

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] &];
```