1 Practice

Provide the full lambda computation of the following sentences.

Solution to step-by-step computation

1. ⟦Every judge criticized Melrose⟧

   (a) ⟦criticized Melrose⟧
   $= ⟦\text{criticize Melrose}⟧$
   $= ⟦\text{criticize}⟧(⟦\text{Melrose}⟧)$
   $= ⟦\text{criticize}⟧(\text{m})$
   $= \lambda x[\lambda y[CRITICIZE(y, x)]](m)$
   $= \lambda y[CRITICIZE(y, m)]$

   (b) ⟦Every judge⟧
   $= ⟦\text{every}⟧(⟦\text{judge}⟧)$
   $= \lambda f_{\langle e,t\rangle}[\forall x[f(x) \rightarrow g(x)]](⟦\text{judge}⟧)$
   $= \forall x[⟦\text{judge}⟧(x) \rightarrow g(x)]$
   $= \forall x[\lambda y[JUDGE(y)](x) \rightarrow g(x)]$
   $= \forall x[JUDGE(x) \rightarrow g(x)]$

   (c) ⟦Every judge criticized Melrose⟧
   $= ⟦\text{every judge criticize Melrose}⟧$
   $= ⟦\text{every judge}⟧(⟦\text{criticize Melrose}⟧)$
   $= \forall x[JUDGE(x) \rightarrow g(x)](⟦\text{criticize Melrose}⟧)$
   $= \forall x[JUDGE(x) \rightarrow ⟦\text{criticize Melrose}⟧(x)]$
   $= \forall x[JUDGE(x) \rightarrow \lambda y[CRITICIZE(y, m)](x)]$
   $= \text{T iff } \forall x[JUDGE(x) \rightarrow CRITICIZE(x, m)]$

2. Some girl stole the granola-bar

(a) ⟦the granola-bar⟧
$= ⟦\text{the}⟧(⟦\text{granola-bar}⟧)$
$= \lambda f_{\langle e,t\rangle}[\iota y[f(y)]](⟦\text{granola-bar}⟧)$
$= \iota y[⟦\text{granola-bar}⟧(y)]$
$= \iota y[\lambda x[GRANOLABAR(x)](y)]$
$= \iota y[GRANOLABAR(y)]$
$= g$

(b) ⟦stole the granola-bar⟧
$= ⟦\text{steal the granola-bar}⟧$
$= ⟦\text{steal}⟧(⟦\text{the granola-bar}⟧)$
$= ⟦\text{steal}⟧(g)$
$= \lambda x[\lambda y[STEAL(y,x)]](g)$
$= \lambda y[STEAL(y,g)]$

(c) ⟦Some girl⟧
$= ⟦\text{some}⟧(⟦\text{girl}⟧)$
$= \lambda f_{\langle e,t\rangle}[\exists x[f(x) \;\&\; g(x)]](⟦\text{girl}⟧)$
$= \exists x[⟦\text{girl}⟧(x) \;\&\; g(x)]$
$= \exists x[\lambda y[GIRL(y)](x) \;\&\; g(x)]$
$= \exists x[GIRL(x) \;\&\; g(x)]$

(d) ⟦Some girl stole the granola-bar⟧
$= ⟦\text{some girl steal the granola-bar}⟧$
$= ⟦\text{some girl}⟧(⟦\text{steal the granola-bar}⟧)$
$= \exists x[GIRL(x) \;\&\; g(x)](⟦\text{steal the granola-bar}⟧)$
$= \exists x[GIRL(x) \;\&\; ⟦\text{steal the granola-bar}⟧(x)]$
$= \exists x[GIRL(x) \;\&\; \lambda y[STEAL(y,g)](x)]$
$= \text{T iff } \exists x[GIRL(x) \;\&\; STEAL(x,g)]$