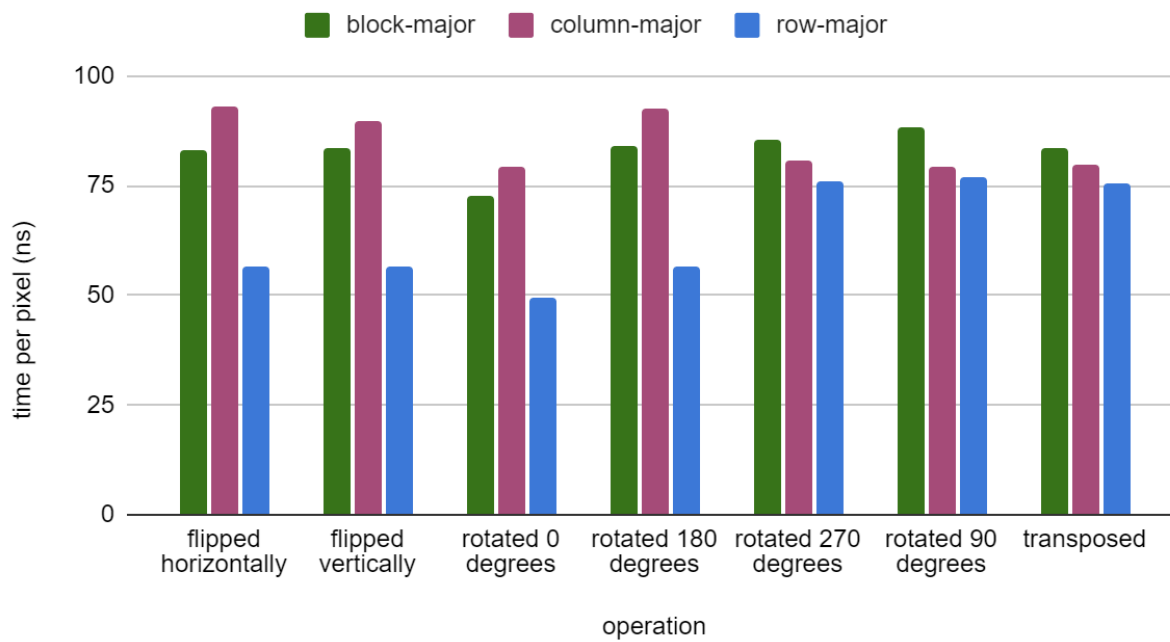


Our data visualized:

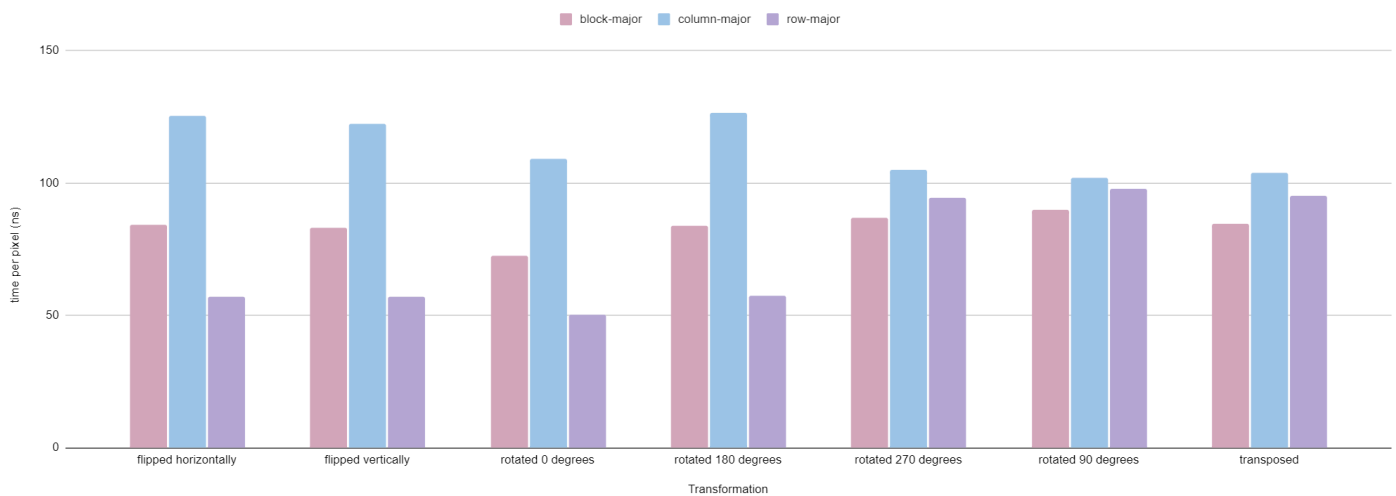
This shows the average time it took for *all* of our tests for each rotation and major.

Average Time Per Pixel For All Images



Our visualized data for just the bigger images (that were scaled up to more than 1 million pixels):

Average Time Per Pixel For Images With >1,000,000 Pixels



Note that our analysis in the README is based on the above image, not *all* of our tests (as many of them ran in a few *microseconds*).

Our tests (tabulated):

We ran *each transformation* under *each mapping type* for every *single* .ppm file in the /comp/40/bin/images directory (using a shell script). We kept track of the size of the image and the time it took to analyze each pixel. We then scaled each image up by a certain factor to see more interesting results (and put them in a separate table and displayed them above).

Image Name	Transformation	Mapping Type	Time(ns)	# of pixels	Time per pixel(ns)
animals.ppm	flipped horizontally	block-major	9709989	120000	80.916575
animals.ppm	flipped horizontally	column-major	7666143	120000	63.884525
animals.ppm	flipped horizontally	row-major	6775183	120000	56.459858
animals.ppm	flipped vertically	block-major	9781844	120000	81.515367
animals.ppm	flipped vertically	column-major	7635490	120000	63.629083
animals.ppm	flipped vertically	row-major	6809537	120000	56.746142
animals.ppm	rotated 0 degrees	block-major	8647838	120000	72.065317
animals.ppm	rotated 0 degrees	column-major	7004982	120000	58.37485
animals.ppm	rotated 0 degrees	row-major	6017163	120000	50.143025
animals.ppm	rotated 180 degrees	block-major	10264668	120000	85.5389
animals.ppm	rotated 180 degrees	column-major	7771726	120000	64.764383
animals.ppm	rotated 180 degrees	row-major	6802074	120000	56.68395
animals.ppm	rotated 270 degrees	block-major	9981985	120000	83.183208
animals.ppm	rotated 270 degrees	column-major	7310940	120000	60.9245
animals.ppm	rotated 270 degrees	row-major	7625185	120000	63.543208
animals.ppm	rotated 90 degrees	block-major	10005237	120000	83.376975
animals.ppm	rotated 90 degrees	column-major	7249063	120000	60.408858
animals.ppm	rotated 90 degrees	row-major	7388648	120000	61.572067
animals.ppm	transposed	block-major	9762386	120000	81.353217
animals.ppm	transposed	column-major	7543676	120000	62.863967
animals.ppm	transposed	row-major	7371485	120000	61.429042
segfault.ppm	flipped horizontally	row-major	45595107	821636	55.493074
segfault.ppm	flipped horizontally	column-major	62944145	821636	76.60831
segfault.ppm	flipped horizontally	block-major	67754330	821636	82.462709
segfault.ppm	flipped vertically	row-major	45883256	821636	55.843775
segfault.ppm	flipped vertically	column-major	63358772	821636	77.112945
segfault.ppm	flipped vertically	block-major	67293053	821636	81.901296
segfault.ppm	rotated 0 degrees	row-major	39647689	821636	48.254566
segfault.ppm	rotated 0 degrees	column-major	52848095	821636	64.320569
segfault.ppm	rotated 0 degrees	block-major	59542024	821636	72.467643
segfault.ppm	rotated 180 degrees	row-major	45980434	821636	55.962049
segfault.ppm	rotated 180 degrees	column-major	66345670	821636	80.748251

segfault.ppm	rotated 180 degrees	block-major	66950477	821636	81.484352
segfault.ppm	rotated 270 degrees	row-major	54170726	821636	65.930322
segfault.ppm	rotated 270 degrees	column-major	56292494	821636	68.512692
segfault.ppm	rotated 270 degrees	block-major	70003415	821636	85.200034
segfault.ppm	rotated 90 degrees	row-major	53934192	821636	65.64244
segfault.ppm	rotated 90 degrees	column-major	56354871	821636	68.58861
segfault.ppm	rotated 90 degrees	block-major	72534964	821636	88.281142
segfault.ppm	transposed	row-major	53946276	821636	65.657147
segfault.ppm	transposed	column-major	55567006	821636	67.629712
segfault.ppm	transposed	block-major	68805246	821636	83.741762
in-wind-cave.ppm	flipped horizontally	row-major	20977412	373728	56.130159
in-wind-cave.ppm	flipped horizontally	column-major	27001464	373728	72.248973
in-wind-cave.ppm	flipped horizontally	block-major	31089877	373728	83.188514
in-wind-cave.ppm	flipped vertically	row-major	20458351	373728	54.741285
in-wind-cave.ppm	flipped vertically	column-major	26604458	373728	71.186687
in-wind-cave.ppm	flipped vertically	block-major	30830770	373728	82.49521
in-wind-cave.ppm	rotated 0 degrees	row-major	18984643	373728	50.798022
in-wind-cave.ppm	rotated 0 degrees	column-major	23554181	373728	63.02493
in-wind-cave.ppm	rotated 0 degrees	block-major	27428384	373728	73.391301
in-wind-cave.ppm	rotated 180 degrees	row-major	20571303	373728	55.043516
in-wind-cave.ppm	rotated 180 degrees	column-major	26480486	373728	70.854969
in-wind-cave.ppm	rotated 180 degrees	block-major	30936749	373728	82.778783
in-wind-cave.ppm	rotated 270 degrees	row-major	23666474	373728	63.325397
in-wind-cave.ppm	rotated 270 degrees	column-major	24365405	373728	65.195557
in-wind-cave.ppm	rotated 270 degrees	block-major	31485390	373728	84.246805
in-wind-cave.ppm	rotated 90 degrees	row-major	23286084	373728	62.307571
in-wind-cave.ppm	rotated 90 degrees	column-major	23655814	373728	63.296874
in-wind-cave.ppm	rotated 90 degrees	block-major	31737854	373728	84.922334
in-wind-cave.ppm	transposed	row-major	23636405	373728	63.24494
in-wind-cave.ppm	transposed	column-major	23553971	373728	63.024368
in-wind-cave.ppm	transposed	block-major	31366400	373728	83.928419
erosion.ppm	flipped horizontally	row-major	20946456	373728	56.047329
erosion.ppm	flipped horizontally	column-major	30664393	373728	82.050028
erosion.ppm	flipped horizontally	block-major	30725947	373728	82.214731
erosion.ppm	flipped vertically	row-major	21404537	373728	57.273035
erosion.ppm	flipped vertically	column-major	25097016	373728	67.15316
erosion.ppm	flipped vertically	block-major	30834103	373728	82.504129
erosion.ppm	rotated 0 degrees	row-major	18347012	373728	49.091885

erosion.ppm	rotated 0 degrees	column-major	22346491	373728	59.793462
erosion.ppm	rotated 0 degrees	block-major	27026756	373728	72.316647
erosion.ppm	rotated 180 degrees	row-major	20691505	373728	55.365145
erosion.ppm	rotated 180 degrees	column-major	24970749	373728	66.815302
erosion.ppm	rotated 180 degrees	block-major	30921917	373728	82.739096
erosion.ppm	rotated 270 degrees	row-major	24550547	373728	65.690949
erosion.ppm	rotated 270 degrees	column-major	24166196	373728	64.662525
erosion.ppm	rotated 270 degrees	block-major	33775524	373728	90.374615
erosion.ppm	rotated 90 degrees	row-major	25182321	373728	67.381414
erosion.ppm	rotated 90 degrees	column-major	27676779	373728	74.055942
erosion.ppm	rotated 90 degrees	block-major	45078644	373728	120.618856
erosion.ppm	transposed	row-major	23372698	373728	62.539328
erosion.ppm	transposed	column-major	24237104	373728	64.852256
erosion.ppm	transposed	block-major	31049720	373728	83.081064
from stdin	flipped horizontally	row-major	687289764	12000000	57.274147
from stdin	flipped horizontally	column-major	1489121485	12000000	124.093457
from stdin	flipped horizontally	block-major	1041005162	12000000	86.75043
from stdin	flipped vertically	row-major	680893243	12000000	56.741104
from stdin	flipped vertically	column-major	1415195787	12000000	117.932982
from stdin	flipped vertically	block-major	999475877	12000000	83.289656
from stdin	rotated 0 degrees	row-major	601244381	12000000	50.103698
from stdin	rotated 0 degrees	column-major	1241237863	12000000	103.436489
from stdin	rotated 0 degrees	block-major	877455899	12000000	73.121325
from stdin	rotated 180 degrees	row-major	682330325	12000000	56.86086
from stdin	rotated 180 degrees	column-major	1452215813	12000000	121.017984
from stdin	rotated 180 degrees	block-major	990217385	12000000	82.518115
from stdin	rotated 270 degrees	row-major	1112362840	12000000	92.696903
from stdin	rotated 270 degrees	column-major	1151136977	12000000	95.928081
from stdin	rotated 270 degrees	block-major	1037315264	12000000	86.442939
from stdin	rotated 90 degrees	row-major	1059808516	12000000	88.317376
from stdin	rotated 90 degrees	column-major	1127790668	12000000	93.982556
from stdin	rotated 90 degrees	block-major	1068720678	12000000	89.060057
from stdin	transposed	row-major	1033344278	12000000	86.112023
from stdin	transposed	column-major	1111250390	12000000	92.604199
from stdin	transposed	block-major	1004332742	12000000	83.694395
from stdin	flipped horizontally	row-major	2157771728	37372800	57.736421
from stdin	flipped horizontally	column-major	5402102816	37372800	144.546376
from stdin	flipped horizontally	block-major	3126638227	37372800	83.660797

from stdin	flipped vertically	row-major	2154380556	37372800	57.645682
from stdin	flipped vertically	column-major	4999889723	37372800	133.784189
from stdin	flipped vertically	block-major	3087962994	37372800	82.625947
from stdin	rotated 0 degrees	row-major	1914947338	37372800	51.239065
from stdin	rotated 0 degrees	column-major	4641189268	37372800	124.186287
from stdin	rotated 0 degrees	block-major	2728542920	37372800	73.00879
from stdin	rotated 180 degrees	row-major	2169780829	37372800	58.057754
from stdin	rotated 180 degrees	column-major	5416147507	37372800	144.922176
from stdin	rotated 180 degrees	block-major	3196543713	37372800	85.531288
from stdin	rotated 270 degrees	row-major	4215749447	37372800	112.802612
from stdin	rotated 270 degrees	column-major	4387379256	37372800	117.394984
from stdin	rotated 270 degrees	block-major	3211820972	37372800	85.940068
from stdin	rotated 90 degrees	row-major	4118566139	37372800	110.202236
from stdin	rotated 90 degrees	column-major	4480455479	37372800	119.885464
from stdin	rotated 90 degrees	block-major	3360859664	37372800	89.92796
from stdin	transposed	row-major	4257305165	37372800	113.914536
from stdin	transposed	column-major	4334417492	37372800	115.977863
from stdin	transposed	block-major	3179355521	37372800	85.071376
from stdin	flipped horizontally	row-major	2144881074	37372800	57.391501
from stdin	flipped horizontally	column-major	5376496415	37372800	143.861215
from stdin	flipped horizontally	block-major	3260558383	37372800	87.244156
from stdin	flipped vertically	row-major	2165791360	37372800	57.951006
from stdin	flipped vertically	column-major	5056262230	37372800	135.292572
from stdin	flipped vertically	block-major	3107707010	37372800	83.154246
from stdin	rotated 0 degrees	row-major	1915461786	37372800	51.252831
from stdin	rotated 0 degrees	column-major	4609894629	37372800	123.348923
from stdin	rotated 0 degrees	block-major	2723406530	37372800	72.871354
from stdin	rotated 180 degrees	row-major	2156300488	37372800	57.697055
from stdin	rotated 180 degrees	column-major	5451088350	37372800	145.857103
from stdin	rotated 180 degrees	block-major	3153193564	37372800	84.371349
from stdin	rotated 270 degrees	row-major	4361265484	37372800	116.696247
from stdin	rotated 270 degrees	column-major	4331068878	37372800	115.888263
from stdin	rotated 270 degrees	block-major	3233585807	37372800	86.522439
from stdin	rotated 90 degrees	row-major	4399132006	37372800	117.709457
from stdin	rotated 90 degrees	column-major	4302053006	37372800	115.111873
from stdin	rotated 90 degrees	block-major	3453152205	37372800	92.397471
from stdin	transposed	row-major	4609471228	37372800	123.337594
from stdin	transposed	column-major	4328396699	37372800	115.816762

from stdin	transposed	block-major	3176413118	37372800	84.992645
from stdin	flipped horizontally	row-major	101457014	1800000	56.365008
from stdin	flipped horizontally	column-major	137568977	1800000	76.427209
from stdin	flipped horizontally	block-major	150446743	1800000	83.581524
from stdin	flipped vertically	row-major	100459169	1800000	55.810649
from stdin	flipped vertically	column-major	149167620	1800000	82.8709
from stdin	flipped vertically	block-major	150346363	1800000	83.525757
from stdin	rotated 0 degrees	row-major	87246379	1800000	48.470211
from stdin	rotated 0 degrees	column-major	123236263	1800000	68.464591
from stdin	rotated 0 degrees	block-major	129460156	1800000	71.922309
from stdin	rotated 180 degrees	row-major	99803548	1800000	55.446416
from stdin	rotated 180 degrees	column-major	154347488	1800000	85.748604
from stdin	rotated 180 degrees	block-major	149375222	1800000	82.986234
from stdin	rotated 270 degrees	row-major	127310983	1800000	70.728324
from stdin	rotated 270 degrees	column-major	130663789	1800000	72.590994
from stdin	rotated 270 degrees	block-major	157847777	1800000	87.693209
from stdin	rotated 90 degrees	row-major	126638036	1800000	70.354464
from stdin	rotated 90 degrees	column-major	130519846	1800000	72.511026
from stdin	rotated 90 degrees	block-major	159105234	1800000	88.391797
from stdin	transposed	row-major	129642026	1800000	72.023348
from stdin	transposed	column-major	129300937	1800000	71.833854
from stdin	transposed	block-major	154351923	1800000	85.751068
from stdin	flipped horizontally	row-major	101169114	1818000	55.648578
from stdin	flipped horizontally	column-major	159975746	1818000	87.99546
from stdin	flipped horizontally	block-major	154143501	1818000	84.787404
from stdin	flipped vertically	row-major	102446028	1818000	56.35095
from stdin	flipped vertically	column-major	155027208	1818000	85.273492
from stdin	flipped vertically	block-major	149877691	1818000	82.440974
from stdin	rotated 0 degrees	row-major	89286164	1818000	49.112301
from stdin	rotated 0 degrees	column-major	140687128	1818000	77.385659
from stdin	rotated 0 degrees	block-major	130801617	1818000	71.948084
from stdin	rotated 180 degrees	row-major	100879046	1818000	55.489024
from stdin	rotated 180 degrees	column-major	156188127	1818000	85.912061
from stdin	rotated 180 degrees	block-major	153334445	1818000	84.342379
from stdin	rotated 270 degrees	row-major	129758984	1818000	71.374579
from stdin	rotated 270 degrees	column-major	132546545	1818000	72.907891
from stdin	rotated 270 degrees	block-major	157450146	1818000	86.606241
from stdin	rotated 90 degrees	row-major	130395728	1818000	71.724823

from stdin	rotated 90 degrees	column-major	132528335	1818000	72.897874
from stdin	rotated 90 degrees	block-major	161509984	1818000	88.839375
from stdin	transposed	row-major	127268031	1818000	70.004417
from stdin	transposed	column-major	133468151	1818000	73.414825
from stdin	transposed	block-major	155733634	1818000	85.662065
from stdin	flipped horizontally	row-major	2155442961	37372800	57.67411
from stdin	flipped horizontally	column-major	5533187864	37372800	148.053875
from stdin	flipped horizontally	block-major	3128947834	37372800	83.722596
from stdin	flipped vertically	row-major	2182087741	37372800	58.387055
from stdin	flipped vertically	column-major	5015571800	37372800	134.203801
from stdin	flipped vertically	block-major	3116309646	37372800	83.384431
from stdin	rotated 0 degrees	row-major	1915926836	37372800	51.265274
from stdin	rotated 0 degrees	column-major	4675990132	37372800	125.117469
from stdin	rotated 0 degrees	block-major	2682255240	37372800	71.770251
from stdin	rotated 180 degrees	row-major	2171934720	37372800	58.115387
from stdin	rotated 180 degrees	column-major	5469543488	37372800	146.350915
from stdin	rotated 180 degrees	block-major	3245221771	37372800	86.833787
from stdin	rotated 270 degrees	row-major	4383431649	37372800	117.289356
from stdin	rotated 270 degrees	column-major	4397054561	37372800	117.65387
from stdin	rotated 270 degrees	block-major	3213030238	37372800	85.972425
from stdin	rotated 90 degrees	row-major	4337342749	37372800	116.056136
from stdin	rotated 90 degrees	column-major	4314488075	37372800	115.444603
from stdin	rotated 90 degrees	block-major	3368129237	37372800	90.122475
from stdin	transposed	row-major	4394227504	37372800	117.578225
from stdin	transposed	column-major	4329059669	37372800	115.834502
from stdin	transposed	block-major	3155368808	37372800	84.429553
from stdin	flipped horizontally	row-major	823762577	14308900	57.569944
from stdin	flipped horizontally	column-major	1804108170	14308900	126.082939
from stdin	flipped horizontally	block-major	1195232950	14308900	83.530736
from stdin	flipped vertically	row-major	829054942	14308900	57.93981
from stdin	flipped vertically	column-major	1798072413	14308900	125.661121
from stdin	flipped vertically	block-major	1183215451	14308900	82.690874
from stdin	rotated 0 degrees	row-major	732822198	14308900	51.214433
from stdin	rotated 0 degrees	column-major	1554027623	14308900	108.605667
from stdin	rotated 0 degrees	block-major	1030162408	14308900	71.994521
from stdin	rotated 180 degrees	row-major	830127398	14308900	58.01476
from stdin	rotated 180 degrees	column-major	1887606332	14308900	131.91834
from stdin	rotated 180 degrees	block-major	1193286444	14308900	83.394701

from stdin	rotated 270 degrees	row-major	1429607361	14308900	99.910361
from stdin	rotated 270 degrees	column-major	1312916922	14308900	91.755266
from stdin	rotated 270 degrees	block-major	1244843818	14308900	86.99787
from stdin	rotated 90 degrees	row-major	1476584183	14308900	103.19341
from stdin	rotated 90 degrees	column-major	1286873614	14308900	89.935188
from stdin	rotated 90 degrees	block-major	1284959984	14308900	89.801451
from stdin	transposed	row-major	1437486499	14308900	100.461007
from stdin	transposed	column-major	1296151285	14308900	90.583573
from stdin	transposed	block-major	1215995798	14308900	84.98178
from stdin	flipped horizontally	row-major	2234411318	37372800	59.7871
from stdin	flipped horizontally	column-major	5469971910	37372800	146.362379
from stdin	flipped horizontally	block-major	3122840283	37372800	83.559174
from stdin	flipped vertically	row-major	2166884641	37372800	57.980259
from stdin	flipped vertically	column-major	5033461106	37372800	134.682472
from stdin	flipped vertically	block-major	3085280067	37372800	82.554159
from stdin	rotated 0 degrees	row-major	1912542221	37372800	51.174711
from stdin	rotated 0 degrees	column-major	4667396378	37372800	124.887522
from stdin	rotated 0 degrees	block-major	2740554557	37372800	73.330191
from stdin	rotated 180 degrees	row-major	2168630088	37372800	58.026963
from stdin	rotated 180 degrees	column-major	5503176124	37372800	147.250838
from stdin	rotated 180 degrees	block-major	3144489659	37372800	84.138455
from stdin	rotated 270 degrees	row-major	4398129825	37372800	117.682642
from stdin	rotated 270 degrees	column-major	4379187939	37372800	117.175805
from stdin	rotated 270 degrees	block-major	3241696962	37372800	86.739473
from stdin	rotated 90 degrees	row-major	4334628828	37372800	115.983518
from stdin	rotated 90 degrees	column-major	4374857919	37372800	117.059945
from stdin	rotated 90 degrees	block-major	3358393706	37372800	89.861977
from stdin	transposed	row-major	4360068002	37372800	116.664205
from stdin	transposed	column-major	4477440821	37372800	119.8048
from stdin	transposed	block-major	3118365449	37372800	83.439439
from stdin	flipped horizontally	row-major	2885961599	49939200	57.789504
from stdin	flipped horizontally	column-major	6816259195	49939200	136.491157
from stdin	flipped horizontally	block-major	4162620136	49939200	83.353761
from stdin	flipped vertically	row-major	2882803822	49939200	57.726272
from stdin	flipped vertically	column-major	7515282330	49939200	150.488641
from stdin	flipped vertically	block-major	4126515719	49939200	82.630793
from stdin	rotated 0 degrees	row-major	2562903761	49939200	51.320481
from stdin	rotated 0 degrees	column-major	6338267841	49939200	126.919691

from stdin	rotated 0 degrees	block-major	3651842171	49939200	73.125764
from stdin	rotated 180 degrees	row-major	2905165558	49939200	58.174051
from stdin	rotated 180 degrees	column-major	6443587099	49939200	129.028641
from stdin	rotated 180 degrees	block-major	4120723845	49939200	82.514815
from stdin	rotated 270 degrees	row-major	3772094444	49939200	75.533738
from stdin	rotated 270 degrees	column-major	5919592534	49939200	118.53599
from stdin	rotated 270 degrees	block-major	4370128530	49939200	87.508982
from stdin	rotated 90 degrees	row-major	5833735035	49939200	116.81675
from stdin	rotated 90 degrees	column-major	4520368962	49939200	90.517448
from stdin	rotated 90 degrees	block-major	4489617303	49939200	89.901666
from stdin	transposed	row-major	3765539871	49939200	75.402487
from stdin	transposed	column-major	6225687651	49939200	124.665346
from stdin	transposed	block-major	4150492560	49939200	83.110914
from stdin	flipped horizontally	row-major	4606071403	82163600	56.059756
from stdin	flipped horizontally	column-major	11200302883	82163600	136.31709
from stdin	flipped horizontally	block-major	6893663290	82163600	83.90167
from stdin	flipped vertically	row-major	4625439010	82163600	56.295476
from stdin	flipped vertically	column-major	11405548321	82163600	138.8151
from stdin	flipped vertically	block-major	6798228860	82163600	82.740153
from stdin	rotated 0 degrees	row-major	4110363182	82163600	50.026571
from stdin	rotated 0 degrees	column-major	9870206822	82163600	120.128704
from stdin	rotated 0 degrees	block-major	5919752196	82163600	72.048355
from stdin	rotated 180 degrees	row-major	4633928189	82163600	56.398797
from stdin	rotated 180 degrees	column-major	11480900312	82163600	139.732197
from stdin	rotated 180 degrees	block-major	6908542501	82163600	84.082763
from stdin	rotated 270 degrees	row-major	7390082150	82163600	89.943505
from stdin	rotated 270 degrees	column-major	10292097815	82163600	125.263472
from stdin	rotated 270 degrees	block-major	7160823515	82163600	87.153235
from stdin	rotated 90 degrees	row-major	7528619104	82163600	91.629616
from stdin	rotated 90 degrees	column-major	10122056414	82163600	123.193925
from stdin	rotated 90 degrees	block-major	7455034426	82163600	90.734029
from stdin	transposed	row-major	7799710346	82163600	94.929024
from stdin	transposed	column-major	10305421382	82163600	125.425631
from stdin	transposed	block-major	7003380992	82163600	85.237027
from stdin	flipped horizontally	row-major	2077694015	37372800	55.593748
from stdin	flipped horizontally	column-major	4118744028	37372800	110.206996
from stdin	flipped horizontally	block-major	3112531929	37372800	83.283349
from stdin	flipped vertically	row-major	2071992004	37372800	55.441177

from stdin	flipped vertically	column-major	3980026156	37372800	106.495263
from stdin	flipped vertically	block-major	3101969618	37372800	83.000728
from stdin	rotated 0 degrees	row-major	1822265161	37372800	48.759129
from stdin	rotated 0 degrees	column-major	3702253080	37372800	99.06277
from stdin	rotated 0 degrees	block-major	2690166673	37372800	71.981941
from stdin	rotated 180 degrees	row-major	2171329076	37372800	58.099181
from stdin	rotated 180 degrees	column-major	4246232620	37372800	113.618263
from stdin	rotated 180 degrees	block-major	3102179820	37372800	83.006353
from stdin	rotated 270 degrees	row-major	2691433436	37372800	72.015836
from stdin	rotated 270 degrees	column-major	4083523278	37372800	109.26458
from stdin	rotated 270 degrees	block-major	3253526921	37372800	87.056012
from stdin	rotated 90 degrees	row-major	2712618581	37372800	72.582696
from stdin	rotated 90 degrees	column-major	4061773321	37372800	108.682607
from stdin	rotated 90 degrees	block-major	3354242640	37372800	89.750905
from stdin	transposed	row-major	2768410758	37372800	74.075551
from stdin	transposed	column-major	3628364298	37372800	97.085696
from stdin	transposed	block-major	3156574150	37372800	84.461805
animals.ppm	flipped horizontally	row-major	6739838	120000	56.165317
animals.ppm	flipped horizontally	column-major	7586877	120000	63.223975
animals.ppm	flipped horizontally	block-major	9762921	120000	81.357675
animals.ppm	flipped vertically	row-major	6805371	120000	56.711425
animals.ppm	flipped vertically	column-major	7523733	120000	62.697775
animals.ppm	flipped vertically	block-major	9964867	120000	83.040558
animals.ppm	rotated 0 degrees	row-major	5994732	120000	49.9561
animals.ppm	rotated 0 degrees	column-major	6528707	120000	54.405892
animals.ppm	rotated 0 degrees	block-major	8640715	120000	72.005958
animals.ppm	rotated 180 degrees	row-major	6749320	120000	56.244333
animals.ppm	rotated 180 degrees	column-major	7601580	120000	63.3465
animals.ppm	rotated 180 degrees	block-major	9751137	120000	81.259475
animals.ppm	rotated 270 degrees	row-major	7312509	120000	60.937575
animals.ppm	rotated 270 degrees	column-major	7050602	120000	58.755017
animals.ppm	rotated 270 degrees	block-major	10044115	120000	83.700958
animals.ppm	rotated 90 degrees	row-major	7372767	120000	61.439725
animals.ppm	rotated 90 degrees	column-major	6997353	120000	58.311275
animals.ppm	rotated 90 degrees	block-major	9780235	120000	81.501958
animals.ppm	transposed	row-major	7281073	120000	60.675608
animals.ppm	transposed	column-major	7184478	120000	59.87065
animals.ppm	transposed	block-major	9778201	120000	81.485008

desert.ppm	flipped horizontally	row-major	20954206	373728	56.068066
desert.ppm	flipped horizontally	column-major	23908708	373728	63.973553
desert.ppm	flipped horizontally	block-major	30859036	373728	82.570843
desert.ppm	flipped vertically	row-major	21951490	373728	58.736541
desert.ppm	flipped vertically	column-major	23013363	373728	61.57784
desert.ppm	flipped vertically	block-major	30635824	373728	81.973585
desert.ppm	rotated 0 degrees	row-major	18307190	373728	48.985332
desert.ppm	rotated 0 degrees	column-major	20524751	373728	54.918954
desert.ppm	rotated 0 degrees	block-major	26946339	373728	72.101472
desert.ppm	rotated 180 degrees	row-major	20829503	373728	55.734392
desert.ppm	rotated 180 degrees	column-major	24010780	373728	64.246671
desert.ppm	rotated 180 degrees	block-major	30418875	373728	81.393085
desert.ppm	rotated 270 degrees	row-major	22255672	373728	59.550454
desert.ppm	rotated 270 degrees	column-major	22988737	373728	61.511947
desert.ppm	rotated 270 degrees	block-major	31430548	373728	84.100062
desert.ppm	rotated 90 degrees	row-major	22695160	373728	60.726411
desert.ppm	rotated 90 degrees	column-major	22721949	373728	60.798091
desert.ppm	rotated 90 degrees	block-major	31410172	373728	84.045541
desert.ppm	transposed	row-major	22371769	373728	59.8611
desert.ppm	transposed	column-major	22060874	373728	59.029224
desert.ppm	transposed	block-major	30626390	373728	81.948342
erosion.ppm	flipped horizontally	row-major	21152021	373728	56.597368
erosion.ppm	flipped horizontally	column-major	25075938	373728	67.09676
erosion.ppm	flipped horizontally	block-major	30441929	373728	81.454772
erosion.ppm	flipped vertically	row-major	20980979	373728	56.139703
erosion.ppm	flipped vertically	column-major	23855794	373728	63.831969
erosion.ppm	flipped vertically	block-major	30698473	373728	82.141218
erosion.ppm	rotated 0 degrees	row-major	18268697	373728	48.882334
erosion.ppm	rotated 0 degrees	column-major	20507331	373728	54.872343
erosion.ppm	rotated 0 degrees	block-major	27028766	373728	72.322026
erosion.ppm	rotated 180 degrees	row-major	20860147	373728	55.816388
erosion.ppm	rotated 180 degrees	column-major	23888051	373728	63.91828
erosion.ppm	rotated 180 degrees	block-major	30322846	373728	81.136136
erosion.ppm	rotated 270 degrees	row-major	22981330	373728	61.492128
erosion.ppm	rotated 270 degrees	column-major	26289661	373728	70.344371
erosion.ppm	rotated 270 degrees	block-major	31857150	373728	85.241539
erosion.ppm	rotated 90 degrees	row-major	23538876	373728	62.983978
erosion.ppm	rotated 90 degrees	column-major	22755343	373728	60.887445

erosion.ppm	rotated 90 degrees	block-major	32230291	373728	86.239969
erosion.ppm	transposed	row-major	22235918	373728	59.497597
erosion.ppm	transposed	column-major	22482709	373728	60.157946
erosion.ppm	transposed	block-major	30625043	373728	81.944738
flowers_new.ppm	flipped horizontally	row-major	991556	18000	55.086444
flowers_new.ppm	flipped horizontally	column-major	995633	18000	55.312944
flowers_new.ppm	flipped horizontally	block-major	1480152	18000	82.230667
flowers_new.ppm	flipped vertically	row-major	983842	18000	54.657889
flowers_new.ppm	flipped vertically	column-major	996860	18000	55.381111
flowers_new.ppm	flipped vertically	block-major	1496430	18000	83.135
flowers_new.ppm	rotated 0 degrees	row-major	861834	18000	47.879667
flowers_new.ppm	rotated 0 degrees	column-major	887128	18000	49.284889
flowers_new.ppm	rotated 0 degrees	block-major	1308841	18000	72.713389
flowers_new.ppm	rotated 180 degrees	row-major	974811	18000	54.156167
flowers_new.ppm	rotated 180 degrees	column-major	1003060	18000	55.725556
flowers_new.ppm	rotated 180 degrees	block-major	1519697	18000	84.427611
flowers_new.ppm	rotated 270 degrees	row-major	978903	18000	54.3835
flowers_new.ppm	rotated 270 degrees	column-major	988520	18000	54.917778
flowers_new.ppm	rotated 270 degrees	block-major	1497760	18000	83.208889
flowers_new.ppm	rotated 90 degrees	row-major	974587	18000	54.143722
flowers_new.ppm	rotated 90 degrees	column-major	985123	18000	54.729056
flowers_new.ppm	rotated 90 degrees	block-major	1473621	18000	81.867833
flowers_new.ppm	transposed	row-major	977582	18000	54.310111
flowers_new.ppm	transposed	column-major	1018142	18000	56.563444
flowers_new.ppm	transposed	block-major	1476437	18000	82.024278
flowers.ppm	flipped horizontally	row-major	987305	18180	54.307206
flowers.ppm	flipped horizontally	column-major	1407377	18180	77.413476
flowers.ppm	flipped horizontally	block-major	1493587	18180	82.155501
flowers.ppm	flipped vertically	row-major	987979	18180	54.344279
flowers.ppm	flipped vertically	column-major	1019170	18180	56.059956
flowers.ppm	flipped vertically	block-major	2000379	18180	110.031848
flowers.ppm	rotated 0 degrees	row-major	881330	18180	48.477998
flowers.ppm	rotated 0 degrees	column-major	890503	18180	48.982563
flowers.ppm	rotated 0 degrees	block-major	1345334	18180	74.00077
flowers.ppm	rotated 180 degrees	row-major	1017056	18180	55.943674
flowers.ppm	rotated 180 degrees	column-major	1018724	18180	56.035424
flowers.ppm	rotated 180 degrees	block-major	1990876	18180	109.509131
flowers.ppm	rotated 270 degrees	row-major	1283183	18180	70.582123

flowers.ppm	rotated 270 degrees	column-major	999739	18180	54.991144
flowers.ppm	rotated 270 degrees	block-major	1497666	18180	82.379868
flowers.ppm	rotated 90 degrees	row-major	995644	18180	54.765897
flowers.ppm	rotated 90 degrees	column-major	1329056	18180	73.105391
flowers.ppm	rotated 90 degrees	block-major	1491793	18180	82.056821
flowers.ppm	transposed	row-major	981722	18180	54.00011
flowers.ppm	transposed	column-major	1036268	18180	57.00044
flowers.ppm	transposed	block-major	1486825	18180	81.783553
from-wind-cave.ppm	flipped horizontally	row-major	21403907	373728	57.27135
from-wind-cave.ppm	flipped horizontally	column-major	24771017	373728	66.28087
from-wind-cave.ppm	flipped horizontally	block-major	30440988	373728	81.452254
from-wind-cave.ppm	flipped vertically	row-major	20824067	373728	55.719847
from-wind-cave.ppm	flipped vertically	column-major	24435801	373728	65.383918
from-wind-cave.ppm	flipped vertically	block-major	30599342	373728	81.875969
from-wind-cave.ppm	rotated 0 degrees	row-major	18391096	373728	49.209842
from-wind-cave.ppm	rotated 0 degrees	column-major	20039968	373728	53.6218
from-wind-cave.ppm	rotated 0 degrees	block-major	27005676	373728	72.260243
from-wind-cave.ppm	rotated 180 degrees	row-major	20804276	373728	55.666891
from-wind-cave.ppm	rotated 180 degrees	column-major	24437054	373728	65.387271
from-wind-cave.ppm	rotated 180 degrees	block-major	30416545	373728	81.386851
from-wind-cave.ppm	rotated 270 degrees	row-major	22362697	373728	59.836825
from-wind-cave.ppm	rotated 270 degrees	column-major	23094365	373728	61.794581
from-wind-cave.ppm	rotated 270 degrees	block-major	31597294	373728	84.546231
from-wind-cave.ppm	rotated 90 degrees	row-major	22499406	373728	60.202623
from-wind-cave.ppm	rotated 90 degrees	column-major	22136903	373728	59.232659
from-wind-cave.ppm	rotated 90 degrees	block-major	32092625	373728	85.87161
from-wind-cave.ppm	transposed	row-major	23399723	373728	62.61164
from-wind-cave.ppm	transposed	column-major	25274626	373728	67.628398
from-wind-cave.ppm	transposed	block-major	31234039	373728	83.574255
halligan.ppm	flipped horizontally	row-major	8235603	143089	57.555808
halligan.ppm	flipped horizontally	column-major	9657215	143089	67.490967
halligan.ppm	flipped horizontally	block-major	11698173	143089	81.754523
halligan.ppm	flipped vertically	row-major	8163173	143089	57.049619
halligan.ppm	flipped vertically	column-major	9164049	143089	64.044399
halligan.ppm	flipped vertically	block-major	11620392	143089	81.210939
halligan.ppm	rotated 0 degrees	row-major	7248666	143089	50.658443
halligan.ppm	rotated 0 degrees	column-major	7865533	143089	54.969515
halligan.ppm	rotated 0 degrees	block-major	10333759	143089	72.219101

halligan.ppm	rotated 180 degrees	row-major	8207015	143089	57.356016
halligan.ppm	rotated 180 degrees	column-major	9255595	143089	64.684183
halligan.ppm	rotated 180 degrees	block-major	11630343	143089	81.280483
halligan.ppm	rotated 270 degrees	row-major	8763559	143089	61.245512
halligan.ppm	rotated 270 degrees	column-major	8622225	143089	60.257777
halligan.ppm	rotated 270 degrees	block-major	11838744	143089	82.736926
halligan.ppm	rotated 90 degrees	row-major	8764540	143089	61.252367
halligan.ppm	rotated 90 degrees	column-major	8607591	143089	60.155505
halligan.ppm	rotated 90 degrees	block-major	11824739	143089	82.63905
halligan.ppm	transposed	row-major	8835080	143089	61.745347
halligan.ppm	transposed	column-major	8602765	143089	60.121777
halligan.ppm	transposed	block-major	11637363	143089	81.329543
in-wind-cave.ppm	flipped horizontally	row-major	20817756	373728	55.70296
in-wind-cave.ppm	flipped horizontally	column-major	25302638	373728	67.703351
in-wind-cave.ppm	flipped horizontally	block-major	30905680	373728	82.69565
in-wind-cave.ppm	flipped vertically	row-major	20925539	373728	55.99136
in-wind-cave.ppm	flipped vertically	column-major	25803907	373728	69.044618
in-wind-cave.ppm	flipped vertically	block-major	30671999	373728	82.07038
in-wind-cave.ppm	rotated 0 degrees	row-major	17870312	373728	47.816358
in-wind-cave.ppm	rotated 0 degrees	column-major	22322342	373728	59.728846
in-wind-cave.ppm	rotated 0 degrees	block-major	27398880	373728	73.312356
in-wind-cave.ppm	rotated 180 degrees	row-major	20990241	373728	56.164486
in-wind-cave.ppm	rotated 180 degrees	column-major	31631022	373728	84.636479
in-wind-cave.ppm	rotated 180 degrees	block-major	32449011	373728	86.825207
in-wind-cave.ppm	rotated 270 degrees	row-major	23719182	373728	63.46643
in-wind-cave.ppm	rotated 270 degrees	column-major	26322416	373728	70.432015
in-wind-cave.ppm	rotated 270 degrees	block-major	31994647	373728	85.609446
in-wind-cave.ppm	rotated 90 degrees	row-major	23456787	373728	62.764329
in-wind-cave.ppm	rotated 90 degrees	column-major	23351729	373728	62.48322
in-wind-cave.ppm	rotated 90 degrees	block-major	32406988	373728	86.712764
in-wind-cave.ppm	transposed	row-major	22840416	373728	61.115078
in-wind-cave.ppm	transposed	column-major	22487030	373728	60.169508
in-wind-cave.ppm	transposed	block-major	30883323	373728	82.635829
rock.ppm	flipped horizontally	row-major	27691069	499392	55.449565
rock.ppm	flipped horizontally	column-major	37296865	499392	74.684546
rock.ppm	flipped horizontally	block-major	41386012	499392	82.872797
rock.ppm	flipped vertically	row-major	27638336	499392	55.34397
rock.ppm	flipped vertically	column-major	35131107	499392	70.347757

rock.ppm	flipped vertically	block-major	42160215	499392	84.423088
rock.ppm	rotated 0 degrees	row-major	24099783	499392	48.258248
rock.ppm	rotated 0 degrees	column-major	32091275	499392	64.260691
rock.ppm	rotated 0 degrees	block-major	36238276	499392	72.564791
rock.ppm	rotated 180 degrees	row-major	27495376	499392	55.057702
rock.ppm	rotated 180 degrees	column-major	34191078	499392	68.46541
rock.ppm	rotated 180 degrees	block-major	41142910	499392	82.386001
rock.ppm	rotated 270 degrees	row-major	34736732	499392	69.558047
rock.ppm	rotated 270 degrees	column-major	32179867	499392	64.438091
rock.ppm	rotated 270 degrees	block-major	42355227	499392	84.813587
rock.ppm	rotated 90 degrees	row-major	34066975	499392	68.216902
rock.ppm	rotated 90 degrees	column-major	31600387	499392	63.27772
rock.ppm	rotated 90 degrees	block-major	43394333	499392	86.89433
rock.ppm	transposed	row-major	30656249	499392	61.387145
rock.ppm	transposed	column-major	30158354	499392	60.390142
rock.ppm	transposed	block-major	41119942	499392	82.340009
segfault.ppm	flipped horizontally	row-major	45532609	821636	55.417008
segfault.ppm	flipped horizontally	column-major	60233149	821636	73.3088
segfault.ppm	flipped horizontally	block-major	67793025	821636	82.509804
segfault.ppm	flipped vertically	row-major	45444767	821636	55.310097
segfault.ppm	flipped vertically	column-major	60954048	821636	74.186194
segfault.ppm	flipped vertically	block-major	67771273	821636	82.48333
segfault.ppm	rotated 0 degrees	row-major	39655590	821636	48.264183
segfault.ppm	rotated 0 degrees	column-major	51775527	821636	63.015164
segfault.ppm	rotated 0 degrees	block-major	59904751	821636	72.909112
segfault.ppm	rotated 180 degrees	row-major	46251076	821636	56.291443
segfault.ppm	rotated 180 degrees	column-major	69619043	821636	84.732221
segfault.ppm	rotated 180 degrees	block-major	66930729	821636	81.460317
segfault.ppm	rotated 270 degrees	row-major	50412660	821636	61.35644
segfault.ppm	rotated 270 degrees	column-major	54448298	821636	66.26815
segfault.ppm	rotated 270 degrees	block-major	69838102	821636	84.998834
segfault.ppm	rotated 90 degrees	row-major	50788380	821636	61.813723
segfault.ppm	rotated 90 degrees	column-major	55061914	821636	67.014973
segfault.ppm	rotated 90 degrees	block-major	71723183	821636	87.293136
segfault.ppm	transposed	row-major	51925296	821636	63.197445
segfault.ppm	transposed	column-major	57236566	821636	69.661707
segfault.ppm	transposed	block-major	70480589	821636	85.780795
wind-cave.ppm	flipped horizontally	row-major	20935481	373728	56.017962

wind-cave.ppm	flipped horizontally	column-major	24812625	373728	66.392202
wind-cave.ppm	flipped horizontally	block-major	30939414	373728	82.785914
wind-cave.ppm	flipped vertically	row-major	20865033	373728	55.829462
wind-cave.ppm	flipped vertically	column-major	24106917	373728	64.503909
wind-cave.ppm	flipped vertically	block-major	30649918	373728	82.011297
wind-cave.ppm	rotated 0 degrees	row-major	17943895	373728	48.013248
wind-cave.ppm	rotated 0 degrees	column-major	21349092	373728	57.124679
wind-cave.ppm	rotated 0 degrees	block-major	26938673	373728	72.08096
wind-cave.ppm	rotated 180 degrees	row-major	20845877	373728	55.778205
wind-cave.ppm	rotated 180 degrees	column-major	24513346	373728	65.591409
wind-cave.ppm	rotated 180 degrees	block-major	30514069	373728	81.6478
wind-cave.ppm	rotated 270 degrees	row-major	22677880	373728	60.680174
wind-cave.ppm	rotated 270 degrees	column-major	23902538	373728	63.957044
wind-cave.ppm	rotated 270 degrees	block-major	32398590	373728	86.690293
wind-cave.ppm	rotated 90 degrees	row-major	22425535	373728	60.004964
wind-cave.ppm	rotated 90 degrees	column-major	22382781	373728	59.890565
wind-cave.ppm	rotated 90 degrees	block-major	31613052	373728	84.588396
wind-cave.ppm	transposed	row-major	23740001	373728	63.522136
wind-cave.ppm	transposed	column-major	23772149	373728	63.608156
wind-cave.ppm	transposed	block-major	31008719	373728	82.971356