```
KnotSort@l_List :=
  KnotSort@l = Sort[l, If[Length@##1 == Length@##2,
      If[#1 === Abs /@ #1,
       #2 =!= Abs /@ #2 \/ Order[#1, #2] == 1,
       #2 =!= Abs /@ #2 /\ Order[#1, #2] == 1],
      Length@##1 < Length@##2] &];
```