```
n = 45;

a = Range[n]; b = Subsets[a, {2}];
b = Select[b, IntegerQ[Sqrt[#[[1]] + #[[2]]]] &];
b = DirectedEdge @@@ b;
g = Graph[b];
g1 = UndirectedGraph[g, VertexLabels → "Name", EdgeStyle → Thick];
s = FindHamiltonianCycle[g1] // Flatten;

path = HighlightGraph[g1, PathGraph[s, EdgeStyle → Dashed]]

s = ToString /@ s;
s = StringReplace[s, "⊷" .. → ","];
p = DeleteDuplicates[Flatten[StringCases[s, RegularExpression["\\d+"]]]]
```

```
{1, 8, 28, 21, 43, 6, 30, 19, 17, 32, 4, 45, 36, 13, 12, 24, 25, 39, 10, 15, 34, 2, 14,
 11, 38, 26, 23, 41, 40, 9, 27, 37, 44, 5, 31, 18, 7, 42, 22, 3, 33, 16, 20, 29, 35}
```