Finding the largest matching in a graph

- Let G^* be a copy of G
- For $i = 1$ up to m DO
  - Let G' be the graph obtained by deleting edge e_i (but not the endpoints of e_i) from G^*.
  - If $\mathcal{A}(G', k) = YES$, then set $G^* = G'$.

  Return the edge set of G^*.

Notes:

- The edge set returned at the end is a matching (we'll look at this carefully in the next slide).
- We never reduce the size of the maximum matching when we delete edges. Hence, $\mathcal{B}(G^*) = \mathcal{B}(G)$.
- Therefore this algorithm returns a maximum matching.