

$$y = \text{torch.topk}(x, k, \text{dim}=n, , ,)$$

$$\text{require : } |X| = (d_1, d_2, \dots, d_n), \\ 0 \leq n < l, \quad k \leq d_n$$

$$\text{Guarantee : } |y| = k$$

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

$$\sigma \vdash n \Rightarrow c'$$

$$\sigma \vdash l \Rightarrow c''$$

$$k = \text{rank}(e)$$

$$d'' = \{ (k \geq 1) \wedge (0 \leq n < k) \wedge (0 \leq l < e[n+1]) \}$$

$$e' = l$$

$$\sigma \vdash \text{torch.topk}(E, l, n) \Rightarrow e', \text{acc}' \cup c' \cup c''$$

Description returns ^{tensor of} topK elements given tensor dim-dimension wise,
and tensor of its indices respectively

$$\text{torch.topk}(x, k, , ,) = \text{torch.topk}(x, k, x.\text{size}(-1), , ,)$$