

KnotSort@l sorts the knots of the list l where alternating knots always come first and all further order is determined lexicographically where non-alternating knots are first compared by absolute value, and then further canonically.

```
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 && If[Abs /@ #1 === Abs /@ #2, Order[#1, #2] == 1,  
      Order[Abs /@ #1, Abs /@ #2] == 1]],  
  Length@#1 < Length@#2] &];
```