Policy Improvement:

S	A	$Q^{\pi}(S,A) = R(S,A) + \gamma \sum_{S'} T(S,A,S') V^{\pi}(S')$
(0,0)	Right	$R([0,0], Right) + \gamma \left[T([0,0], Right, [0,1]) V([0,1]) + T([0,0], Right, [1,0]) V([1,0]) \right]$ $= 0 + 0.9 \times [0.9 \times 3.1 + 0.1 \times 0] = 2.511$
	Left	$R([0,0], Left) + \gamma [T([0,0], Left, [0,0]) V([0,0])]$ $= 0 + 0.9 \times [1 \times (-4.05)]$ $= -3.645$
	Up	$R([0,0], Up) + \gamma [T([0,0], Up, [0,0]) V([0,0])]$ $= 0 + 0.9 \times [1 \times (-4.05)]$ $= -3.645$
	Down	$R([0,0], Down) + \gamma [T([0,0], Down, [1,0]) V([1,0]) + T([0,0], Down, [0,1]) V([0,1])]$ $= 0 + 0.9 \times [0.9 \times 0 + 0.1 \times 3.1]$ $= 0.279$
	Nothing	$R([0,0], Nothing) + \gamma [T([0,0], Nothing, [0,0]) V([0,0])]$ $= 0 + 0.9 \times [1 \times (-4.05)]$ $= -3645$

In the new policy, $\pi([0,0]) = Right$ because the computed Q-value of action Right in state [0,0] is the highest among all actions.

Do the same for all remaining states.