function BELIEF-NET-ASK(X) **returns** a probability distribution over the values of X
  inputs: X, a random variable

  SUPPORT-EXCEPT(X, *null*)

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function SUPPORT-EXCEPT(X, V) **returns** $\mathbf{P}(X|E_{X\setminus V})$

  if EVIDENCE?(X) **then return** observed point distribution for X
  else
    calculate $\mathbf{P}(E^-_{X\setminus V}|X)$ = EVIDENCE-EXCEPT(X, V)
    $\boldsymbol{U} \leftarrow$ PARENTS[X]
    if U is empty
      then return $\alpha\ \mathbf{P}(E^-_{X\setminus V}|X)\ \mathbf{P}(X)$
    else
      for each U_i **in** U
        calculate and store $\mathbf{P}(U_i|E_{U_i\setminus X})$ = SUPPORT-EXCEPT(U_i, X)
      return $\alpha\ \mathbf{P}(E^-_{X\setminus V}|X)\ \sum_{\mathbf{u}}\ \mathbf{P}(X|\mathbf{u})\ \prod_i\ \mathbf{P}(U_i|E_{u_i\setminus X})$

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function EVIDENCE-EXCEPT(X, V) **returns** $\mathbf{P}(E^-_{X\setminus V}|X)$

  $\mathbf{Y} \leftarrow$ CHILDREN[X] $-$ V
  if Y is empty
    then return a uniform distribution
  else
    for each Y_i **in Y do**
      calculate $\mathbf{P}(E^-_{Y_i}|y_i)$ = EVIDENCE-EXCEPT(Y_i, null)
      $\mathbf{Z}_i \leftarrow$ PARENTS[Y_i] $-$ X
      for each Z_{ij} **in** $\mathbf{Z}_i$
        calculate $\mathbf{P}(Z_{ij}|E_{Z_{ij}\setminus Y_i})$ = SUPPORT-EXCEPT(Z_{ij}, Y_i)
    return $\beta\ \prod_i\ \sum_{y_i}\ P(E^-_{Y_i}|y_i)\ \sum_{\mathbf{z}_i}\ \mathbf{P}(y_i|X,\mathbf{z}_i)\ \prod_j\ P(z_{ij}|E_{Z_{ij}\setminus Y_i})$