p| = 7.34847
ANAGEDM DEGAUTO FUNC 0/30

```

Calculate intersection of line p and line CD and store this point as X.

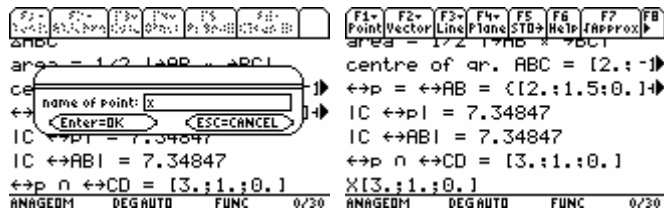
```

F1- F2- F3- F4- F5- F6- F7- F8-
Point Vector Line Plane STD Help FApprox FB
1:enter (2 points)
2:enter (point,vec.)
3:enter(universal)2D
4:enter(direction)2D
5:show
6:intersection
7:variance
8:line+vector
IC ↔AB| = 7.34847
ANAGEDM DEGAUTO FUNC 0/30

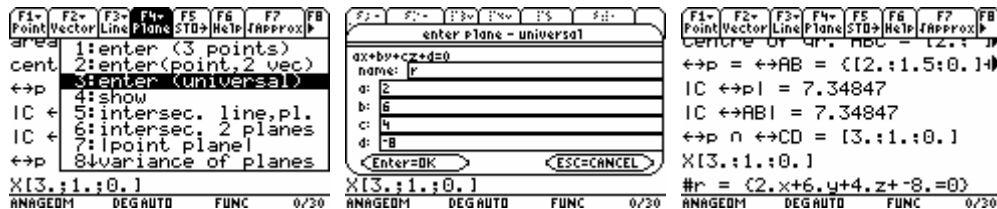
F1- F2- F3- F4- F5- F6- F7- F8-
Point Vector Line Plane STD Help FApprox FB
7:AB * CD = (2.;4.;10.)
+AB * +CD = (2.;4.;10.)
+c(2.;4.;10.)
area ABC = 8.21584
-----
ΔABC
area = 1/2 |→AB × →BC|
centre of gr. ABC = [2.;-1]
+→p = +→AB = ([2.;1.5;0.])
IC ↔p| = 7.34847
IC ↔AB| = 7.34847
ANAGEDM DEGAUTO FUNC 0/30

```

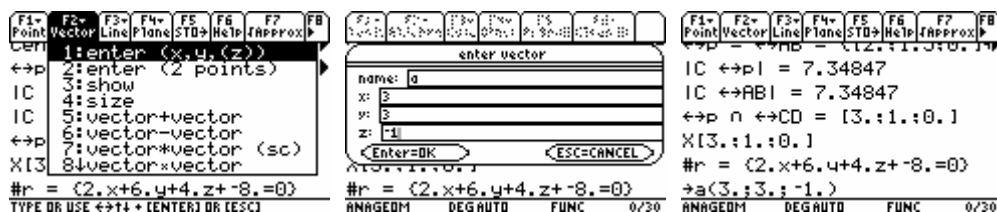
Press F5.



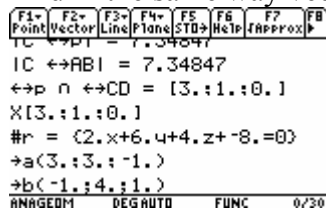
Enter plane r: $2x + 6y + 4z - 8 = 0$



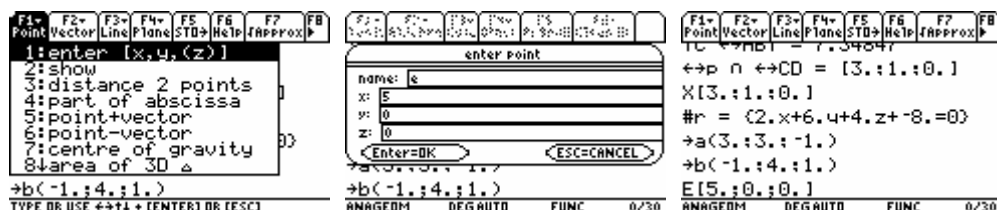
Enter vectors a (3; 3; -1) and b (-1; 4; 1)



And in the same way vector b...



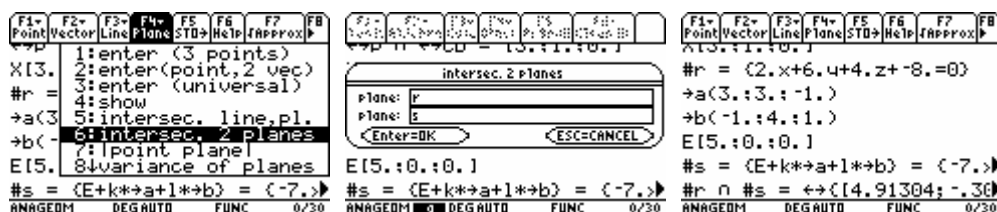
Enter point E (5; 0; 0)



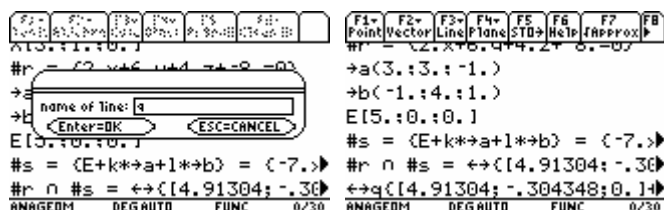
Enter plane s: it includes point E and vectors a and b.



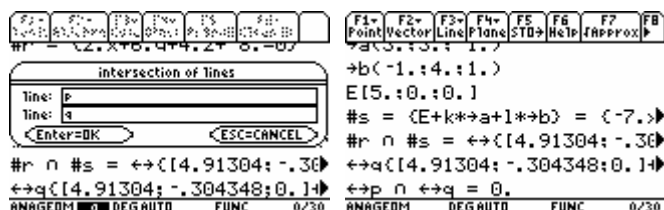
Calculate intersection of planes r and s and store it as line q.



Press F5.

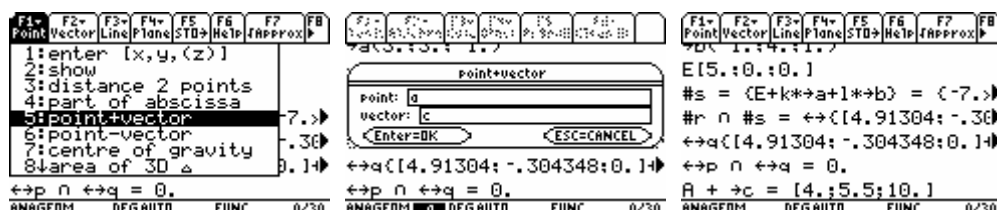


Calculate intersection of lines p and q.

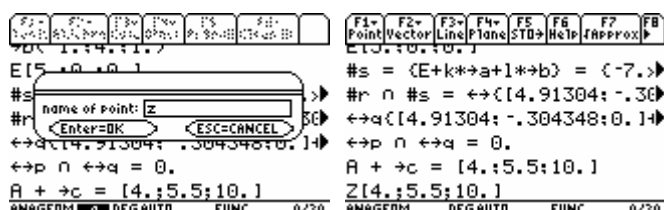


You can see that the intersection does not exist.

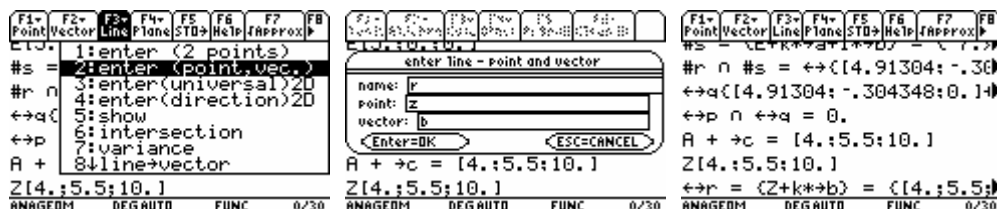
Calculate point Z which is point A moved in direction of vector c.



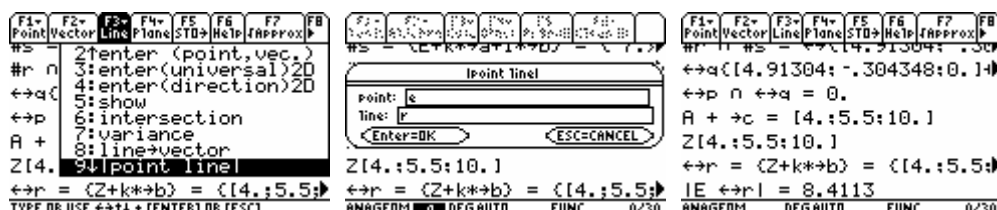
Press F5.



Enter line r, which has direction of vector b and and goes through point Z.



What is distance between line r and point E?



Enter 2D lines, s: $5x - 3y + 1 = 0$ and t: $2x + 2y - 6 = 0$

F1- Point	F2- Vector	F3- Line	F4- Plane	F5- STD	F6- Help	F7- FA	F8- Approx
<pre> 1:enter (2 points) 2:enter (point,vec.) 3:enter (universal)2D 4:enter (direction)2D 5:show 6:intersection 7:variance 8:line+vector IE ↔r = 8.4113 ANAGEDM DEGAUTO FUNC 0/30 </pre>							

F1- Point	F2- Vector	F3- Line	F4- Plane	F5- STD	F6- Help	F7- FA	F8- Approx
<pre> enter line - universal2D ax+by+c=0 name: s a: 5 b: -3 c: 1 Enter=OK ESC=CANCEL IE ↔r = 8.4113 ANAGEDM DEGAUTO FUNC 0/30 </pre>							

F1- Point	F2- Vector	F3- Line	F4- Plane	F5- STD	F6- Help	F7- FA	F8- Approx
<pre> ↔p n ↔q = 0. A + ↔c = [4.;5.5;10.] Z[4.;5.5;10.] ↔r = (Z+k*↔b) = ([4.;5.5; IE ↔r = 8.4113 ↔s = (5.x+-3.y+1.=0) ANAGEDM DEGAUTO FUNC 0/30 </pre>							

And in the same way line t.

F1- Point	F2- Vector	F3- Line	F4- Plane	F5- STD	F6- Help	F7- FA	F8- Approx
<pre> ↔p n ↔q = 0. A + ↔c = [4.;5.5;10.] Z[4.;5.5;10.] ↔r = (Z+k*↔b) = ([4.;5.5; IE ↔r = 8.4113 ↔s = (5.x+-3.y+1.=0) ↔t = (2.x+2.y+-6.=0) ANAGEDM DEGAUTO FUNC 0/30 </pre>							

What is angle between lines s and t?

F1- Point	F2- Vector	F3- Line	F4- Plane	F5- STD	F6- Help	F7- FA	F8- Approx
<pre> 1:enter (2 points) 2:enter (point,vec.) 3:enter (universal)2D 4:enter (direction)2D 5:show 6:intersection 7:variance 8:line+vector ↔t = (2.x+2.y+-6.=0) ANAGEDM DEGAUTO FUNC 0/30 </pre>							

F1- Point	F2- Vector	F3- Line	F4- Plane	F5- STD	F6- Help	F7- FA	F8- Approx
<pre> ↔c = [4.;5.5;10.] Z[4.;5.5;10.] ↔r = (Z+k*↔b) = ([4.;5.5; IE ↔r = 8.4113 ↔s = (5.x+-3.y+1.=0) ↔t = (2.x+2.y+-6.=0) ↔s ∠ ↔t = 75.9638° ANAGEDM DEGAUTO FUNC 0/30 </pre>							

Enter 2D vectors, e (3; 0), f (3; $3\sqrt{3}$) and g (8; 8)

F1- Point	F2- Vector	F3- Line	F4- Plane	F5- STD	F6- Help	F7- FA	F8- Approx
<pre> 1:enter (x,y,z) 2:enter (2 points) 3:show 4:size 5:vector+vector 6:vector-vector 7:vector*vector (sc) 8:vector×vector ↔s ∠ ↔t = 75.9638° TYPE OR USE ↔t+ [ENTER] OR [ESC] ANAGEDM DEGAUTO FUNC 0/30 </pre>							

F1- Point	F2- Vector	F3- Line	F4- Plane	F5- STD	F6- Help	F7- FA	F8- Approx
<pre> enter vector name: e x: 3 y: 0 z: Enter=OK ESC=CANCEL ↔s ∠ ↔t = 75.9638° ANAGEDM DEGAUTO FUNC 0/30 </pre>							

F1- Point	F2- Vector	F3- Line	F4- Plane	F5- STD	F6- Help	F7- FA	F8- Approx
<pre> Z[4.;5.5;10.] ↔r = (Z+k*↔b) = ([4.;5.5; IE ↔r = 8.4113 ↔s = (5.x+-3.y+1.=0) ↔t = (2.x+2.y+-6.=0) ↔s ∠ ↔t = 75.9638° ↔e(3.;0.) ↔f(3.;5.19615) ↔g(8.;8.) ANAGEDM DEGAUTO FUNC 0/30 </pre>							

And in the same way vectors f and g.

F1- Point	F2- Vector	F3- Line	F4- Plane	F5- STD	F6- Help	F7- FA	F8- Approx
<pre> enter vector name: f x: 3 y: 3*√3 z: Enter=OK ESC=CANCEL ↔e(3.;0.) ↔f(3.;5.19615) ↔g(8.;8.) ANAGEDM DEGAUTO FUNC 0/30 </pre>							

But the vector f is 5.19615. We wanted $3\sqrt{3}$. What is wrong? Nothing, just turn off approx mode by pressing F7.

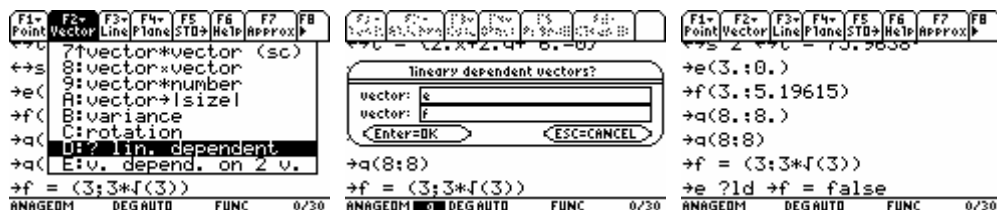
F1- Point	F2- Vector	F3- Line	F4- Plane	F5- STD	F6- Help	F7- FA	F8- Approx
<pre> 1:enter (x,y,z) 2:enter (2 points) 3:show 4:size 5:vector+vector 6:vector-vector 7:vector*vector (sc) 8:vector×vector ↔g(8;8) ANAGEDM DEGAUTO FUNC 0/30 </pre>							

F1- Point	F2- Vector	F3- Line	F4- Plane	F5- STD	F6- Help	F7- FA	F8- Approx
<pre> ↔s = (5.x+-3.y+1.=0) ↔t = (2.x+2.y+-6.=0) vector - show name: f Enter=OK ESC=CANCEL ↔f(3.;5.19615) ↔g(8.;8.) ANAGEDM DEGAUTO FUNC 0/30 </pre>							

F1- Point	F2- Vector	F3- Line	F4- Plane	F5- STD	F6- Help	F7- FA	F8- Approx
<pre> ↔s ∠ ↔t = 75.9638° ↔e(3.;0.) ↔f(3.;5.19615) ↔g(8.;8.) ↔f = (3;3*√3) ANAGEDM DEGAUTO FUNC 0/30 </pre>							

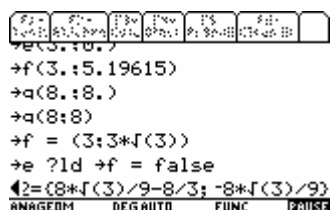
Ok. It is all right. It was stored correctly. It was only because of approx display mode.

Are vectors e and f linear independent?

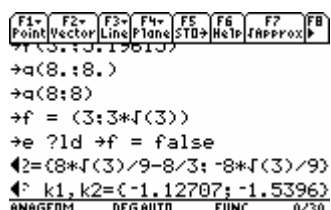


No, they are not. So they can be understood as coordinates.

How you can express vector g by sum of vectors e and f?

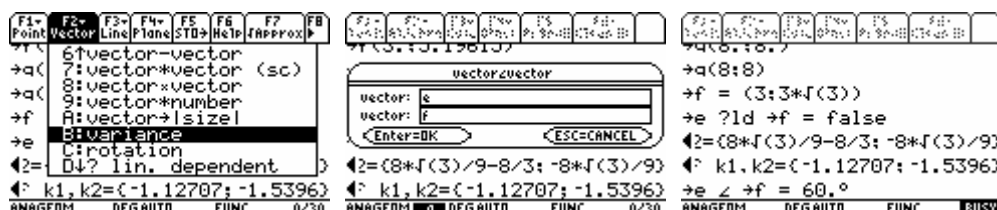


These numbers are coordinates of vector g in the base of vectors e and f. We can turn on approx display mode by pressing F7.

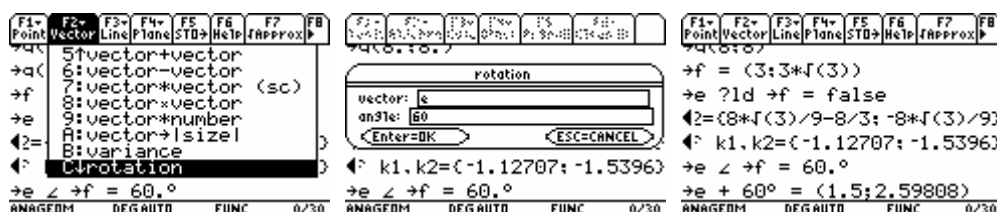


Rotate vector e so vectors e and f will be lineary dependent.

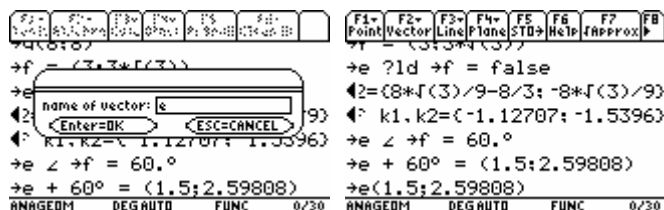
Ok. But we do not know the angle at this time.



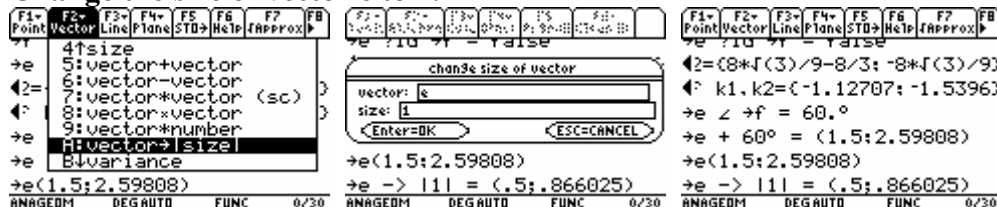
Ok, it is 60 degrees.



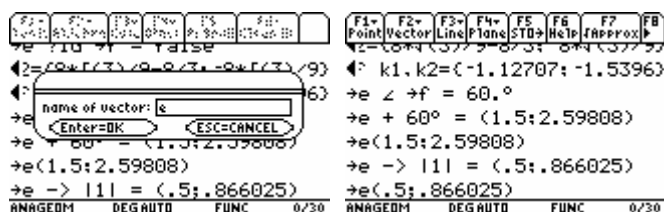
Press F5.



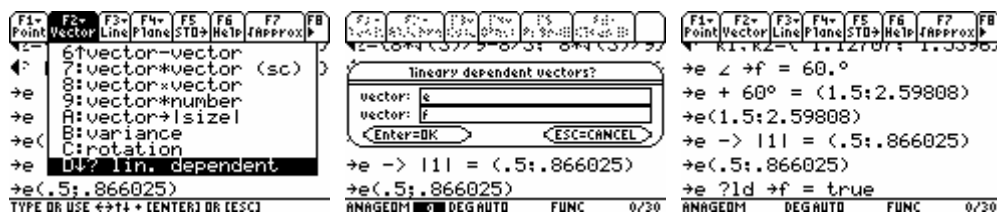
Change the size of vector e to 1.



Press F5.



Are vectors e and f linear independent?



Yes, they are. So they cannot be understood as coordinates any more.

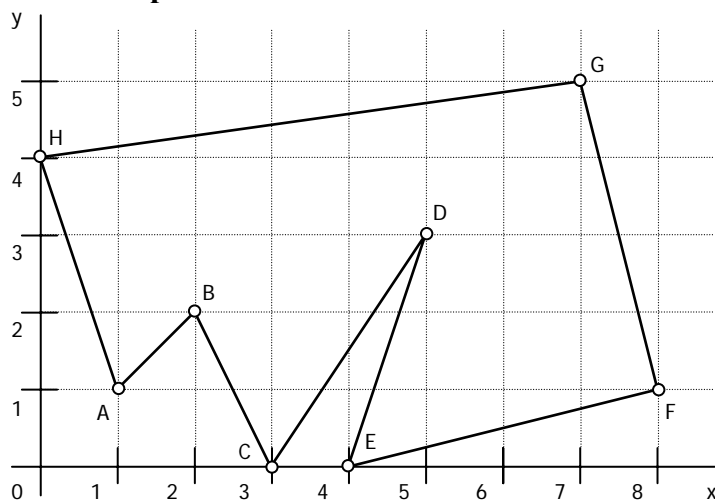
How you can express vector g by sum of vectors e and f?

It is tricky question because e and f are not coordinates. Let's see:



Exactly as I have said. Press ENTER and ESC.

Start new problem and calculate the area and the centre of gravity of this polygon.



```

F1 F2 F3 F4
4 Problem LonSue3e Exit
1:show 1.1270r 1.3396
2:new 50.0
3: + 60° = (1.5;2.59808)
4:(1.5;2.59808)
5: -> |l| = (.5;.866025)
6:(.5;.866025)
7: ?ld +f = true
ANAGEDM DEGAUTO FUNC 0/30

```

Enter all points A through H.

enter point

name: a

x: 1

y: 1

z:

<Enter=OK> <ESC=CANCEL>

```

F1 F2 F3 F4 F5 F6 F7 F8
Point Vector Line Plane STD Help fApprox
A[1.;1.]
A[1.;1.]
B[2.;2.]
C[3.;0.]
D[5.;3.]
E[4.;0.]
F[8.;1.]

```

ANAGEDM DEGAUTO FUNC 0/30

ANAGEDM DEGAUTO FUNC 0/30

```

F1 F2 F3 F4 F5 F6 F7 F8
Point Vector Line Plane STD Help fApprox
G[7.;5.]
H[0.;4.]

```

ANAGEDM DEGAUTO FUNC 0/30

```

F1 F2 F3 F4 F5 F6 F7 F8
Point Vector Line Plane STD Help fApprox
2:show
3:distance 2 points
4:part of abscissa
5:point+vector
6:point-vector
7:centre of gravity
8:area of 3D
9:area of 2D polygon
H[0.;4.]

```

TYPE OR USE <+>+<ENTER> OR <ESC>

```

F1 F2 F3 F4 F5 F6 F7 F8
Point Vector Line Plane STD Help fApprox
C[3.;0.]
D[5.;3.]
E[4.;0.]
F[8.;1.]
G[7.;5.]
H[0.;4.]

```

ANAGEDM DEGAUTO FUNC 0/30

```

F1 F2 F3 F4 F5 F6 F7 F8
Point Vector Line Plane STD Help fApprox
C[3.;0.]
D[5.;3.]
E[4.;0.]
F[8.;1.]
G[7.;5.]
H[0.;4.]
area ABCDEFGH = 26.

```

ANAGEDM DEGAUTO FUNC 1/30

```

F1 F2 F3 F4 F5 F6 F7 F8
Point Vector Line Plane STD Help fApprox
1:enter [x,y,(z)]
2:show
3:distance 2 points
4:part of abscissa
5:point+vector
6:point-vector
7:centre of gravity
8:area of 3D

```

area ABCDEFGH = 26.

ANAGEDM DEGAUTO FUNC 1/30

```

F1 F2 F3 F4 F5 F6 F7 F8
Point Vector Line Plane STD Help fApprox
C[3.;0.]
D[5.;3.]
E[4.;0.]
F[8.;1.]
G[7.;5.]
H[0.;4.]

```

area ABCDEFGH = 26.

ANAGEDM DEGAUTO FUNC 1/30

```

F1 F2 F3 F4 F5 F6 F7 F8
Point Vector Line Plane STD Help fApprox
C[3.;0.]
D[5.;3.]
E[4.;0.]
F[8.;1.]
G[7.;5.]
H[0.;4.]
area ABCDEFGH = 26.
centre of gr. ABCDEFGH = [3.75;2.]

```

ANAGEDM DEGAUTO FUNC 1/30

```

F1 F2 F3 F4 F5 F6 F7 F8
Point Vector Line Plane STD Help fApprox
C[3.;0.]
D[5.;3.]
E[4.;0.]
F[8.;1.]
G[7.;5.]
H[0.;4.]
area ABCDEFGH = 26.
4: gr. ABCDEFGH = [3.75;2.]

```

ANAGEDM DEGAUTO FUNC 1/30

Enjoy Anageom! And remember – if you like it, donate, please. More info in readme.txt.