

***** reading edge list *****

```
( 15,  1) ( 15,  2) ( 15,  3) ( 15,  4) ( 15,  5) ( 15,  6) ( 15,  7)
( 15,  8) ( 15,  9) ( 15, 10) ( 15, 11) ( 15, 12) ( 15, 13) ( 15, 14)
( 14,  1) ( 14,  2) ( 14,  3) ( 14,  4) ( 14,  5) ( 14,  6) ( 14,  7)
( 14,  8) ( 14,  9) ( 14, 10) ( 14, 11) ( 14, 12) ( 14, 13) ( 13,  1)
( 13,  2) ( 13,  3) ( 13,  4) ( 13,  5) ( 13,  6) ( 13,  7) ( 13,  8)
( 13,  9) ( 13, 10) ( 13, 11) ( 13, 12) ( 12,  1) ( 12,  2) ( 12,  3)
( 12,  4) ( 12,  5) ( 12,  6) ( 12,  7) ( 12,  8) ( 12,  9) ( 12, 10)
( 12, 11) ( 11,  1) ( 11,  2) ( 11,  3) ( 11,  4) ( 11,  5) ( 11,  6)
( 11,  7) ( 11,  8) ( 11,  9) ( 11, 10) (  1,  2) (  1,  3) (  1,  4)
(  1,  5) (  1,  6) (  1,  7) (  1,  8) (  1,  9) (  1, 10) (  2,  3)
(  2,  4) (  2,  5) (  2,  6) (  2,  7) (  2,  8) (  2,  9) (  2, 10)
(  3,  4) (  3,  5) (  3,  6) (  3,  7) (  3,  8) (  3,  9) (  3, 10)
(  4,  5) (  4,  6) (  4,  7) (  4,  8) (  4,  9) (  4, 10) (  5,  6)
(  5,  7) (  5,  8) (  5,  9) (  5, 10) (  6,  7) (  6,  8) (  6,  9)
(  6, 10) (  7,  8) (  7,  9) (  7, 10) (  8,  9) (  8, 10) (  9, 10)
```

VERTICES = 15 EDGES = 105

	6227020800 $x^1 y^0$
19802759040 $x^2 y^0$	26596717056 $x^3 y^0$
20313753096 $x^4 y^0$	9957703756 $x^5 y^0$
3336118786 $x^6 y^0$	790943153 $x^7 y^0$
135036473 $x^8 y^0$	16669653 $x^9 y^0$
1474473 $x^{10} y^0$	91091 $x^{11} y^0$
3731 $x^{12} y^0$	91 $x^{13} y^0$
1 $x^{14} y^0$	
6227020800 $x^0 y^1$	70261620480 $x^1 y^1$
161346757248 $x^2 y^1$	171005147040 $x^3 y^1$
104454486500 $x^4 y^1$	40629328740 $x^5 y^1$
10588186609 $x^6 y^1$	1892919600 $x^7 y^1$
232949145 $x^8 y^1$	19399380 $x^9 y^1$
1044043 $x^{10} y^1$	32760 $x^{11} y^1$
455 $x^{12} y^1$	
56685882240 $x^0 y^2$	358789886208 $x^1 y^2$
636247274832 $x^2 y^2$	541937075680 $x^3 y^2$
266465989790 $x^4 y^2$	82324749507 $x^5 y^2$
16632764148 $x^6 y^2$	2223165945 $x^7 y^2$
193903710 $x^8 y^2$	10535525 $x^9 y^2$
320320 $x^{10} y^2$	4095 $x^{11} y^2$

260922969216 $x^0 y^3$	1170587859168 $x^1 y^3$
1662365600896 $x^2 y^3$	1156458503200 $x^3 y^3$
463292684855 $x^4 y^3$	115227021910 $x^5 y^3$
18404796410 $x^6 y^3$	1902285385 $x^7 y^3$
125500375 $x^8 y^3$	5105100 $x^9 y^3$
120120 $x^{10} y^3$	1365 $x^{11} y^3$
817998865320 $x^0 y^4$	2834484909620 $x^1 y^4$
3304186035150 $x^2 y^4$	1907468878315 $x^3 y^4$
632547315400 $x^4 y^4$	129185741685 $x^5 y^4$
16762846100 $x^6 y^4$	1389593205 $x^7 y^4$
72072000 $x^8 y^4$	2177175 $x^9 y^4$
30030 $x^{10} y^4$	
1981020861820 $x^0 y^5$	5545839479180 $x^1 y^5$
5411286267387 $x^2 y^5$	2634181910360 $x^3 y^5$
736138382980 $x^4 y^5$	126283657500 $x^5 y^5$
13713490791 $x^6 y^5$	947926980 $x^7 y^5$
40810770 $x^8 y^5$	1021020 $x^9 y^5$
12012 $x^{10} y^5$	
3978058934850 $x^0 y^6$	9260459096889 $x^1 y^6$
7691713953924 $x^2 y^6$	3208233603575 $x^3 y^6$
769686572655 $x^4 y^6$	113474427066 $x^5 y^6$
10602845253 $x^6 y^6$	630164535 $x^7 y^6$
23017995 $x^8 y^6$	455455 $x^9 y^6$
3003 $x^{10} y^6$	
6931870782837 $x^0 y^7$	13704568267962 $x^1 y^7$
9837465054846 $x^2 y^7$	3570259437745 $x^3 y^7$
748258365855 $x^4 y^7$	96663651084 $x^5 y^7$
7917850941 $x^6 y^7$	408549570 $x^7 y^7$
12425985 $x^8 y^7$	175175 $x^9 y^7$
10816728894543 $x^0 y^8$	18469848405294 $x^1 y^8$
11616160416003 $x^2 y^8$	3720654912975 $x^3 y^8$
691783377285 $x^4 y^8$	79571091600 $x^5 y^8$
5801585790 $x^6 y^8$	263852160 $x^7 y^8$
6853275 $x^8 y^8$	75075 $x^9 y^8$
15463613411675 $x^0 y^9$	23128146888990 $x^1 y^9$
12903431917805 $x^2 y^9$	3694442907155 $x^3 y^9$
617522455550 $x^4 y^9$	64055461470 $x^5 y^9$
4198744550 $x^6 y^9$	168348180 $x^7 y^9$
3603600 $x^8 y^9$	25025 $x^9 y^9$

20601314929195 $x^0 y^{10}$	27318477073888 $x^1 y^{10}$
13671657481482 $x^2 y^{10}$	3538475260320 $x^3 y^{10}$
537500733770 $x^4 y^{10}$	50726192517 $x^5 y^{10}$
2998533538 $x^6 y^{10}$	104834730 $x^7 y^{10}$
1756755 $x^8 y^{10}$	5005 $x^9 y^{10}$
25911983950853 $x^0 y^{11}$	30790245541783 $x^1 y^{11}$
13959684113739 $x^2 y^{11}$	3297438626755 $x^3 y^{11}$
459075150170 $x^4 y^{11}$	39643870266 $x^5 y^{11}$
2113955844 $x^6 y^{11}$	63843780 $x^7 y^{11}$
810810 $x^8 y^{11}$	
31082753713739 $x^0 y^{12}$	33409083157450 $x^1 y^{12}$
13842118984876 $x^2 y^{12}$	3008077620275 $x^3 y^{12}$
386324389815 $x^4 y^{12}$	30631633032 $x^5 y^{12}$
1470587118 $x^6 y^{12}$	37972935 $x^7 y^{12}$
360360 $x^8 y^{12}$	
35843302234103 $x^0 y^{13}$	35140129433514 $x^1 y^{13}$
13406153607378 $x^2 y^{13}$	2697929814580 $x^3 y^{13}$
321112621830 $x^4 y^{13}$	23398580205 $x^5 y^{13}$
1005014010 $x^6 y^{13}$	21666645 $x^7 y^{13}$
135135 $x^8 y^{13}$	
39986831027130 $x^0 y^{14}$	36022079501355 $x^1 y^{14}$
12736747257300 $x^2 y^{14}$	2386103589870 $x^3 y^{14}$
263938624950 $x^4 y^{14}$	17647414785 $x^5 y^{14}$
671891220 $x^6 y^{14}$	11763180 $x^7 y^{14}$
38610 $x^8 y^{14}$	
43376585602129 $x^0 y^{15}$	36140710536437 $x^1 y^{15}$
11908747074939 $x^2 y^{15}$	2085016578645 $x^3 y^{15}$
214605416025 $x^4 y^{15}$	13125392280 $x^5 y^{15}$
438708270 $x^6 y^{15}$	6074640 $x^7 y^{15}$
6435 $x^8 y^{15}$	
45942008362393 $x^0 y^{16}$	35606556765494 $x^1 y^{16}$
10983985357488 $x^2 y^{16}$	1802257597140 $x^3 y^{16}$
172595998575 $x^4 y^{16}$	9616116510 $x^5 y^{16}$
279309030 $x^6 y^{16}$	2972970 $x^7 y^{16}$
47668816657462 $x^0 y^{17}$	34538364036176 $x^1 y^{17}$
10011282493212 $x^2 y^{17}$	1542069268740 $x^3 y^{17}$
137244006900 $x^4 y^{17}$	6930263340 $x^5 y^{17}$
172792620 $x^6 y^{17}$	1351350 $x^7 y^{17}$

48586516324346 $x^0 y^{18}$	33052042916893 $x^1 y^{18}$
9027822159356 $x^2 y^{18}$	1306435255125 $x^3 y^{18}$
107830923200 $x^4 y^{18}$	4904859960 $x^5 y^{18}$
103283180 $x^6 y^{18}$	540540 $x^7 y^{18}$
48755763101045 $x^0 y^{19}$	31254093815945 $x^1 y^{19}$
8061084386355 $x^2 y^{19}$	1095887067275 $x^3 y^{19}$
83650466900 $x^4 y^{19}$	3404140740 $x^5 y^{19}$
59419360 $x^6 y^{19}$	180180 $x^7 y^{19}$
48257017168360 $x^0 y^{20}$	29238403125932 $x^1 y^{20}$
7130879385630 $x^2 y^{20}$	910055401255 $x^3 y^{20}$
64030696730 $x^4 y^{20}$	2314159848 $x^5 y^{20}$
32792760 $x^6 y^{20}$	45045 $x^7 y^{20}$
47181216475822 $x^0 y^{21}$	27085369678081 $x^1 y^{21}$
6251137994530 $x^2 y^{21}$	747985197960 $x^3 y^{21}$
48332579295 $x^4 y^{21}$	1538854317 $x^5 y^{21}$
17267250 $x^6 y^{21}$	6435 $x^7 y^{21}$
45622670442063 $x^0 y^{22}$	24862417872162 $x^1 y^{22}$
5431292289930 $x^2 y^{22}$	608309328900 $x^3 y^{22}$
35953881600 $x^4 y^{22}$	999143145 $x^5 y^{22}$
8588580 $x^6 y^{22}$	
43674021124890 $x^0 y^{23}$	22625170034610 $x^1 y^{23}$
4677275202210 $x^2 y^{23}$	489367411260 $x^3 y^{23}$
26338698750 $x^4 y^{23}$	631891260 $x^5 y^{23}$
3963960 $x^6 y^{23}$	
41422931706520 $x^0 y^{24}$	20418818202965 $x^1 y^{24}$
3992242845045 $x^2 y^{24}$	389305451535 $x^3 y^{24}$
18986542575 $x^4 y^{24}$	388197810 $x^5 y^{24}$
1651650 $x^6 y^{24}$	
38950106250328 $x^0 y^{25}$	18279450613151 $x^1 y^{25}$
3377113995255 $x^2 y^{25}$	306163027170 $x^3 y^{25}$
13456953510 $x^4 y^{25}$	231026796 $x^5 y^{25}$
600600 $x^6 y^{25}$	
36328266711373 $x^0 y^{26}$	16235225677958 $x^1 y^{26}$
2830991396310 $x^2 y^{26}$	237946443735 $x^3 y^{26}$
9369480120 $x^4 y^{26}$	132756624 $x^5 y^{26}$
180180 $x^6 y^{26}$	

33621771577394 $x^0 y^{27}$	14307367693696 $x^1 y^{27}$
2351510773535 $x^2 y^{27}$	182690853345 $x^3 y^{27}$
6401895500 $x^4 y^{27}$	73333260 $x^5 y^{27}$
40040 $x^6 y^{27}$	
30886633149515 $x^0 y^{28}$	12511009573205 $x^1 y^{28}$
1935153195690 $x^2 y^{28}$	138514421045 $x^3 y^{28}$
4287408125 $x^4 y^{28}$	38693655 $x^5 y^{28}$
5005 $x^6 y^{28}$	
28170765485005 $x^0 y^{29}$	10855932897095 $x^1 y^{29}$
1577539437045 $x^2 y^{29}$	103662453895 $x^3 y^{29}$
2810232425 $x^4 y^{29}$	19324305 $x^5 y^{29}$
25514360840683 $x^0 y^{30}$	9347252963620 $x^1 y^{30}$
1273706955235 $x^2 y^{30}$	76538632170 $x^3 y^{30}$
1799772975 $x^4 y^{30}$	9018009 $x^5 y^{30}$
22950340214802 $x^0 y^{31}$	7986077884785 $x^1 y^{31}$
1018361564220 $x^2 y^{31}$	55722857190 $x^3 y^{31}$
1124052930 $x^4 y^{31}$	3864861 $x^5 y^{31}$
20504852017650 $x^0 y^{32}$	6770151247860 $x^1 y^{32}$
806095995705 $x^2 y^{32}$	39977392455 $x^3 y^{32}$
683107425 $x^4 y^{32}$	1486485 $x^5 y^{32}$
18197806627000 $x^0 y^{33}$	5694475099040 $x^1 y^{33}$
631571366790 $x^2 y^{33}$	28244038095 $x^3 y^{33}$
402866100 $x^4 y^{33}$	495495 $x^5 y^{33}$
16043439594910 $x^0 y^{34}$	4751904432275 $x^1 y^{34}$
489661395405 $x^2 y^{34}$	19635058170 $x^3 y^{34}$
229790925 $x^4 y^{34}$	135135 $x^5 y^{34}$
14050897073005 $x^0 y^{35}$	3933703264244 $x^1 y^{35}$
375561221490 $x^2 y^{35}$	13419716310 $x^3 y^{35}$
126216090 $x^4 y^{35}$	27027 $x^5 y^{35}$
12224836028249 $x^0 y^{36}$	3230052877207 $x^1 y^{36}$
284863153575 $x^2 y^{36}$	9007753755 $x^3 y^{36}$
66381315 $x^4 y^{36}$	3003 $x^5 y^{36}$
10566030109271 $x^0 y^{37}$	2630504021509 $x^1 y^{37}$
213602368980 $x^2 y^{37}$	5931225300 $x^3 y^{37}$
33183150 $x^4 y^{37}$	

9071970442535 $x^0 y^{38}$	2124367219975 $x^1 y^{38}$
158276643525 $x^2 y^{38}$	3826017195 $x^3 y^{38}$
15615600 $x^4 y^{38}$	
7737449935215 $x^0 y^{39}$	1701038461045 $x^1 y^{39}$
115844862210 $x^2 y^{39}$	2414106695 $x^3 y^{39}$
6831825 $x^4 y^{39}$	
6555120095524 $x^0 y^{40}$	1350260722888 $x^1 y^{40}$
83709202500 $x^2 y^{40}$	1487285800 $x^3 y^{40}$
2732730 $x^4 y^{40}$	
5516010764264 $x^0 y^{41}$	1062324387124 $x^1 y^{41}$
59685570945 $x^2 y^{41}$	892761870 $x^3 y^{41}$
975975 $x^4 y^{41}$	
4610005107422 $x^0 y^{42}$	828211457788 $x^1 y^{42}$
41966294370 $x^2 y^{42}$	520790270 $x^3 y^{42}$
300300 $x^4 y^{42}$	
3826264377650 $x^0 y^{43}$	639689624860 $x^1 y^{43}$
29078394345 $x^2 y^{43}$	294314020 $x^3 y^{43}$
75075 $x^4 y^{43}$	
3153599048600 $x^0 y^{44}$	489362806660 $x^1 y^{44}$
19840176720 $x^2 y^{44}$	160507620 $x^3 y^{44}$
13650 $x^4 y^{44}$	
2580784859380 $x^0 y^{45}$	370685114800 $x^1 y^{45}$
13318358235 $x^2 y^{45}$	84066710 $x^3 y^{45}$
1365 $x^4 y^{45}$	
2096824075710 $x^0 y^{46}$	277945260775 $x^1 y^{46}$
8787429105 $x^2 y^{46}$	42031990 $x^3 y^{46}$
1691153856665 $x^0 y^{47}$	206228209915 $x^1 y^{47}$
5692426740 $x^2 y^{47}$	19909890 $x^3 y^{47}$
1353804951135 $x^0 y^{48}$	151360400555 $x^1 y^{48}$
3615822210 $x^2 y^{48}$	8848840 $x^3 y^{48}$
1075514985545 $x^0 y^{49}$	109844155850 $x^1 y^{49}$
2248826580 $x^2 y^{49}$	3643640 $x^3 y^{49}$

847801325800 $x^0 y^{50}$
1367115750 $x^2 y^{50}$

78786110975 $x^1 y^{50}$
1366365 $x^3 y^{50}$

662998916580 $x^0 y^{51}$
810749940 $x^2 y^{51}$

55823632865 $x^1 y^{51}$
455455 $x^3 y^{51}$

514268654900 $x^0 y^{52}$
467920530 $x^2 y^{52}$

39052380290 $x^1 y^{52}$
130130 $x^3 y^{52}$

395581786600 $x^0 y^{53}$
262078740 $x^2 y^{53}$

26957378525 $x^1 y^{53}$
30030 $x^3 y^{53}$

301685569185 $x^0 y^{54}$
141966825 $x^2 y^{54}$

18349285955 $x^1 y^{54}$
5005 $x^3 y^{54}$

228055061234 $x^0 y^{55}$
74070360 $x^2 y^{55}$

12306915530 $x^1 y^{55}$
455 $x^3 y^{55}$

170835410941 $x^0 y^{56}$
37035180 $x^2 y^{56}$

8126550575 $x^1 y^{56}$

126778458495 $x^0 y^{57}$
17635800 $x^2 y^{57}$

5278170300 $x^1 y^{57}$

93176873790 $x^0 y^{58}$
7936110 $x^2 y^{58}$

3368375010 $x^1 y^{58}$

67798453905 $x^0 y^{59}$
3341520 $x^2 y^{59}$

2109567915 $x^1 y^{59}$

48822629947 $x^0 y^{60}$
1299480 $x^2 y^{60}$

1294799415 $x^1 y^{60}$

34780700318 $x^0 y^{61}$
458640 $x^2 y^{61}$

777598185 $x^1 y^{61}$

24500831355 $x^0 y^{62}$
143325 $x^2 y^{62}$

456087450 $x^1 y^{62}$

17058454985 $x^0 y^{63}$
38220 $x^2 y^{63}$

260700570 $x^1 y^{63}$

11732349850 $x^0 y^{64}$
8190 $x^2 y^{64}$

144854580 $x^1 y^{64}$

7966416549 $x^0 y^{65}$ 1260 $x^2 y^{65}$	78003030 $x^1 y^{65}$
5336945796 $x^0 y^{66}$ 105 $x^2 y^{66}$	40562235 $x^1 y^{66}$
3525025140 $x^0 y^{67}$	20281170 $x^1 y^{67}$
2293628610 $x^0 y^{68}$	9699690 $x^1 y^{68}$
1468876500 $x^0 y^{69}$	4408950 $x^1 y^{69}$
924931410 $x^0 y^{70}$	1889550 $x^1 y^{70}$
572003640 $x^0 y^{71}$	755820 $x^1 y^{71}$
346966620 $x^0 y^{72}$	278460 $x^1 y^{72}$
206124555 $x^0 y^{73}$	92820 $x^1 y^{73}$
119724150 $x^0 y^{74}$	27300 $x^1 y^{74}$
67855515 $x^0 y^{75}$	6825 $x^1 y^{75}$
37440585 $x^0 y^{76}$	1365 $x^1 y^{76}$
20058090 $x^0 y^{77}$	195 $x^1 y^{77}$
10400585 $x^0 y^{78}$	15 $x^1 y^{78}$
5200300 $x^0 y^{79}$	
2496144 $x^0 y^{80}$	
1144066 $x^0 y^{81}$	
497420 $x^0 y^{82}$	
203490 $x^0 y^{83}$	
77520 $x^0 y^{84}$	
27132 $x^0 y^{85}$	
8568 $x^0 y^{86}$	

2380 $x^0 y^{87}$

560 $x^0 y^{88}$

105 $x^0 y^{89}$

14 $x^0 y^{90}$

1 $x^0 y^{91}$

Number of spanning trees: st = 1946195068359375

TEST: tutteMat[ONE][ZERO]==tutteMat[ZERO][ONE] passed

TEST: tutteMat[TWO][ZERO]-tutteMat[ONE][ONE]+tutteMat[ZERO][TWO]==tutteMat[ONE][ZERO] passed

TEST: tutteMat[THREE][ZERO]-tutteMat[TWO][ONE]+tutteMat[ONE][TWO]-tutteMat[ZERO][THREE]==tutteMat[ONE][ONE] passed

threshold	graphs	matches	ratio
15	1	0	0.00
14	14	0	0.00
13	28	245	8.75
12	40	629	15.72
11	50	1044	20.88
10	58	1433	24.71
9	64	1751	27.36
8	68	1965	28.90
total	323	7067	21.88

14.85u 0.18s 0:45.37 33.1%