

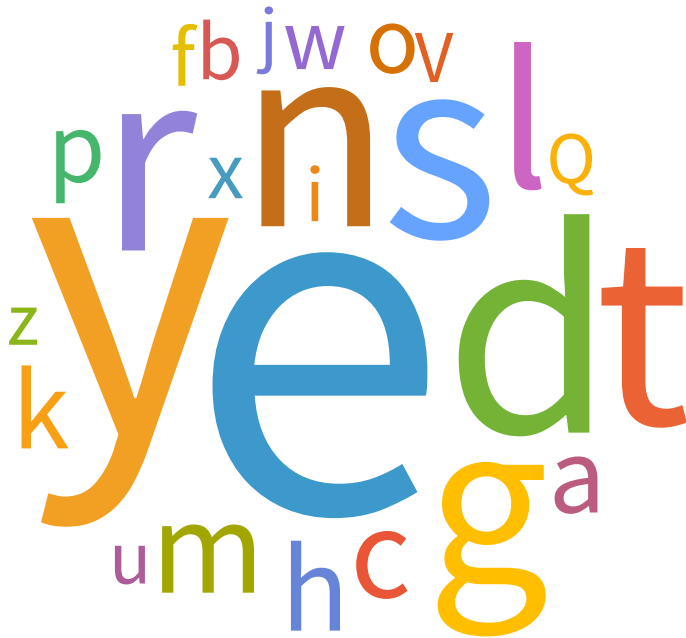
Hexi — PS 4 — 2025-01-29

Exercises from EIWL3 Section 11

In[150]:=

```
WordCloud[StringTake[StringReverse[WordList[]], 1]]
```

Out[150]=



Very nice. 10/10.
One minor comment to
take note of on p. 9.

In[151]:=

In[152]:=

```
RomanNumeral[1959]
```

Out[152]=

```
MCMLIX
```

In[153]:=

```
Max[StringLength[RomanNumeral[Range[1, 2020]]]]
```

Out[153]=

```
13
```

In[154]:=

WordCloud[StringTake[RomanNumeral[Range[100]], 1]]

Out[154]=



In[155]:=

Length[Alphabet["Russian"]]

Out[155]=

33

In[156]:=

ToUpperCase[Alphabet["Greek"]]

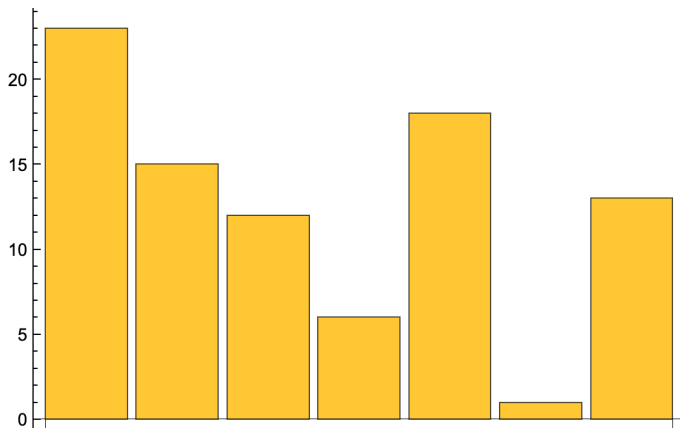
Out[156]=

{A, B, Γ, Δ, E, Z, H, Θ, I, K, Λ, M, N, Ξ, O, Π, P, Σ, T, Υ, Φ, X, Ψ, Ω}

In[157]:=

BarChart[LetterNumber["wolfram"]]

Out[157]=



In[158]:=

StringJoin[FromLetterNumber[RandomInteger[{1, 26}, 1000]]]

Out[158]=

nwohhcsrqjjjdewbtqudqnzomyycuyhhjwifbxuhnwdbgafzkehculinfrkhhquthhdyqgrmoncmukmmga
 llhwobvjhzzgdrvqsivazegvggshwdfoyxwhxspijiolzxtsnmqkfwmfemlcdegmcjqdadonhawurlsa
 kgnnuvkvtxihsdhaxhzoijltltxxhykemkljtjceinwjm lsplstclemckuuywztsodjqydbtzowanlyca
 cpxagoeodikykcinklwgvlrxuhqqoartucaxvbaxfxgkvjgvepqlnddbvfzvxvqatwftmadujoipfza
 aqrgclwshvhgvqsyarxlgmircbdxcpghfpulellrysgauvevmcimdbbjlepzjaolqzuxbtexchuhbia
 prczstidfekglmheqsznzzokjzooqaizakjrbupyymyvrhrfxpikjnyvbvaixnqoqfwnswifwkstxga
 fhxblrufctqyhqkingavcouqkwwmkurxnrhvrgreomyqvmkiweuxxbftqqfqnmogldgnfjbcrrwfqta
 mvssvwbneywcposaivinborsgjjvojtscvpwdasetqyrgwjfeyjzqqqhlllyxnmuofgdrayfvvwzcgqta
 csxptpbivypplummyslxjvxnmgwhlqdczgstbdlgsckbwmrgjtfwoLxrbckunkikcagczqwfbgmqqbpa
 nvhrfhijqLcizxjvnkbgdxhoyairnandtbtletttafxygjnmuutsgijyglqnfktyzujovplnhxwoea
 koftwkzcpaghanwxnbkutenbgkeyonewdphehknwibluhgesjbslwivfarshjrgusmptqtwfyphvea
 lvqzqagppqfpwfwzppfuachglbuybmjjicohxfvfaxsfxhkqpvszqnqkcwxoqbsgjdtyamzvmrhmnfa
 kurycaqfeddktsvemrtvrwuicvkkipnyambusxgkvepwzeqaviuetpfnsqhdg

In[159]:=

Table[StringJoin[FromLetterNumber[RandomInteger[{1, 26}, 5]]], 100]

Out[159]=

{bwlre, kljla, hfpzy, urlvf, gnarv, pnnaj, zwdhy, xhvx, oygc, ismcq, ycuty, mgmgs,
 pzvon, hgrew, gbfhh, ncsww, tdcms, qtqoe, naqow, rscvk, khdxz, enwpy, jbvmm,
 brqxq, szdqa, chska, ffhrl, wwqqn, zfbhx, pulma, fytpc, jvodn, mgazn, ogofq,
 mjilh, btjcg, wifur, hddfr, cxktx, fpffw, bkmi, xrgi, qpqod, nuqmf, xkzzq,
 ugfhw, tvpsl, algdx, vsuur, oblfr, nbpaa, ardv, ffwfh, nhjgp, sinyz, rlaxj,
 tjiod, zvnlg, hdvce, nqbqb, uxsbb, fhmcc, lvkbi, qajhw, bqhwz, zyhw, glgas,
 ilbbc, awgmb, uazbe, usohx, itjzw, aujyw, hkgru, rstxl, zgwr, ulfw, dcoxu,
 zauuz, defzn, euhqf, jvzyw, kldwa, xyktp, pgldm, ifanx, wbkve, aeulo, serhr,
 pnibv, xzbkn, knrhd, fojvf, aermd, whuao, rtkty, jwore, oghgz, iwgat, htydk}

In[160]:=

Transliterate["wolfram", "Greek"]

Out[160]=

βολφραμ

In[161]:=

StringJoin[Table["🐏", 10]]

Out[161]=



In[162]:=

Transliterate[Alphabet["Arabic"]]

Out[162]=

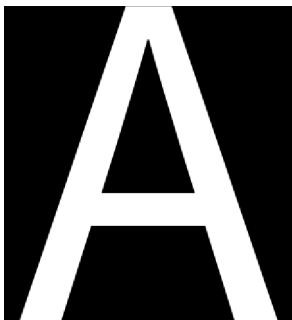
{a, b, t, th, j, h, kh, d, dh, r, z, s, sh, s, d, t, z, ' , gh, f, q, k, l, m, n, h, w, y}

Nice use of RandomInteger[].
 Lots of people accidentally
 included 0 which creates
 space characters.

In[163]:=

```
Rasterize[Style["A", 200, White, Background → Black]]
```

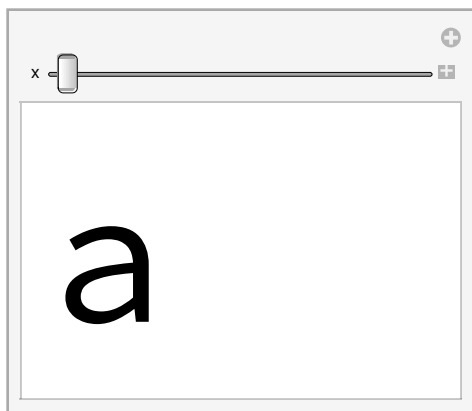
Out[163]=



In[164]:=

```
Manipulate[Style[FromLetterNumber[x], 100], {x, 1, 26, 1}]
```

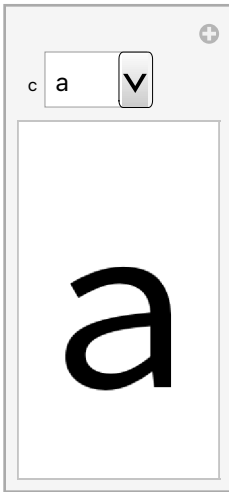
Out[164]=



In[165]:=

```
Manipulate[Rasterize[Style[c, 100, Black, Background -> White]],
  {{c, "a"}, CharacterRange["a", "z"]}]
```

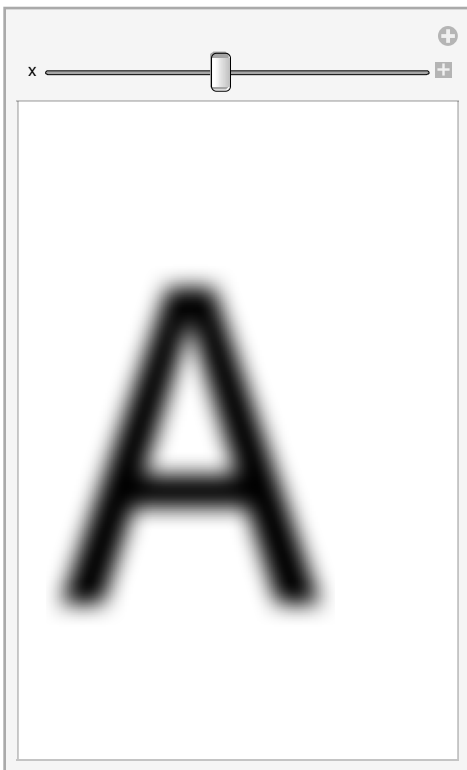
Out[165]=



In[166]:=

```
ManipulateBlur[Rasterize[Style["A", 200]], x], {x, 0, 50}]
```

Out[]:=



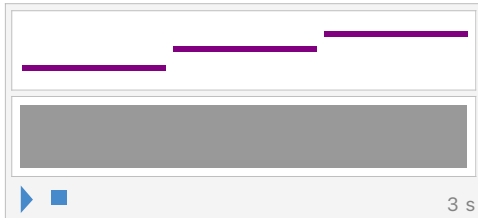
In[166]:=

Exercises from EIWL3 Section 12

In[167]:=

```
Sound[{SoundNote[0], SoundNote[4], SoundNote[7]}]
```

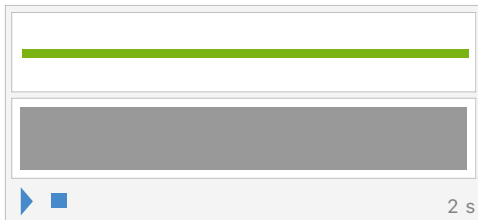
Out[167]=



In[168]:=

```
Sound[SoundNote["A", 2, "Cello"]]
```

Out[168]=

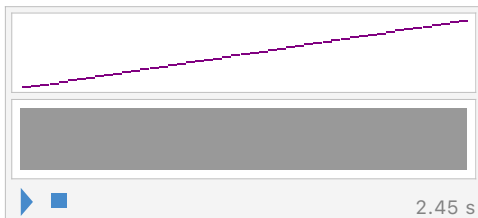


In[169]:=

In[170]:=

```
Sound[Table[SoundNote[x, 0.05], {x, 0, 48, 1}]]
```

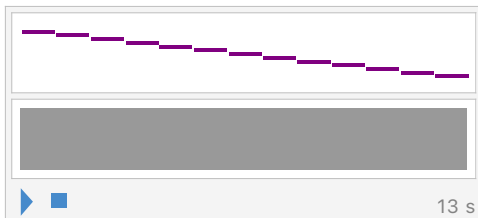
Out[170]=



In[171]:=

```
Sound[Reverse[Table[SoundNote[x], {x, 0, 12, 1}]]]
```

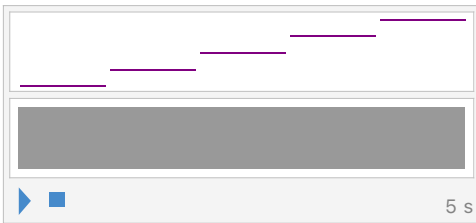
Out[171]=



In[172]:=

```
Sound[Table[SoundNote[x], {x, 0, 48, 12}]]
```

Out[172]=



In[173]:=

```
Sound[Table[SoundNote[RandomInteger[12], 0.2, "Trumpet"], 10]]
```

Out[173]=



In[174]:=

```
Sound[Table[SoundNote[RandomInteger[12], RandomReal[0.1]], 10]]
```

Out[174]=



In[175]:=

```
Sound[Table[SoundNote[x, 0.1], {x, IntegerDigits[2^31]}]]
```

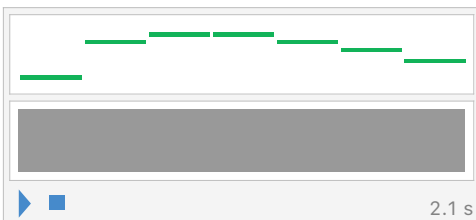
Out[175]=



In[176]:=

```
Sound[Table[SoundNote[x, 0.3, "Guitar"], {x, Characters["CABBAGE"]}]]
```

Out[176]=



In[177]:=

```
Sound[Table[SoundNote[x, 0.1], {x, LetterNumber[Characters["wolfram"]}]]]
```

Out[177]=



Exercises from EIWL3 Section 13

In[178]:=

```
Grid[Table[i*j, {i, 12}, {j, 12}]]
```

Out[178]=

1	2	3	4	5	6	7	8	9	10	11	12
2	4	6	8	10	12	14	16	18	20	22	24
3	6	9	12	15	18	21	24	27	30	33	36
4	8	12	16	20	24	28	32	36	40	44	48
5	10	15	20	25	30	35	40	45	50	55	60
6	12	18	24	30	36	42	48	54	60	66	72
7	14	21	28	35	42	49	56	63	70	77	84
8	16	24	32	40	48	56	64	72	80	88	96
9	18	27	36	45	54	63	72	81	90	99	108
10	20	30	40	50	60	70	80	90	100	110	120
11	22	33	44	55	66	77	88	99	110	121	132
12	24	36	48	60	72	84	96	108	120	132	144

In[179]:=

```
Grid[RomanNumeral[Table[i*j, {i, 5}, {j, 5}]]]
```

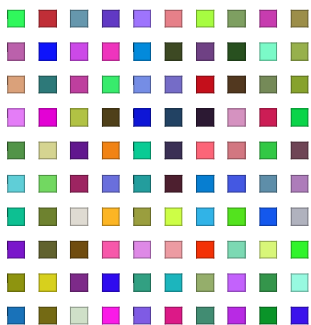
Out[179]=

I	II	III	IV	V
II	IV	VI	VIII	X
III	VI	IX	XII	XV
IV	VIII	XII	XVI	XX
V	X	XV	XX	XXV

In[180]:=

```
Grid[Table[RandomColor[], 10, 10]]
```

Out[180]=



In[181]:=

```
Grid[Table[Style[RandomInteger[{1, 10}], RandomColor[]], 10, 10]]
```

Out[181]=

```
10 7 9 6 6 10 7 4 8 1
10 4 5 6 3 10 2 6 6 10
4 7 1 6 10 2 7 8 4 3
3 8 7 9 3 4 3 3 8 4
6 1 9 5 5 6 4 1 8 8
6 1 1 2 3 2 5 3 7 4
10 7 1 10 6 6 9 8 4 3
8 8 5 1 9 2 8 6 7 4
5 10 9 2 2 4 8 3 1 10
8 8 3 7 1 1 9 1 2 9
```

In[182]:=

```
Table[a * b, {a, Alphabet[]}, {b, Alphabet[]}]
```

I think he meant you to use
StringJoin[a,b] not a*b.

Out[182]=

```
{a2, ab, ac, ad, ae, af, ag, ah, ai, aj, ak,
 al, am, an, ao, ap, aq, ar, as, at, au, av, aw, ax, ay, az},
 {ab, b2, bc, bd, be, bf, bg, bh, bi, bj, bk, bl, bm, bn, bo, bp, bq, br,
 bs, bt, bu, bv, bw, bx, by, bz}, {ac, bc, c2, cd, ce, cf, cg, ch, ci,
 cj, ck, cl, cm, cn, co, cp, cq, cr, cs, ct, cu, cv, cw, cx, cy, cz},
 {ad, bd, cd, d2, de, df, dg, dh, di, dj, dk, dl, dm, dn, do, dp, dq, dr,
 ds, dt, du, dv, dw, dx, dy, dz}, {ae, be, ce, de, e2, ef, eg, eh, ei,
 ej, ek, el, em, en, eo, ep, eq, er, es, et, eu, ev, ew, ex, ey, ez},
 {af, bf, cf, df, ef, f2, fg, fh, fi, fj, fk, fl, fm, fn, fo, fp, fq, fr,
 fs, ft, fu, fv, fw, fx, fy, fz}, {ag, bg, cg, dg, eg, fg, g2, gh, gi,
 gj, gk, gl, gm, gn, go, gp, gq, gr, gs, gt, gu, gv, gw, gx, gy, gz},
 {ah, bh, ch, dh, eh, fh, gh, h2, hi, hj, hk, hl, hm, hn, ho, hp, hq, hr,
 hs, ht, hu, hv, hw, hx, hy, hz}, {ai, bi, ci, di, ei, fi, gi, hi, i2,
 ij, ik, il, im, in, io, ip, iq, ir, is, it, iu, iv, iw, ix, iy, iz},
 {aj, bj, cj, dj, ej, fj, gj, hj, ij, j2, jk, jl, jm, jn, jo, jp, jq, jr,
 js, jt, ju, jv, jw, jx, jy, jz}, {ak, bk, ck, dk, ek, fk, gk, hk, ik,
 jk, k2, kl, km, kn, ko, kp, kq, kr, ks, kt, ku, kv, kw, kx, ky, kz},
 {al, bl, cl, dl, el, fl, gl, hl, il, jl, kl, l2, lm, ln, lo, lp, lq, lr,
 ls, lt, lu, lv, lw, lx, ly, lz}, {am, bm, cm, dm, em, fm, gm, hm, im,
 jm, km, lm, m2, mn, mo, mp, mq, mr, ms, mt, mu, mv, mw, mx, my, mz},
 {an, bn, cn, dn, en, fn, gn, hn, in, jn, kn, ln, mn, n2, no, np, nq, nr,
 ns, nt, nu, nv, nw, nx, ny, nz}, {ao, bo, co, do, eo, fo, go, ho, io,
 jo, ko, lo, mo, no, o2, op, oq, or, os, ot, ou, ov, ow, ox, oy, oz},
 {ap, bp, cp, dp, ep, fp, gp, hp, ip, jp, kp, lp, mp, np, op, p2, pq, pr,
 ps, pt, pu, pv, pw, px, py, pz}, {aq, bq, cq, dq, eq, fq, gq, hq, iq,
 jq, kq, lq, mq, nq, oq, pq, q2, qr, qs, qt, qu, qv, qw, qx, qy, qz},
 {ar, br, cr, dr, er, fr, gr, hr, ir, jr, kr, lr, mr, nr, or, pr, qr, r2,
```

```

rs, rt, ru, rv, rw, rx, ry, rz}, {as, bs, cs, ds, es, fs, gs, hs, is,
js, ks, ls, ms, ns, os, ps, qs, rs, s2, st, su, sv, sw, sx, sy, sz},
{at, bt, ct, dt, et, ft, gt, ht, it, jt, kt, lt, mt, nt, ot, pt, qt,
rt, st, t2, tu, tv, tw, tx, ty, tz}, {au, bu, cu, du, eu, fu, gu, hu,
iu, ju, ku, lu, mu, nu, ou, pu, qu, ru, su, tu, u2, uv, uw, ux, uy, uz},
{av, bv, cv, dv, ev, fv, gv, hv, iv, jv, kv, lv, mv, nv, ov, pv, qv,
rv, sv, tv, uv, v2, vw, vx, vy, vz}, {aw, bw, cw, dw, ew, fw, gw, hw,
iw, jw, kw, lw, mw, nw, ow, pw, qw, rw, sw, tw, uw, vw, w2, wx, wy, wz},
{ax, bx, cx, dx, ex, fx, gx, hx, ix, jx, kx, lx, mx, nx, ox, px, qx,
rx, sx, tx, ux, vx, wx, x2, xy, xz}, {ay, by, cy, dy, ey, fy, gy, hy,
iy, jy, ky, ly, my, ny, oy, py, qy, ry, sy, ty, uy, vy, wy, xy, y2, yz},
{az, bz, cz, dz, ez, fz, gz, hz, iz, jz, kz, lz, mz, nz,
oz, pz, qz, rz, sz, tz, uz, vz, wz, xz, yz, z2}}

```

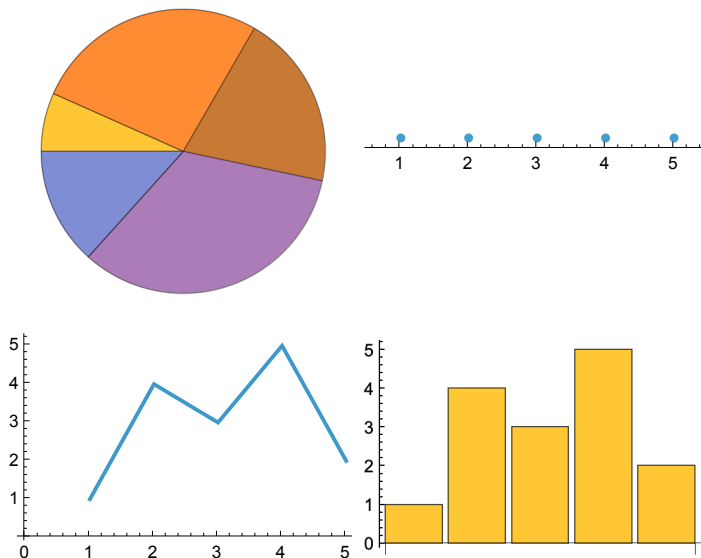
In[183]:=

```

Grid[{{PieChart[{1, 4, 3, 5, 2}], NumberLinePlot[{1, 4, 3, 5, 2}]},
{ListLinePlot[{1, 4, 3, 5, 2}], BarChart[{1, 4, 3, 5, 2}]}}]

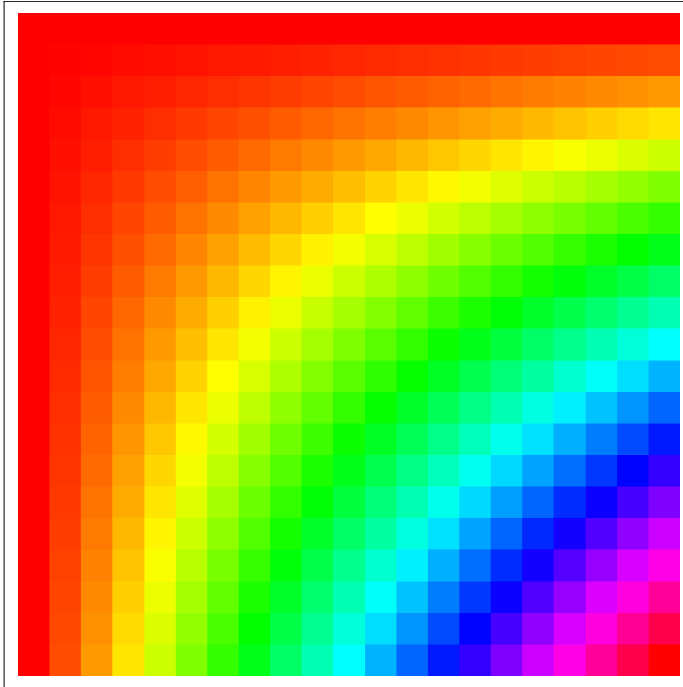
```

Out[183]=



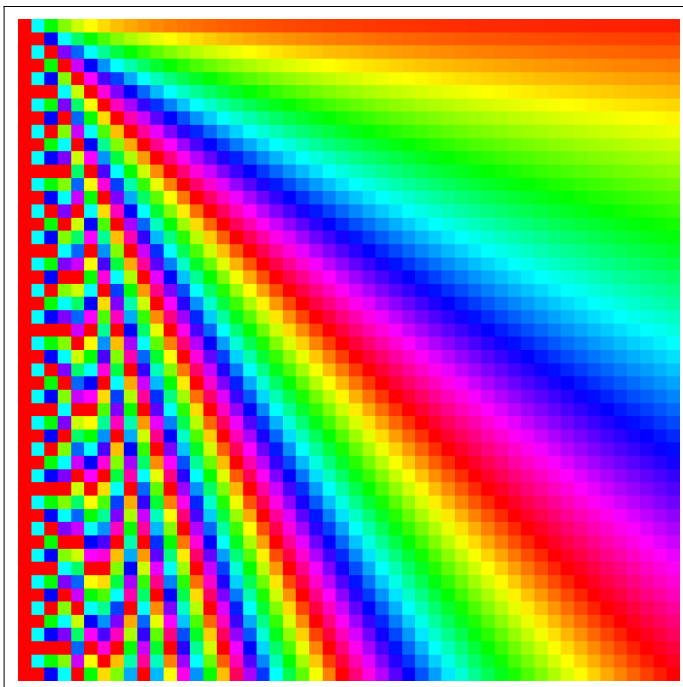
```
In[184]:= ArrayPlot[Table[Hue[x * y], {x, 0, 1, 0.05}, {y, 0, 1, 0.05}]]
```

Out[184]=



```
In[185]:= ArrayPlot[Table[Hue[x / y], {x, 1, 50, 1}, {y, 1, 50, 1}]]
```

Out[185]=



```
In[186]:=
```

```
ArrayPlot[StringLength[RomanNumeral[Table[i*j, {i, 100}, {j, 100}]]]]
```

```
Out[186]=
```

