**********9-CAGE-2**********

Edges of 9-CAGE-2:

```
( 18  42) (  7  15) (  5  48) ( 33  34) ( 57  58) (  2  52)
( 36  37) ( 26  27) ( 23  24) (  6   7) (  4   5) ( 16  17)
( 58   1) ( 14  56) ( 34  35) ( 17  26) ( 55  56) ( 39  40)
( 49  50) ( 30  31) ( 29  30) ( 11  49) ( 31  32) ( 45  46)
( 28  29) (  3   4) ( 20  21) ( 11  12) ( 46  47) ( 22  23)
( 12  32) ( 47  48) ( 47  57) ( 24  33) ( 19  58) ( 35  53)
( 20  36) ( 54  55) (  8   9) (  6  34) ( 15  16) ( 28  55)
(  7   8) (  1   2) ( 41  54) ( 41  42) ( 22  50) ( 12  13)
( 37  38) ( 19  20) ( 32  33) ( 42  43) ( 48  49) ( 50  51)
( 44  45) ( 31  43) ( 21  29) ( 53  54) ( 37  45) ( 10  27)
( 27  28) ( 10  11) (  2   3) ( 24  25) (  5   6) (  9  10)
( 51  52) ( 14  15) ( 17  18) (  4  39) ( 13  14) (  1   9)
( 25  46) ( 40  41) ( 18  19) (  3  30) ( 56  57) ( 13  38)
( 16  51) (  8  44) ( 25  26) ( 43  44) ( 23  40) ( 52  53)
( 21  22) ( 35  36) ( 38  39)
```

Chromatic polynomial relative the tree basis:

$$
\begin{aligned}
P(9-CAGE-2,x) = {} & \\
& +1x*(x-1)^{57} \\
& -30x*(x-1)^{56} \\
& +465x*(x-1)^{55} \\
& -4960x*(x-1)^{54} \\
& +40920x*(x-1)^{53} \\
& -278256x*(x-1)^{52} \\
& +1623160x*(x-1)^{51} \\
& -8347680x*(x-1)^{50} \\
& +38607923x*(x-1)^{49} \\
& -163008633x*(x-1)^{48} \\
& +635697317x*(x-1)^{47} \\
& -2311273113x*(x-1)^{46} \\
& +7894169329x*(x-1)^{45} \\
& -25487368878x*(x-1)^{44} \\
& +78190999518x*(x-1)^{43} \\
& -228919204936x*(x-1)^{42} \\
& +641917728018x*(x-1)^{41} \\
& -1729315531799x*(x-1)^{40} \\
& +4487248040605x*(x-1)^{39} \\
& -11239006043625x*(x-1)^{38} \\
& +27220167232962x*(x-1)^{37} \\
& -63841505318103x*(x-1)^{36} \\
& +145169713742536x*(x-1)^{35} \\
& -320338885945614x*(x-1)^{34} \\
& +686440695383961x*(x-1)^{33} \\
& -1429096637111759x*(x-1)^{32} \\
& +2891367733187918x*(x-1)^{31} \\
& -5685426703542222x*(x-1)^{30} \\
& +10864147863226687x*(x-1)^{29} \\
& -20168701791571897x*(x-1)^{28} \\
& +36358789462038543x*(x-1)^{27} \\
& -63608030891972315x*(x-1)^{26} \\
& +107901688140279070x*(x-1)^{25} \\
& -177304180885041666x*(x-1)^{24} \\
& +281876360691586234x*(x-1)^{23} \\
& -432942013757365367x*(x-1)^{22} \\
& +641379242755355419x*(x-1)^{21} \\
& -914717735410876258x*(x-1)^{20} \\
& +1253131905382997427x*(x-1)^{19} \\
& -1644961825464256416x*(x-1)^{18} \\
& +2063085015187762370x*(x-1)^{17} \\
& -2464046689174101679x*(x-1)^{16} \\
& +2791914499444917199x*(x-1)^{15} \\
& -2987915055745635476x*(x-1)^{14} \\
& +3004867050418762713x*(x-1)^{13} \\
& -2822707294260091086x*(x-1)^{12} \\
& +2459242017032873820x*(x-1)^{11} \\
& -1970285144558764244x*(x-1)^{10} \\
& +1436632597687757747x*(x-1)^{9} \\
& -941177679222278678x*(x-1)^{8} \\
& +545042575150884165x*(x-1)^{7} \\
& -273129986908093476x*(x-1)^{6} \\
& +115049268400348013x*(x-1)^{5} \\
& -39064973494175252x*(x-1)^{4} \\
& +10011198440457802x*(x-1)^{3} \\
& -1718401397547040x*(x-1)^{2} \\
& +147871609048616x*(x-1)^{1}
\end{aligned}
$$

Chromatic polynomial relative the standard basis:

$$
\begin{aligned}
P(9-Cage-2,x) = {} & \\
& -29522519283809500916x \\
& +416582020624410209752x^2 \\
& -2958724565458293242653x^3 \\
& +1411599125198829636935 7x^4 \\
& -5092721897507225157555 5x^5 \\
& +1482575395198774918799 40x^6 \\
& -3628408151916815524699 50x^7 \\
& +7678526689762470128027 89x^8 \\
& -1434107137906430997369346x^9 \\
& +2400643826972306769390474x^{10} \\
& -3645141906863511516968849x^{11} \\
& +5068228947911034071007487x^{12} \\
& -6502154397449332342704871x^{13} \\
& +7744578720907576167696927x^{14} \\
& -8607274089691920288540745x^{15} \\
& +8962974712922049184614016x^{16} \\
& -8774534594799184438000344x^{17} \\
& +8098009463807272705682979x^{18} \\
& -7061301277082815642113521x^{19} \\
& +5828015170619180116387421x^{20} \\
& -4559297429036459597729559x^{21} \\
& +3384428455690952953244837x^{22} \\
& -2385761708318819712925954x^{23} \\
& +1597929493534359687410933x^{24} \\
& -1017218407740325142948719x^{25} \\
& +6155266732007994809961 95x^{26} \\
& -3540189745696408057777 04x^{27} \\
& +1934868333173674009253 25x^{28} \\
& -1004504426838587729142 82x^{29} \\
& +4951009345561218630989 7x^{30} \\
& -2315157914609933339594 0x^{31} \\
& +1026253055745452282472 8x^{32} \\
& -4308194508693984346777x^{33} \\
& +1710879847370542578567x^{34} \\
& -641913938386246276955x^{35} \\
& +227219623514364118963x^{36} \\
& -75757945616371882663x^{37} \\
& +23748742304923210130x^{38} \\
& -6985622939594321725x^{39} \\
& +1923696925534323727x^{40} \\
& -494683423815315759x^{41} \\
& +118447892402586603x^{42} \\
& -26322069701398914x^{43} \\
& +5408678553480555x^{44} \\
& -1023266687633415x^{45} \\
& +177366476348610x^{46} \\
& -28005249349518x^{47} \\
& +4000750738739x^{48} \\
& -512916792910x^{49} \\
& +58433559473x^{50} \\
& -5843355957x^{51} \\
& +504981379x^{52} \\
& -36949857x^{53} \\
& +2225895x^{54} \\
& -105995x^{55} \\
& +3741x^{56} \\
& -87x^{57} \\
& +1x^{58}
\end{aligned}
$$

Roots of the chromatic polynomial of 9-CAGE-2:

$x- > 0.$
$x- > 1.$
$x- > 2.$
$x- > 2.68359$
$x- > -0.665839 - 1.15077I$
$x- > -0.665839 + 1.15077I$
$x- > -0.413436 - 1.39167I$
$x- > -0.413436 + 1.39167I$
$x- > -0.179189 - 1.53659I$
$x- > -0.179189 - 1.53659I$
$x- > 0.0381845 - 1.64605I$
$x- > 0.0381845 + 1.64605I$
$x- > 0.24569 - 1.73547I$
$x- > 0.24569 + 1.73547I$
$x- > 0.447373 - 1.81266I$
$x- > 0.447373 + 1.81266I$
$x- > 0.64451 - 1.87127I$
$x- > 0.64451 + 1.87127I$
$x- > 0.828699 - 1.89494I$
$x- > 0.828699 + 1.89494I$
$x- > 0.997446 - 1.88354I$
$x- > 0.997446 + 1.88354I$
$x- > 1.16104 - 1.85053I$
$x- > 1.16104 + 1.85053I$
$x- > 1.32094 - 1.80427I$
$x- > 1.32094 + 1.80427I$
$x- > 1.47817 - 1.74916I$
$x- > 1.47817 + 1.74916I$
$x- > 1.63164 - 1.68627I$
$x- > 1.63164 + 1.68627I$
$x- > 1.78305 - 1.6147I$
$x- > 1.78305 + 1.6147I$
$x- > 1.92641 - 1.53239I$
$x- > 1.92641 + 1.53239I$
$x- > 2.05583 - 1.44736I$
$x- > 2.05583 + 1.44736I$
$x- > 2.16843 - 1.36171I$
$x- > 2.25423 - 1.27417I$
$x- > 2.25423 + 1.27417I$
$x- > 2.32301 - 1.16006I$
$x- > 2.32301 + 1.16006I$
$x- > 2.39445 - 1.03295I$
$x- > 2.39445 + 1.03295I$
$x- > 2.46383 - 0.899204I$
$x- > 2.46383 + 0.899204I$
$x- > 2.5267 - 0.761401I$
$x- > 2.5267 + 0.761401I$
$x- > 2.58251 - 0.625513I$
$x- > 2.58251 + 0.625513I$
$x- > 2.62835 - 0.495088I$
$x- > 2.62835 + 0.495088I$
$x- > 2.65902 - 0.369121I$
$x- > 2.65902 + 0.369121I$
$x- > 2.67518 - 0.244724I$
$x- > 2.67518 + 0.244724I$
$x- > 2.68198 - 0.121817I$
$x- > 2.68198 + 0.121817I$