# thm_2Elebesgue_2Eseq__sup__def__compute (TMWn-LQcxNUWmFA4ZUtfW3TuCdR41WEiAcqU)

October 26, 2020

Let $ty\_2Enum\_2Enum : \iota$ be given. Assume the following.

$$nonempty\ ty\_2Enum\_2Enum \tag{1}$$

Let $c\_2Earithmetic\_2E\_2D : \iota$ be given. Assume the following.

$$c\_2Earithmetic\_2E\_2D \in ((ty\_2Enum\_2Enum^{ty\_2Enum\_2Enum})^{ty\_2Enum\_2Enum}) \tag{2}$$

**Definition 1** *We define* c_2Emin_2E_3D_3D_3E *to be* $\lambda P \in 2.\lambda Q \in 2.inj\_\_o\ (p\ P \Rightarrow p\ Q)$ *of type* $\iota$.

Let $c\_2Enum\_2EZERO\_\_REP : \iota$ be given. Assume the following.

$$c\_2Enum\_2EZERO\_\_REP \in omega \tag{3}$$

Let $c\_2Enum\_2EABS\_\_num : \iota$ be given. Assume the following.

$$c\_2Enum\_2EABS\_\_num \in (ty\_2Enum\_2Enum^{omega}) \tag{4}$$

**Definition 2** *We define* c_2Emin_2E_3D *to be* $\lambda A.\lambda x \in A.\lambda y \in A.inj\_\_o\ (x = y)$ *of type* $\iota \Rightarrow \iota$.

**Definition 3** *We define* c_2Enum_2E0 *to be* $(ap\ c\_2Enum\_2EABS\_\_num\ c\_2Enum\_2EZERO\_\_REP)$.

Let $c\_2Enum\_2EREP\_\_num : \iota$ be given. Assume the following.

$$c\_2Enum\_2EREP\_\_num \in (omega^{ty\_2Enum\_2Enum}) \tag{5}$$

Let $c\_2Enum\_2ESUC\_\_REP : \iota$ be given. Assume the following.

$$c\_2Enum\_2ESUC\_\_REP \in (omega^{omega}) \tag{6}$$

**Definition 4** *We define* c_2Ebool_2ET *to be* $(ap\ (ap\ (\mathsf{c\_2Emin\_2E\_3D}\ (2^2))\ (\lambda V0x \in 2.V0x))\ (\lambda V1x \in 2.V$

**Definition 5** *We define* c_2Ebool_2E_21 *to be* $\lambda A\_27a : \iota.(\lambda V0P \in (2^{A\_27a}).(ap\ (ap\ (\mathsf{c\_2Emin\_2E\_3D}\ (2^{A\_27}$

**Definition 6** *We define* c_2Enum_2ESUC *to be* $\lambda V0m \in ty\_2Enum\_2Enum.(ap\ c\_2Enum\_2EABS\_\_num\ ($

Let $c\_2Earithmetic\_2E\_2B : \iota$ be given. Assume the following.

$$c\_2Earithmetic\_2E\_2B \in ((ty\_2Enum\_2Enum^{ty\_2Enum\_2Enum})^{ty\_2Enum\_2Enum}) \tag{7}$$

**Definition 7** *We define* c_2Earithmetic_2EBIT2 *to be* $\lambda V0n \in ty\_2Enum\_2Enum.(ap\ (ap\ c\_2Earithmetic\_$

Let $ty\_2Erealax\_2Ereal : \iota$ be given. Assume the following.

$$nonempty\ ty\_2Erealax\_2Ereal \tag{8}$$

Let $c\_2Ereal\_2Ereal\_\_of\_\_num : \iota$ be given. Assume the following.

$$c\_2Ereal\_2Ereal\_\_of\_\_num \in (ty\_2Erealax\_2Ereal^{ty\_2Enum\_2Enum}) \tag{9}$$

Let $ty\_2Ehreal\_2Ehreal : \iota$ be given. Assume the following.

$$nonempty\ ty\_2Ehreal\_2Ehreal \tag{10}$$

Let $ty\_2Epair\_2Eprod : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall A0.nonempty\ A0 \Rightarrow \forall A1.nonempty\ A1 \Rightarrow nonempty\ (ty\_2Epair\_2Eprod\ A0\ A1) \tag{11}$$

Let $c\_2Erealax\_2Ereal\_\_REP\_\_CLASS : \iota$ be given. Assume the following.

$$c\_2Erealax\_2Ereal\_\_REP\_\_CLASS \in ((2^{(ty\_2Epair\_2Eprod\ ty\_2Ehreal\_2Ehreal\ ty\_2Ehreal\_2Ehreal)})^{ty\_2Erealax} \tag{12}$$

**Definition 8** *We define* c_2Emin_2E_40 *to be* $\lambda A.\lambda P \in 2^A.$**if** $(\exists x \in A.p\ (ap\ P\ x))$ **then** $(the\ (\lambda x.x \in A \wedge p$ *of type* $\iota \Rightarrow \iota$.

**Definition 9** *We define* c_2Erealax_2Ereal__REP *to be* $\lambda V0a \in ty\_2Erealax\_2Ereal.(ap\ (\mathsf{c\_2Emin\_2E\_40}\ (ty$

Let $c\_2Erealax\_2Etreal\_\_inv : \iota$ be given. Assume the following.

$$c\_2Erealax\_2Etreal\_\_inv \in ((ty\_2Epair\_2Eprod\ ty\_2Ehreal\_2Ehreal\ ty\_2Ehreal\_2Ehreal)^{(ty\_2Epair\_2Eprod\ ty\_2Ehreal\_2Ehreal\ ty\_2Ehreal\_2Ehreal)}) \tag{13}$$

Let $c\_2Erealax\_2Etreal\_\_eq : \iota$ be given. Assume the following.

$$c\_2Erealax\_2Etreal\_\_eq \in ((2^{(ty\_2Epair\_2Eprod\ ty\_2Ehreal\_2Ehreal\ ty\_2Ehreal\_2Ehreal)})^{(ty\_2Epair\_2Eprod\ ty\_2Eh} \tag{14}$$

Let $c\_2Erealax\_2Ereal\_\_ABS\_\_CLASS : \iota$ be given. Assume the following.

$$c\_2Erealax\_2Ereal\_\_ABS\_\_CLASS \in (ty\_2Erealax\_2Ereal^{(2^{(ty\_2Epair\_2Eprod\ ty\_2Ehreal\_2Ehreal\ ty\_2Ehreal\_2Ehr} \tag{15}$$

**Definition 10** *We define* c_2Erealax_2Ereal__ABS *to be* $\lambda V0r \in (ty\_2Epair\_2Eprod\ ty\_2Ehreal\_2Ehreal\ ty$

**Definition 11** *We define* c_2Erealax_2Einv *to be* $\lambda V0T1 \in ty\_2Erealax\_2Ereal.(ap$ c_2Erealax_2Ereal__ABS

Let $c\_2Erealax\_2Etreal\_\_mul : \iota$ be given. Assume the following.

$$c\_2Erealax\_2Etreal\_\_mul \in (((ty\_2Epair\_2Eprod\ ty\_2Ehreal\_2Ehreal\ ty\_2Ehreal\_2Ehreal)^{(ty\_2Epair\_2Eprod\ ty\_2Ehreal\_2Ehreal\ ty\_2Ehreal\_2Ehreal)})^{(ty\_2Epair\_2Eprod\ ty\_2Ehreal\_2Ehr} \quad (16)$$

**Definition 12** *We define* c_2Erealax_2Ereal__mul *to be* $\lambda V0T1 \in ty\_2Erealax\_2Ereal.\lambda V1T2 \in ty\_2Ereala$

**Definition 13** *We define* c_2Ereal_2E_2F *to be* $\lambda V0x \in ty\_2Erealax\_2Ereal.\lambda V1y \in ty\_2Erealax\_2Ereal.($

Let $c\_2Ereal\_2Epow : \iota$ be given. Assume the following.

$$c\_2Ereal\_2Epow \in ((ty\_2Erealax\_2Ereal^{ty\_2Enum\_2Enum})^{ty\_2Erealax\_2Ereal}) \quad (17)$$

Let $ty\_2Eextreal\_2Eextreal : \iota$ be given. Assume the following.

$$nonempty\ ty\_2Eextreal\_2Eextreal \quad (18)$$

Let $c\_2Eextreal\_2ENormal : \iota$ be given. Assume the following.

$$c\_2Eextreal\_2ENormal \in (ty\_2Eextreal\_2Eextreal^{ty\_2Erealax\_2Ereal}) \quad (19)$$

**Definition 14** *We define* c_2Earithmetic_2EZERO *to be* c_2Enum_2E0*.*

**Definition 15** *We define* c_2Earithmetic_2EBIT1 *to be* $\lambda V0n \in ty\_2Enum\_2Enum.(ap\ (ap\ c\_2Earithmetic$

**Definition 16** *We define* c_2Earithmetic_2ENUMERAL *to be* $\lambda V0x \in ty\_2Enum\_2Enum.V0x.$

**Definition 17** *We define* c_2Eextreal_2Eextreal__of__num *to be* $\lambda V0n \in ty\_2Enum\_2Enum.(ap\ c\_2Eextreal$

Let $c\_2Eextreal\_2Eextreal\_\_add : \iota$ be given. Assume the following.

$$c\_2Eextreal\_2Eextreal\_\_add \in ((ty\_2Eextreal\_2Eextreal^{ty\_2Eextreal\_2Eextreal})^{ty\_2Eextreal\_2Eextreal}) \quad (20)$$

Let $c\_2Erealax\_2Etreal\_\_lt : \iota$ be given. Assume the following.

$$c\_2Erealax\_2Etreal\_\_lt \in ((2^{(ty\_2Epair\_2Eprod\ ty\_2Ehreal\_2Ehreal\ ty\_2Ehreal\_2Ehreal)})^{(ty\_2Epair\_2Eprod\ ty\_2Ehr} \quad (21)$$

**Definition 18** *We define* c_2Erealax_2Ereal__lt *to be* $\lambda V0T1 \in ty\_2Erealax\_2Ereal.\lambda V1T2 \in ty\_2Erealax\_$

**Definition 19** *We define* c_2Ebool_2E_2F_5C *to be* $(\lambda V0t1 \in 2.(\lambda V1t2 \in 2.(ap$ (c_2Ebool_2E_21 2) $(\lambda V2t \in$

**Definition 20** *We define* c_2Ebool_2E_3F *to be* $\lambda A\_27a : \iota.(\lambda V0P \in (2^{A\_27a}).(ap\ V0P\ (ap$ (c_2Emin_2E_40

**Definition 21** *We define* c_2Ereal_2Esup *to be* $\lambda V0P \in (2^{ty\_2Erealax\_2Ereal}).(ap$ (c_2Emin_2E_40 $ty\_2Ereal$

Let $c\_2Eextreal\_2ENegInf : \iota$ be given. Assume the following.

$$c\_2Eextreal\_2ENegInf \in ty\_2Eextreal\_2Eextreal \tag{22}$$

**Definition 22** *We define* c_2Ebool_2EF *to be* $(ap\ (\mathsf{c\_2Ebool\_2E\_21}\ 2)\ (\lambda V0t \in 2.V0t))$.

**Definition 23** *We define* c_2Ebool_2ECOND *to be* $\lambda A\_27a : \iota.(\lambda V0t \in 2.(\lambda V1t1 \in A\_27a.(\lambda V2t2 \in A\_27a.($

Let $c\_2Eextreal\_2EPosInf : \iota$ be given. Assume the following.

$$c\_2Eextreal\_2EPosInf \in ty\_2Eextreal\_2Eextreal \tag{23}$$

Let $c\_2Eextreal\_2Eextreal\_\_le : \iota$ be given. Assume the following.

$$c\_2Eextreal\_2Eextreal\_\_le \in ((2^{ty\_2Eextreal\_2Eextreal})^{ty\_2Eextreal\_2Eextreal}) \tag{24}$$

**Definition 24** *We define* c_2Eextreal_2Eextreal__sup *to be* $\lambda V0p \in (2^{ty\_2Eextreal\_2Eextreal}).(ap\ (ap\ (ap\ (\mathsf{c\_2E}$

**Definition 25** *We define* c_2Ebool_2E_7E *to be* $(\lambda V0t \in 2.(ap\ (ap\ \mathsf{c\_2Emin\_2E\_3D\_3D\_3E}\ V0t)\ \mathsf{c\_2Ebool\_2E}$

**Definition 26** *We define* c_2Eextreal_2Eextreal__lt *to be* $\lambda V0x \in ty\_2Eextreal\_2Eextreal.\lambda V1y \in ty\_2Eext$

**Definition 27** *We define* c_2Ebool_2EIN *to be* $\lambda A\_27a : \iota.(\lambda V0x \in A\_27a.(\lambda V1f \in (2^{A\_27a}).(ap\ V1f\ V0x))$

Let $c\_2Elebesgue\_2Eseq\_\_sup : \iota$ be given. Assume the following.

$$c\_2Elebesgue\_2Eseq\_\_sup \in ((ty\_2Eextreal\_2Eextreal^{ty\_2Enum\_2Enum})^{(2^{ty\_2Eextreal\_2Eextreal})}) \tag{25}$$

Assume the following.

$$\forall A\_27a.nonempty\ A\_27a \Rightarrow (\forall V0f \in ((A\_27a^{ty\_2Enum\_2Enum})^{ty\_2Enum\_2Enum}). (\forall V1g \in (A\_27a^{ty\_2Enum\_2Enum}).((\forall V2n \in ty\_2Enum\_2Enum. ((ap\ V1g\ (ap\ \mathsf{c\_2Enum\_2ESUC}\ V2n)) = (ap\ (ap\ V0f\ V2n)\ (ap\ \mathsf{c\_2Enum\_2ESUC}\ V2n)))) \Leftrightarrow ((\forall V3n \in ty\_2Enum\_2Enum.((ap\ V1g\ (ap\ \mathsf{c\_2Earithmetic\_2ENUMERAL}\ (ap\ \mathsf{c\_2Earithmetic\_2EBIT1}\ V3n))) = (ap\ (ap\ V0f\ (ap\ (ap\ c\_2Earithmetic\_2E\_2D\ (ap\ \mathsf{c\_2Earithmetic\_2ENUMERAL}\ (ap\ \mathsf{c\_2Earithmetic\_2EBIT1}\ V3n)))\ (ap\ \mathsf{c\_2Earithmetic\_2ENUMERAL}\ (ap\ \mathsf{c\_2Earithmetic\_2EBIT1}\ \mathsf{c\_2Earithmetic\_2EZERO}))))\ (ap\ \mathsf{c\_2Earithmetic\_2ENUMERAL}\ (ap\ \mathsf{c\_2Earithmetic\_2EBIT1}\ V3n)))))) \wedge (\forall V4n \in ty\_2Enum\_2Enum.((ap\ V1g\ (ap\ \mathsf{c\_2Earithmetic\_2ENUMERAL}\ (ap\ \mathsf{c\_2Earithmetic\_2EBIT2}\ V4n))) = (ap\ (ap\ V0f\ (ap\ \mathsf{c\_2Earithmetic\_2ENUMERAL}\ (ap\ \mathsf{c\_2Earithmetic\_2EBIT1}\ V4n)))\ (ap\ \mathsf{c\_2Earithmetic\_2ENUMERAL}\ (ap\ \mathsf{c\_2Earithmetic\_2EBIT2}\ V4n))))))))) \tag{26}$$

Assume the following.

$$(\forall V0t1 \in 2.(\forall V1t2 \in 2.(((p\ V0t1) \Rightarrow (p\ V1t2)) \Rightarrow (((p\ V1t2) \Rightarrow (p\ V0t1)) \Rightarrow ((p\ V0t1) \Leftrightarrow (p\ V1t2)))))) \tag{27}$$

Assume the following.

$$
\begin{gathered}
((\forall V0P \in (2^{ty\_2Eextreal\_2Eextreal}).((ap\ (ap\ c\_2Elebesgue\_2Eseq\_\_sup \\
V0P)\ \mathsf{c\_2Enum\_2E0}) = (ap\ (\mathsf{c\_2Emin\_2E\_40}\ ty\_2Eextreal\_2Eextreal) \\
(\lambda V1r \in ty\_2Eextreal\_2Eextreal.(ap\ (ap\ \mathsf{c\_2Ebool\_2E\_2F\_5C} \\
(ap\ (ap\ (\mathsf{c\_2Ebool\_2EIN}\ ty\_2Eextreal\_2Eextreal)\ V1r)\ V0P))\ (ap \\
(ap\ \mathsf{c\_2Eextreal\_2Eextreal\_\_lt}\ (ap\ \mathsf{c\_2Eextreal\_2Eextreal\_\_sup} \\
V0P))\ (ap\ (ap\ c\_2Eextreal\_2Eextreal\_\_add\ V1r)\ (ap\ \mathsf{c\_2Eextreal\_2Eextreal\_\_of\_\_num} \\
(ap\ \mathsf{c\_2Earithmetic\_2ENUMERAL}\ (ap\ \mathsf{c\_2Earithmetic\_2EBIT1}\ \mathsf{c\_2Earithmetic\_2EZERO}))))))))))\wedge \\
(\forall V2P \in (2^{ty\_2Eextreal\_2Eextreal}).(\forall V3n \in ty\_2Enum\_2Enum. \\
((ap\ (ap\ c\_2Elebesgue\_2Eseq\_\_sup\ V2P)\ (ap\ \mathsf{c\_2Enum\_2ESUC}\ V3n)) = \\
(ap\ (\mathsf{c\_2Emin\_2E\_40}\ ty\_2Eextreal\_2Eextreal)\ (\lambda V4r \in ty\_2Eextreal\_2Eextreal. \\
(ap\ (ap\ \mathsf{c\_2Ebool\_2E\_2F\_5C}\ (ap\ (ap\ (\mathsf{c\_2Ebool\_2EIN}\ ty\_2Eextreal\_2Eextreal) \\
V4r)\ V2P))\ (ap\ (ap\ \mathsf{c\_2Ebool\_2E\_2F\_5C}\ (ap\ (ap\ \mathsf{c\_2Eextreal\_2Eextreal\_\_lt} \\
(ap\ \mathsf{c\_2Eextreal\_2Eextreal\_\_sup}\ V2P))\ (ap\ (ap\ c\_2Eextreal\_2Eextreal\_\_add \\
V4r)\ (ap\ c\_2Eextreal\_2ENormal\ (ap\ (ap\ c\_2Ereal\_2Epow\ (ap\ (ap\ \mathsf{c\_2Ereal\_2E\_2F} \\
(ap\ c\_2Ereal\_2Ereal\_\_of\_\_num\ (ap\ \mathsf{c\_2Earithmetic\_2ENUMERAL}\ ( \\
ap\ \mathsf{c\_2Earithmetic\_2EBIT1}\ \mathsf{c\_2Earithmetic\_2EZERO}))))\ (ap\ c\_2Ereal\_2Ereal\_\_of\_\_num \\
(ap\ \mathsf{c\_2Earithmetic\_2ENUMERAL}\ (ap\ \mathsf{c\_2Earithmetic\_2EBIT2}\ \mathsf{c\_2Earithmetic\_2EZERO})))) \\
(ap\ \mathsf{c\_2Enum\_2ESUC}\ V3n))))))\ (ap\ (ap\ \mathsf{c\_2Ebool\_2E\_2F\_5C}\ (ap\ (ap\ \mathsf{c\_2Eextreal\_2Eextreal\_\_lt} \\
(ap\ (ap\ c\_2Elebesgue\_2Eseq\_\_sup\ V2P)\ V3n))\ V4r))\ (ap\ (ap\ \mathsf{c\_2Eextreal\_2Eextreal\_\_lt} \\
V4r)\ (ap\ \mathsf{c\_2Eextreal\_2Eextreal\_\_sup}\ V2P)))))))))))
\end{gathered}
\tag{28}
$$

**Theorem 1**

$$
\begin{gathered}
((\forall V0P \in (2^{ty\_2Eextreal\_2Eextreal}).((ap\ (ap\ \mathit{c\_2Elebesgue\_2Eseq\_\_sup} \\
V0P)\ \mathsf{c\_2Enum\_2E0}) = (ap\ (\mathsf{c\_2Emin\_2E\_40}\ \mathit{ty\_2Eextreal\_2Eextreal}) \\
(\lambda V1r \in \mathit{ty\_2Eextreal\_2Eextreal}.(ap\ (ap\ \mathsf{c\_2Ebool\_2E\_2F\_5C} \\
(ap\ (ap\ (\mathsf{c\_2Ebool\_2EIN}\ \mathit{ty\_2Eextreal\_2Eextreal})\ V1r)\ V0P))\ (ap \\
(ap\ \mathsf{c\_2Eextreal\_2Eextreal\_\_lt}\ (ap\ \mathsf{c\_2Eextreal\_2Eextreal\_\_sup} \\
V0P))\ (ap\ (ap\ \mathit{c\_2Eextreal\_2Eextreal\_\_add}\ V1r)\ (ap\ \mathsf{c\_2Eextreal\_2Eextreal\_\_of\_\_num} \\
(ap\ \mathsf{c\_2Earithmetic\_2ENUMERAL}\ (ap\ \mathsf{c\_2Earithmetic\_2EBIT1}\ \mathsf{c\_2Earithmetic\_2EZERO}))))))))))\wedge \\
((\forall V2P \in (2^{ty\_2Eextreal\_2Eextreal}).(\forall V3n \in \mathit{ty\_2Enum\_2Enum}. \\
((ap\ (ap\ \mathit{c\_2Elebesgue\_2Eseq\_\_sup}\ V2P)\ (ap\ \mathsf{c\_2Earithmetic\_2ENUMERAL} \\
(ap\ \mathsf{c\_2Earithmetic\_2EBIT1}\ V3n))) = (ap\ (\mathsf{c\_2Emin\_2E\_40}\ \mathit{ty\_2Eextreal\_2Eextreal}) \\
(\lambda V4r \in \mathit{ty\_2Eextreal\_2Eextreal}.(ap\ (ap\ \mathsf{c\_2Ebool\_2E\_2F\_5C} \\
(ap\ (ap\ (\mathsf{c\_2Ebool\_2EIN}\ \mathit{ty\_2Eextreal\_2Eextreal})\ V4r)\ V2P))\ (ap \\
(ap\ \mathsf{c\_2Ebool\_2E\_2F\_5C}\ (ap\ (ap\ \mathsf{c\_2Eextreal\_2Eextreal\_\_lt}\ (ap\ \mathsf{c\_2Eextreal\_2Eextreal\_\_sup} \\
V2P))\ (ap\ (ap\ \mathit{c\_2Eextreal\_2Eextreal\_\_add}\ V4r)\ (ap\ \mathit{c\_2Eextreal\_2ENormal} \\
(ap\ (ap\ \mathit{c\_2Ereal\_2Epow}\ (ap\ (ap\ \mathsf{c\_2Ereal\_2E\_2F}\ (ap\ \mathit{c\_2Ereal\_2Ereal\_\_of\_\_num} \\
(ap\ \mathsf{c\_2Earithmetic\_2ENUMERAL}\ (ap\ \mathsf{c\_2Earithmetic\_2EBIT1}\ \mathsf{c\_2Earithmetic\_2EZERO})))) \\
(ap\ \mathit{c\_2Ereal\_2Ereal\_\_of\_\_num}\ (ap\ \mathsf{c\_2Earithmetic\_2ENUMERAL}\ ( \\
ap\ \mathsf{c\_2Earithmetic\_2EBIT2}\ \mathsf{c\_2Earithmetic\_2EZERO})))))\ (ap\ \mathsf{c\_2Earithmetic\_2ENUMERAL} \\
(ap\ \mathsf{c\_2Earithmetic\_2EBIT1}\ V3n)))))))\ (ap\ (ap\ \mathsf{c\_2Ebool\_2E\_2F\_5C} \\
(ap\ (ap\ \mathsf{c\_2Eextreal\_2Eextreal\_\_lt}\ (ap\ (ap\ \mathit{c\_2Elebesgue\_2Eseq\_\_sup} \\
V2P)\ (ap\ (ap\ \mathit{c\_2Earithmetic\_2E\_2D}\ (ap\ \mathsf{c\_2Earithmetic\_2ENUMERAL} \\
(ap\ \mathsf{c\_2Earithmetic\_2EBIT1}\ V3n)))\ (ap\ \mathsf{c\_2Earithmetic\_2ENUMERAL} \\
(ap\ \mathsf{c\_2Earithmetic\_2EBIT1}\ \mathsf{c\_2Earithmetic\_2EZERO})))))\ V4r)) \\
(ap\ (ap\ \mathsf{c\_2Eextreal\_2Eextreal\_\_lt}\ V4r)\ (ap\ \mathsf{c\_2Eextreal\_2Eextreal\_\_sup} \\
V2P))))))))))\wedge(\forall V5P \in (2^{ty\_2Eextreal\_2Eextreal}).(\forall V6n \in \\
\mathit{ty\_2Enum\_2Enum}.((ap\ (ap\ \mathit{c\_2Elebesgue\_2Eseq\_\_sup}\ V5P)\ (ap\ \mathsf{c\_2Earithmetic\_2ENUMERAL} \\
(ap\ \mathsf{c\_2Earithmetic\_2EBIT2}\ V6n))) = (ap\ (\mathsf{c\_2Emin\_2E\_40}\ \mathit{ty\_2Eextreal\_2Eextreal}) \\
(\lambda V7r \in \mathit{ty\_2Eextreal\_2Eextreal}.(ap\ (ap\ \mathsf{c\_2Ebool\_2E\_2F\_5C} \\
(ap\ (ap\ (\mathsf{c\_2Ebool\_2EIN}\ \mathit{ty\_2Eextreal\_2Eextreal})\ V7r)\ V5P))\ (ap \\
(ap\ \mathsf{c\_2Ebool\_2E\_2F\_5C}\ (ap\ (ap\ \mathsf{c\_2Eextreal\_2Eextreal\_\_lt}\ (ap\ \mathsf{c\_2Eextreal\_2Eextreal\_\_sup} \\
V5P))\ (ap\ (ap\ \mathit{c\_2Eextreal\_2Eextreal\_\_add}\ V7r)\ (ap\ \mathit{c\_2Eextreal\_2ENormal} \\
(ap\ (ap\ \mathit{c\_2Ereal\_2Epow}\ (ap\ (ap\ \mathsf{c\_2Ereal\_2E\_2F}\ (ap\ \mathit{c\_2Ereal\_2Ereal\_\_of\_\_num} \\
(ap\ \mathsf{c\_2Earithmetic\_2ENUMERAL}\ (ap\ \mathsf{c\_2Earithmetic\_2EBIT1}\ \mathsf{c\_2Earithmetic\_2EZERO})))) \\
(ap\ \mathit{c\_2Ereal\_2Ereal\_\_of\_\_num}\ (ap\ \mathsf{c\_2Earithmetic\_2ENUMERAL}\ ( \\
ap\ \mathsf{c\_2Earithmetic\_2EBIT2}\ \mathsf{c\_2Earithmetic\_2EZERO})))))\ (ap\ \mathsf{c\_2Earithmetic\_2ENUMERAL} \\
(ap\ \mathsf{c\_2Earithmetic\_2EBIT2}\ V6n)))))))\ (ap\ (ap\ \mathsf{c\_2Ebool\_2E\_2F\_5C} \\
(ap\ (ap\ \mathsf{c\_2Eextreal\_2Eextreal\_\_lt}\ (ap\ (ap\ \mathit{c\_2Elebesgue\_2Eseq\_\_sup} \\
V5P)\ (ap\ \mathsf{c\_2Earithmetic\_2ENUMERAL}\ (ap\ \mathsf{c\_2Earithmetic\_2EBIT1} \\
V6n))))\ V7r))\ (ap\ (ap\ \mathsf{c\_2Eextreal\_2Eextreal\_\_lt}\ V7r)\ (ap\ \mathsf{c\_2Eextreal\_2Eextreal\_\_sup} \\
V5P))))))))))))
\end{gathered}
$$