$y = \text{torch.argmax}(x, \text{dim}, \text{keepdim})$

Require:
$$|X| = (d_1, d_2, \cdots, d_e)$$
- $0 \le \text{dim} < \ell$ or None

keepdim is bool

Guarantee:
$$|y| \begin{cases} 1 & (\text{dim}=\text{None}) \\ (d_1, d_2, \cdots d_{\text{dim}}, d_{\text{dim+1}}, \cdots, d_e) & (\text{dim}\neq\text{None}, \text{keepdim}=\text{false}) \\ (d_1, d_2, \cdots, d_{\text{dim}}, 1, d_{\text{dim+1}}, \cdots, d_e) & (\text{dim}\neq\text{None}, \text{keepdim}=\text{True}) \end{cases}$$

$\underline{\text{dim}=\text{None}}$

$\sigma \vdash E \Rightarrow e, c$

$k = \text{rank}(e)$
$\sigma' = \{(k \ge 1) \wedge (n=1)\}$
$\sigma \vdash \text{torch.argmax}(E, \text{None}) \Rightarrow m, c \cup \sigma'$

$\underline{\text{dim}\neq\text{None} \quad \text{keepdim}=\text{False}}$

$\sigma \vdash E \Rightarrow e, c$
$k = \text{rank}(e)$
$e' = e[1:p] @ e[p+2:k]$
$\sigma' = \{(k \ge 1) \wedge (0 \le p < k-1)\}$
$\sigma \vdash \text{torch.argmax}(E, p, \text{keepdim}=\text{False}) \Rightarrow e', c \cup \sigma'$

$\underline{\text{dim}\neq\text{None} \quad \text{keepdim}=\text{True}}$

$\sigma \vdash E \Rightarrow e, c$
$k = \text{rank}(e)$
$e' = e[1:p] @ 1 @ e[p+2:k]$
$\sigma' = \{(k \ge 1) \wedge (0 \le p < k-1)\}$
$\sigma \vdash \text{torch.argmax}(E, p, \text{keepdim}=\text{True}) \Rightarrow e', c \cup \sigma'$

Description: Returns argmaxvalue of Tensor dim-dimensionwise. keepdim decides whether dim-dimensions kept or renamed