

# t45\_integral

(TMJ1etXsJMpZWHt7gyMsEneJx5KEGUccjuS)

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Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v2\_measure5 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_numbers : \iota$  be given. Let  $m1\_integral : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_integral : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_seq\_2 : \iota \Rightarrow o$  be given. Let  $k2\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_xreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_integral : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $k13\_integral : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_seq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k14\_integral : \iota \Rightarrow \iota$  be given. Let  $k4\_integral : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $k4\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k2\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $m2\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_finseq\_1 : \iota \Rightarrow o$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_card\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_finset\_1 : \iota \Rightarrow o$  be given. Let  $v1\_card\_1 : \iota \Rightarrow o$  be given. Let  $v1\_rcomp\_1 : \iota \Rightarrow o$  be given. Let  $v5\_valued\_0 : \iota \Rightarrow o$  be given. Let  $v3\_ordinal1 : \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0.(v1\_xboole\_0 X0) \Rightarrow (X0 = k1\_xboole\_0) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v1\_xboole\_0 X0) \wedge ((v2\_measure5 X0) \wedge (m1\_subset\_1 \\ & X0 (k1\_zfmisc\_1 k1\_numbers)))) \Rightarrow (\forall X1.(m1\_integral X1 X0) \Rightarrow \\ & (\forall X2.(m1\_integral X2 X0) \Rightarrow ((r1\_integral X1 X2) \Rightarrow (k13\_integral \\ & X0 X1 X2 (k3\_finseq\_1 X1) = k3\_finseq\_1 X2)))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v1\_xboole\_0 X0) \wedge ((v2\_measure5 X0) \wedge (m1\_subset\_1 \\ & X0 (k1\_zfmisc\_1 k1\_numbers)))) \Rightarrow (\forall X1.(m1\_integral X1 X0) \Rightarrow \\ & (\forall X2.((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 X0 k1\_numbers) \wedge \\ & (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k1\_numbers)))))) \Rightarrow \\ & (k1\_seq\_1 (k14\_integral (k4\_integral X0 X2 X1)) (k3\_finseq\_1 X1) = \\ & k6\_integral X0 X2 X1))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned}
& \forall X0.(m2\_subset\_1 X0 k1\_numbers k5\_numbers) \Rightarrow (\forall X1. \\
& ((\neg v1\_xboole\_0 X1) \wedge ((v2\_measure5 X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 \\
& \quad k1\_numbers)))) \Rightarrow (\forall X2.(m1\_integral X2 X1) \Rightarrow (\forall X3. \\
& \quad (m1\_integral X3 X1) \Rightarrow (\forall X4.((v1\_funct\_1 X4) \wedge ((v1\_funct\_2 \\
& \quad X4 X1 k1\_numbers) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X1 \\
& \quad k1\_numbers)))))) \Rightarrow (((r1\_integral X2 X3) \wedge ((X0 \in k4\_finseq\_1 X2) \wedge \\
& \quad (v1\_seq\_2 (k2\_partfun1 X1 k1\_numbers X4 X1)))) \Rightarrow (r1\_xreal\_0 ( \\
& \quad k1\_seq\_1 (k14\_integral (k4\_integral X1 X4 X3)) (k13\_integral X1 \\
& \quad X2 X3 X0)) (k1\_seq\_1 (k14\_integral (k4\_integral X1 X4 X2)) X0))))))
\end{aligned} \tag{4}$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0) \Rightarrow ((X0 = k6\_numbers) \vee (X0 \in k2\_finseq\_1 X0)) \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.(m2\_finseq\_1 X1 X0) \Leftrightarrow (m1\_finseq\_1 X1 X0) \tag{6}$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \tag{7}$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finseq\_1 X0))) \Rightarrow \\
(k4\_finseq\_1 X0 = k9\_xtuple\_0 X0) \tag{8}$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finseq\_1 X0))) \Rightarrow \\
(k3\_finseq\_1 X0 = k1\_card\_1 X0) \tag{9}$$

Assume the following.

$$\forall X0.\exists X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)) \wedge (v1\_xboole\_0 X1) \tag{10}$$

Assume the following.

$$\forall X0.(v1\_finset\_1 X0) \Rightarrow ((v1\_finset\_1 (k1\_card\_1 X0)) \wedge ( \\
v1\_card\_1 (k1\_card\_1 X0))) \tag{11}$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow ((\neg v1\_xboole\_0 (k1\_card\_1 X0)) \wedge \\
(v1\_card\_1 (k1\_card\_1 X0))) \tag{12}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v1\_xboole\_0 X0) \wedge ((v1\_rcomp\_1 X0) \wedge (m1\_subset\_1 \\ & X0 (k1\_zfmisc\_1 k1\_numbers)))) \Rightarrow (\forall X1.(m1\_integral X1 X0) \Rightarrow \\ & ((\neg v1\_xboole\_0 X1) \wedge ((v5\_valued\_0 X1) \wedge (m2\_finseq\_1 X1 k1\_numbers)))) \end{aligned} \quad (13)$$

Assume the following.

$$\forall X0. \forall X1.(m1\_finseq\_1 X1 X0) \Rightarrow ((v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1) \wedge (v1\_finseq\_1 X1)) \quad (14)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finseq\_1 X0))) \Rightarrow (m2\_subset\_1 (k3\_finseq\_1 X0) k1\_numbers k5\_numbers) \quad (15)$$

Assume the following.

$$\forall X0.v1\_card\_1 (k1\_card\_1 X0) \quad (16)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finseq\_1 X0))) \Rightarrow \\ & (\forall X1.(m2\_subset\_1 X1 k1\_numbers k5\_numbers) \Rightarrow ((X1 = k3\_finseq\_1 \\ & X0) \Leftrightarrow (k2\_finseq\_1 X1 = k9\_xtuple\_0 X0))) \end{aligned} \quad (17)$$

Assume the following.

$$\forall X0.((v3\_ordinal1 X0) \wedge (v1\_finset\_1 X0)) \Rightarrow (v7\_ordinal1 X0) \quad (18)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finseq\_1 X0))) \Rightarrow ((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finset\_1 X0))) \quad (19)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 (k1\_zfmisc\_1 k1\_numbers)) \Rightarrow ((v2\_measure5 X0) \Rightarrow (v1\_rcomp\_1 X0)) \quad (20)$$

Assume the following.

$$\forall X0.(v1\_card\_1 X0) \Rightarrow (v3\_ordinal1 X0) \quad (21)$$

### Theorem 1

$$\begin{aligned} & \forall X0.((\neg v1\_xboole\_0 X0) \wedge ((v2\_measure5 X0) \wedge (m1\_subset\_1 \\ & X0 (k1\_zfmisc\_1 k1\_numbers)))) \Rightarrow (\forall X1.(m1\_integral X1 X0) \Rightarrow \\ & (\forall X2.(m1\_integral X2 X0) \Rightarrow (\forall X3.((v1\_funct\_1 X3) \wedge \\ & ((v1\_funct\_2 X3 X0 k1\_numbers) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 ( \\ & k2\_zfmisc\_1 X0 k1\_numbers)))))) \Rightarrow (((r1\_integral X1 X2) \wedge (v1\_seq\_2 \\ & (k2\_partfun1 X0 k1\_numbers X3 X0))) \Rightarrow (r1\_xxreal\_0 (k6\_integral \\ & X0 X3 X2) (k6\_integral X0 X3 X1)))))) \end{aligned}$$