```
> # Set the parameters and functions
c :='c':
d :='d':
u :='u':
E4 := (4572 c − 19890) u^7 + (60582 c^2 + 36675 − 7620 d^3 − 153630 d) u^6 + (6096 c^5 + 205290 c^3
    + 220050 c − 44808 d^4 − 415215 d^2) u^5 + (11354 c^6 + 300540 c^4 + 550125 c^2 - 508 d^7 − 97692 d^5
    − 518850 d^3) u^4 + (6858 c^7 + 233370 c^5 + 733500 c^3 − 75915 d^6 − 301950 d^4) u^3 + (75252 c^6
    + 550125 c^4 − 21336 d^7 − 93690 d^5) u^2 + (220050 c^5 - 6858 d^7 − 63405 d^6) u + 36675 c^6
    − 34290 d^7 :

print(Output);
# find Sturm's sequence``
 for j from 0 by 1 to 99 do
 c := 408/100 + (j + 1)/100 · (4108/1000 − 408/100) :
 d := 408/100 + j/100 · (4108/1000 - 408/100) :
u :='u':
S := sturmseq(E4, u);
signnum := sturm(S, u, 4, 57/10);
 with(ArrayTools) :
 Slength := Size(S, 2);
X := Array(1 .. Slength);
Y := Array(1 .. Slength);

   for i from 1 to Slength do
 # Find sgn [s_{E_{4, i}}(0)]
     u := 4;
     X[i] := signum(S[i]);
 # Find sgn [s_{E_{4, i}}(57/10)]
     u := 57/10 :
     Y[i] := signum(S[i]);
   end do;
 # show the final results
 print([ 'a'[380 + j],'a'[381 + j], sgn(s['E'[4, 380 + j]](4)), sgn(s['E'[4, 380 + j]](5.7))]
     = [evalf(d, 5), evalf(c, 5), X, Y]) ;
end do:
```

Output

$$\left[a_{380}, a_{381}, sgn\left(s_{E_{4,380}}(4)\right), sgn\left(s_{E_{4,380}}(5.7)\right)\right] = \left[4.0800, 4.0803, [-1\ -1\ 1\ 1\ -1\ -1\ 1\ -1], [-1\ 1\ 1\ 1\ -1\ -1\ 1\ -1]\right]$$

$$\left[a_{381}, a_{382}, sgn\left(s_{E_{4,381}}(4)\right), sgn\left(s_{E_{4,381}}(5.7)\right)\right] = \left[4.0803, 4.0806, [-1\ -1\ 1\ 1\ -1\ -1\ 1\ -1], [-1\ 1\ 1\ 1\ -1\ -1\ 1\ -1]\right]$$

$$\left[a_{382}, a_{383}, sgn\left(s_{E_{4,382}}(4)\right), sgn\left(s_{E_{4,382}}(5.7)\right)\right] = \left[4.0806, 4.0808, [-1\ -1\ 1\ 1\ -1\ -1\ 1\ -1], [-1\ 1\ 1\ 1\ -1\ -1\ 1\ -1]\right]$$

$$\left[a_{383}, a_{384}, sgn\left(s_{E_{4,383}}(4)\right), sgn\left(s_{E_{4,383}}(5.7)\right)\right] = \left[4.0808, 4.0811, [-1\ -1\ 1\ 1\ -1\ -1\ 1\ -1], [-1\ 1\ 1\ 1\ -1\ -1\ 1\ -1]\right]$$

$$\left[a_{384}, a_{385}, sgn\left(s_{E_{4,384}}(4)\right), sgn\left(s_{E_{4,384}}(5.7)\right)\right] = \left[4.0811, 4.0814, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{385}, a_{386}, sgn\left(s_{E_{4,385}}(4)\right), sgn\left(s_{E_{4,385}}(5.7)\right)\right] = \left[4.0814, 4.0817, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{386}, a_{387}, sgn\left(s_{E_{4,386}}(4)\right), sgn\left(s_{E_{4,386}}(5.7)\right)\right] = \left[4.0817, 4.0820, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{387}, a_{388}, sgn\left(s_{E_{4,387}}(4)\right), sgn\left(s_{E_{4,387}}(5.7)\right)\right] = \left[4.0820, 4.0822, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{388}, a_{389}, sgn\left(s_{E_{4,388}}(4)\right), sgn\left(s_{E_{4,388}}(5.7)\right)\right] = \left[4.0822, 4.0825, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{389}, a_{390}, sgn\left(s_{E_{4,389}}(4)\right), sgn\left(s_{E_{4,389}}(5.7)\right)\right] = \left[4.0825, 4.0828, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{390}, a_{391}, sgn\left(s_{E_{4,390}}(4)\right), sgn\left(s_{E_{4,390}}(5.7)\right)\right] = \left[4.0828, 4.0831, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{391}, a_{392}, sgn\left(s_{E_{4,391}}(4)\right), sgn\left(s_{E_{4,391}}(5.7)\right)\right] = \left[4.0831, 4.0834, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{392}, a_{393}, sgn\left(s_{E_{4,392}}(4)\right), sgn\left(s_{E_{4,392}}(5.7)\right)\right] = \left[4.0834, 4.0836, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{393}, a_{394}, sgn\left(s_{E_{4,393}}(4)\right), sgn\left(s_{E_{4,393}}(5.7)\right)\right] = \left[4.0836, 4.0839, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{394}, a_{395}, sgn\left(s_{E_{4,394}}(4)\right), sgn\left(s_{E_{4,394}}(5.7)\right)\right] = \left[4.0839, 4.0842, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{395}, a_{396}, sgn\left(s_{E_{4,395}}(4)\right), sgn\left(s_{E_{4,395}}(5.7)\right)\right] = \left[4.0842, 4.0845, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{396}, a_{397}, sgn\left(s_{E_{4,396}}(4)\right), sgn\left(s_{E_{4,396}}(5.7)\right)\right] = \left[4.0845, 4.0848, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{397}, a_{398}, sgn\left(s_{E_{4,397}}(4)\right), sgn\left(s_{E_{4,397}}(5.7)\right)\right] = \left[4.0848, 4.0850, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{398}, a_{399}, sgn\left(s_{E_{4,398}}(4)\right), sgn\left(s_{E_{4,398}}(5.7)\right)\right] = \left[4.0850, 4.0853, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{399}, a_{400}, sgn\left(s_{E_{4,399}}(4)\right), sgn\left(s_{E_{4,399}}(5.7)\right)\right] = \left[4.0853, 4.0856, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{400}, a_{401}, sgn\left(s_{E_{4,400}}(4)\right), sgn\left(s_{E_{4,400}}(5.7)\right)\right] = \left[4.0856, 4.0859, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{401}, a_{402}, sgn\left(s_{E_{4,401}}(4)\right), sgn\left(s_{E_{4,401}}(5.7)\right)\right] = \left[4.0859, 4.0862, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{402}, a_{403}, sgn\left(s_{E_{4,402}}(4)\right), sgn\left(s_{E_{4,402}}(5.7)\right)\right] = \left[4.0862, 4.0864, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{403}, a_{404}, sgn\left(s_{E_{4,403}}(4)\right), sgn\left(s_{E_{4,403}}(5.7)\right)\right] = \left[4.0864, 4.0867, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{404}, a_{405}, sgn\left(s_{E_{4,404}}(4)\right), sgn\left(s_{E_{4,404}}(5.7)\right)\right] = \left[4.0867, 4.0870, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{405}, a_{406}, sgn\left(s_{E_{4,405}}(4)\right), sgn\left(s_{E_{4,405}}(5.7)\right)\right] = \left[4.0870, 4.0873, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{406}, a_{407}, sgn\left(s_{E_{4,406}}(4)\right), sgn\left(s_{E_{4,406}}(5.7)\right)\right] = \left[4.0873, 4.0876, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{407}, a_{408}, sgn\left(s_{E_{4,407}}(4)\right), sgn\left(s_{E_{4,407}}(5.7)\right)\right] = \left[4.0876, 4.0878, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{408}, a_{409}, sgn\left(s_{E_{4,408}}(4)\right), sgn\left(s_{E_{4,408}}(5.7)\right)\right] = \left[4.0878, 4.0881, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{409}, a_{410}, sgn\left(s_{E_{4,409}}(4)\right), sgn\left(s_{E_{4,409}}(5.7)\right)\right] = \left[4.0881, 4.0884, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{410}, a_{411}, sgn\left(s_{E_{4,410}}(4)\right), sgn\left(s_{E_{4,410}}(5.7)\right)\right] = \left[4.0884, 4.0887, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{411}, a_{412}, sgn\left(s_{E_{4,411}}(4)\right), sgn\left(s_{E_{4,411}}(5.7)\right)\right] = \left[4.0887, 4.0890, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{412}, a_{413}, sgn\left(s_{E_{4,412}}(4)\right), sgn\left(s_{E_{4,412}}(5.7)\right)\right] = \left[4.0890, 4.0892, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{413}, a_{414}, sgn\left(s_{E_{4,413}}(4)\right), sgn\left(s_{E_{4,413}}(5.7)\right)\right] = \left[4.0892, 4.0895, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{414}, a_{415}, sgn\left(s_{E_{4,414}}(4)\right), sgn\left(s_{E_{4,414}}(5.7)\right)\right] = \left[4.0895, 4.0898, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{415}, a_{416}, sgn\left(s_{E_{4,415}}(4)\right), sgn\left(s_{E_{4,415}}(5.7)\right)\right] = \left[4.0898, 4.0901, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{416}, a_{417}, sgn\left(s_{E_{4,416}}(4)\right), sgn\left(s_{E_{4,416}}(5.7)\right)\right] = \left[4.0901, 4.0904, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{417}, a_{418}, sgn\left(s_{E_{4,417}}(4)\right), sgn\left(s_{E_{4,417}}(5.7)\right)\right] = \left[4.0904, 4.0906, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{418}, a_{419}, sgn\left(s_{E_{4,418}}(4)\right), sgn\left(s_{E_{4,418}}(5.7)\right)\right] = \left[4.0906, 4.0909, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{419}, a_{420}, sgn\left(s_{E_{4,419}}(4)\right), sgn\left(s_{E_{4,419}}(5.7)\right)\right] = \left[4.0909, 4.0912, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{420}, a_{421}, sgn\left(s_{E_{4,420}}(4)\right), sgn\left(s_{E_{4,420}}(5.7)\right)\right] = \left[4.0912, 4.0915, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{421}, a_{422}, sgn\left(s_{E_{4,421}}(4)\right), sgn\left(s_{E_{4,421}}(5.7)\right)\right] = \left[4.0915, 4.0918, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{422}, a_{423}, sgn\left(s_{E_{4,422}}(4)\right), sgn\left(s_{E_{4,422}}(5.7)\right)\right] = \left[4.0918, 4.0920, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{423}, a_{424}, sgn\left(s_{E_{4,423}}(4)\right), sgn\left(s_{E_{4,423}}(5.7)\right)\right] = \left[4.0920, 4.0923, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{424}, a_{425}, sgn\left(s_{E_{4,424}}(4)\right), sgn\left(s_{E_{4,424}}(5.7)\right)\right] = \left[4.0923, 4.0926, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{425}, a_{426}, sgn\left(s_{E_{4,425}}(4)\right), sgn\left(s_{E_{4,425}}(5.7)\right)\right] = \left[4.0926, 4.0929, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{426}, a_{427}, sgn\left(s_{E_{4,426}}(4)\right), sgn\left(s_{E_{4,426}}(5.7)\right)\right] = \left[4.0929, 4.0932, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{427}, a_{428}, sgn\left(s_{E_{4,427}}(4)\right), sgn\left(s_{E_{4,427}}(5.7)\right)\right] = \left[4.0932, 4.0934, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{428}, a_{429}, sgn\left(s_{E_{4,428}}(4)\right), sgn\left(s_{E_{4,428}}(5.7)\right)\right] = \left[4.0934, 4.0937, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{429}, a_{430}, sgn\left(s_{E_{4,429}}(4)\right), sgn\left(s_{E_{4,429}}(5.7)\right)\right] = \left[4.0937, 4.0940, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{430}, a_{431}, sgn\left(s_{E_{4,430}}(4)\right), sgn\left(s_{E_{4,430}}(5.7)\right)\right] = \left[4.0940, 4.0943, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{431}, a_{432}, sgn\left(s_{E_{4,431}}(4)\right), sgn\left(s_{E_{4,431}}(5.7)\right)\right] = \left[4.0943, 4.0946, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{432}, a_{433}, sgn\left(s_{E_{4,432}}(4)\right), sgn\left(s_{E_{4,432}}(5.7)\right)\right] = \left[4.0946, 4.0948, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{433}, a_{434}, sgn\left(s_{E_{4,433}}(4)\right), sgn\left(s_{E_{4,433}}(5.7)\right)\right] = \left[4.0948, 4.0951, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{434}, a_{435}, sgn\left(s_{E_{4,434}}(4)\right), sgn\left(s_{E_{4,434}}(5.7)\right)\right] = \left[4.0951, 4.0954, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{435}, a_{436}, sgn\left(s_{E_{4,435}}(4)\right), sgn\left(s_{E_{4,435}}(5.7)\right)\right] = \left[4.0954, 4.0957, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{436}, a_{437}, sgn\left(s_{E_{4,436}}(4)\right), sgn\left(s_{E_{4,436}}(5.7)\right)\right] = \left[4.0957, 4.0960, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{437}, a_{438}, sgn\left(s_{E_{4,437}}(4)\right), sgn\left(s_{E_{4,437}}(5.7)\right)\right] = \left[4.0960, 4.0962, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{438}, a_{439}, sgn\left(s_{E_{4,438}}(4)\right), sgn\left(s_{E_{4,438}}(5.7)\right)\right] = \left[4.0962, 4.0965, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{439}, a_{440}, sgn\left(s_{E_{4,439}}(4)\right), sgn\left(s_{E_{4,439}}(5.7)\right)\right] = \left[4.0965, 4.0968, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{440}, a_{441}, sgn\left(s_{E_{4,440}}(4)\right), sgn\left(s_{E_{4,440}}(5.7)\right)\right] = \left[4.0968, 4.0971, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{441}, a_{442}, sgn\left(s_{E_{4,441}}(4)\right), sgn\left(s_{E_{4,441}}(5.7)\right)\right] = \left[4.0971, 4.0974, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{442}, a_{443}, sgn\left(s_{E_{4,442}}(4)\right), sgn\left(s_{E_{4,442}}(5.7)\right)\right] = \left[4.0974, 4.0976, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{443}, a_{444}, sgn\left(s_{E_{4,443}}(4)\right), sgn\left(s_{E_{4,443}}(5.7)\right)\right] = \left[4.0976, 4.0979, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{444}, a_{445}, sgn\left(s_{E_{4,444}}(4)\right), sgn\left(s_{E_{4,444}}(5.7)\right)\right] = \left[4.0979, 4.0982, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{445}, a_{446}, sgn\left(s_{E_{4,445}}(4)\right), sgn\left(s_{E_{4,445}}(5.7)\right)\right] = \left[4.0982, 4.0985, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{446}, a_{447}, sgn\left(s_{E_{4,446}}(4)\right), sgn\left(s_{E_{4,446}}(5.7)\right)\right] = \left[4.0985, 4.0988, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{447}, a_{448}, sgn\left(s_{E_{4,447}}(4)\right), sgn\left(s_{E_{4,447}}(5.7)\right)\right] = \left[4.0988, 4.0990, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{448}, a_{449}, sgn\left(s_{E_{4,448}}(4)\right), sgn\left(s_{E_{4,448}}(5.7)\right)\right] = \left[4.0990, 4.0993, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{449}, a_{450}, sgn\left(s_{E_{4,449}}(4)\right), sgn\left(s_{E_{4,449}}(5.7)\right)\right] = \left[4.0993, 4.0996, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{450}, a_{451}, sgn\left(s_{E_{4,450}}(4)\right), sgn\left(s_{E_{4,450}}(5.7)\right)\right] = \left[4.0996, 4.0999, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{451}, a_{452}, sgn\left(s_{E_{4,451}}(4)\right), sgn\left(s_{E_{4,451}}(5.7)\right)\right] = \left[4.0999, 4.1002, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{452}, a_{453}, sgn\left(s_{E_{4,452}}(4)\right), sgn\left(s_{E_{4,452}}(5.7)\right)\right] = \left[4.1002, 4.1004, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{453}, a_{454}, sgn\left(s_{E_{4,453}}(4)\right), sgn\left(s_{E_{4,453}}(5.7)\right)\right] = \left[4.1004, 4.1007, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{454}, a_{455}, sgn\left(s_{E_{4,454}}(4)\right), sgn\left(s_{E_{4,454}}(5.7)\right)\right] = \left[4.1007, 4.1010, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{455}, a_{456}, sgn\left(s_{E_{4,455}}(4)\right), sgn\left(s_{E_{4,455}}(5.7)\right)\right] = \left[4.1010, 4.1013, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{456}, a_{457}, sgn\left(s_{E_{4,456}}(4)\right), sgn\left(s_{E_{4,456}}(5.7)\right)\right] = \left[4.1013, 4.1016, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{457}, a_{458}, sgn\left(s_{E_{4,457}}(4)\right), sgn\left(s_{E_{4,457}}(5.7)\right)\right] = \left[4.1016, 4.1018, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{458}, a_{459}, sgn\left(s_{E_{4,458}}(4)\right), sgn\left(s_{E_{4,458}}(5.7)\right)\right] = \left[4.1018, 4.1021, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{459}, a_{460}, sgn\left(s_{E_{4,459}}(4)\right), sgn\left(s_{E_{4,459}}(5.7)\right)\right] = \left[4.1021, 4.1024, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{460}, a_{461}, sgn\left(s_{E_{4,460}}(4)\right), sgn\left(s_{E_{4,460}}(5.7)\right)\right] = \left[4.1024, 4.1027, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{461}, a_{462}, sgn\left(s_{E_{4,461}}(4)\right), sgn\left(s_{E_{4,461}}(5.7)\right)\right] = \left[4.1027, 4.1030, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{462}, a_{463}, sgn\left(s_{E_{4,462}}(4)\right), sgn\left(s_{E_{4,462}}(5.7)\right)\right] = \left[4.1030, 4.1032, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{463}, a_{464}, sgn\left(s_{E_{4,463}}(4)\right), sgn\left(s_{E_{4,463}}(5.7)\right)\right] = \left[4.1032, 4.1035, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{464}, a_{465}, sgn\left(s_{E_{4,464}}(4)\right), sgn\left(s_{E_{4,464}}(5.7)\right)\right] = \left[4.1035, 4.1038, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{465}, a_{466}, sgn\left(s_{E_{4,465}}(4)\right), sgn\left(s_{E_{4,465}}(5.7)\right)\right] = \left[4.1038, 4.1041, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{466}, a_{467}, sgn\left(s_{E_{4,466}}(4)\right), sgn\left(s_{E_{4,466}}(5.7)\right)\right] = \left[4.1041, 4.1044, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{467}, a_{468}, sgn\left(s_{E_{4,467}}(4)\right), sgn\left(s_{E_{4,467}}(5.7)\right)\right] = \left[4.1044, 4.1046, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{468}, a_{469}, sgn\left(s_{E_{4,468}}(4)\right), sgn\left(s_{E_{4,468}}(5.7)\right)\right] = \left[4.1046, 4.1049, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{469}, a_{470}, sgn\left(s_{E_{4,469}}(4)\right), sgn\left(s_{E_{4,469}}(5.7)\right)\right] = \left[4.1049, 4.1052, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{470}, a_{471}, sgn\left(s_{E_{4,470}}(4)\right), sgn\left(s_{E_{4,470}}(5.7)\right)\right] = \left[4.1052, 4.1055, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{471}, a_{472}, sgn\left(s_{E_{4,471}}(4)\right), sgn\left(s_{E_{4,471}}(5.7)\right)\right] = \left[4.1055, 4.1058, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{472}, a_{473}, sgn\left(s_{E_{4,472}}(4)\right), sgn\left(s_{E_{4,472}}(5.7)\right)\right] = \left[4.1058, 4.1060, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{473}, a_{474}, sgn\left(s_{E_{4,473}}(4)\right), sgn\left(s_{E_{4,473}}(5.7)\right)\right] = \left[4.1060, 4.1063, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{474}, a_{475}, sgn\left(s_{E_{4,474}}(4)\right), sgn\left(s_{E_{4,474}}(5.7)\right)\right] = \left[4.1063, 4.1066, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{475}, a_{476}, sgn\left(s_{E_{4,475}}(4)\right), sgn\left(s_{E_{4,475}}(5.7)\right)\right] = \left[4.1066, 4.1069, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{476}, a_{477}, sgn\left(s_{E_{4,476}}(4)\right), sgn\left(s_{E_{4,476}}(5.7)\right)\right] = \left[4.1069, 4.1072, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{477}, a_{478}, sgn\left(s_{E_{4,477}}(4)\right), sgn\left(s_{E_{4,477}}(5.7)\right)\right] = \left[4.1072, 4.1074, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{478}, a_{479}, sgn\left(s_{E_{4,478}}(4)\right), sgn\left(s_{E_{4,478}}(5.7)\right)\right] = \left[4.1074, 4.1077, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right]$$

$$\left[a_{479}, a_{480}, sgn\left(s_{E_{4,479}}(4)\right), sgn\left(s_{E_{4,479}}(5.7)\right)\right] = \left[4.1077, 4.1080, \begin{bmatrix} -1 & -1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 1 & 1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}\right] \quad \textbf{(1)}$$

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