The usage of “dualgraph” by examples

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1. Download Risa/Asir from http://www.math.kobe-u.ac.jp/Asir/

2. Install Risa/Asir according to manual.

3. Carry out Asir.

The package is the file dualgraph.rr in the directory 'asir-contrib/fj_curve'.
Attention: The file “dualgraph.rr” contains Japanese jis code.

This is Risa/Asir, Version 20051106 (Kobe Distribution).
Copyright (C) 1994-2000, all rights reserved, FUJITSU LABORATORIES LIMITED.
GC 6.5 Copyright 1988-2005, H-J. Boehm, A. J. Demers, Xerox, SGI, HP.
PARI 2.0.17, copyright 1989-1999, C. Batut, K. Belabas, D. Bernardi,
H. Cohen and M. Olivier.
Debug windows of ox servers will not be opened. Set Xm_noX=0 to open it.
OpenXM/Risa/Asir-Contrib(20040302), Copyright 2000-2004, OpenXM.org committers
ox_help(0); ox_help("keyword"); ox_grep("keyword");
for help messages (unix version only).
[1217] load("gr")$
[1323] load("sp")$
[1425] load("fj_curve/dualgraph.rr")$
[1479] dual_graph((y^2-x^3)^2-y^7)$
*** Newton Polygon ***
[[0,4],[6,0]]
[[0,2],[9,0]]
***** Dual Graph *****
[3,[2,b1],2]
b1: [2, 2, 2, 3, [1, b2], 2]  
b2:*  
[1480]  
This result means following dual graph.

[194] F=((-x^2+y^3)^2-x^5)*((-x^2+y^3)^2-y^9)  
*((-x^2+y^3)^2-x^7)*(x^4+y^5)$  
[195] dual_graph(F)$  
*** Newton Polygon ***  
[[0, 27], [4, 17], [12, 5], [16, 0]]  
[[0, 2], [5, 0]]  
[[0, 2], [6, 0]]  
[[0, 2], [9, 0]]  
***** Dual graph *****  
[2, [2, b1], 4, [4, b2, b3], 2, [1, b4], 5]  
b1: [2, 3, [1, b5], 2]  
b5:*  
b2: [2, 2, [1, b6, b7]]  
b6:*  
b7:*  
b3: [2, 2, 2, [1, b8], 2]  
b8:*  
b4:*  

“b1,b2,b3,b4” mean another branches from these vertices.

[2, [2, b1], 4, [4, b2, b3], 2, [1, b4], 5]  

$\triangleright$  

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The list "b1:..." means the dual graph of the branch "b1".

b1:[2,3,[1,b5],2]

Therefore we get following dual graph.