

PRIM( $G, w, r$ )

$Q = \emptyset$

**for** each  $u \in G.V$

$u.key = \infty$

$u.\pi = \text{NIL}$

INSERT( $Q, u$ )

DECREASE-KEY( $Q, r, 0$ )      *//*  $r.key = 0$

**while**  $Q \neq \emptyset$

$u = \text{EXTRACT-MIN}(Q)$

**for** each  $v \in G.Adj[u]$

**if**  $v \in Q$  and  $w(u, v) < v.key$

$v.\pi = u$

DECREASE-KEY( $Q, v, w(u, v)$ )