

## t32\_clvect\_3

(TMGXgwy2BWYw4mLM4nugatNh6NbqoHA1i3j)

October 27, 2020

Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v13\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v2\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v3\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v4\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v2\_clvect\_1 : \iota \Rightarrow o$  be given. Let  $v3\_clvect\_1 : \iota \Rightarrow o$  be given. Let  $v4\_clvect\_1 : \iota \Rightarrow o$  be given. Let  $v5\_clvect\_1 : \iota \Rightarrow o$  be given. Let  $v2\_csspace : \iota \Rightarrow o$  be given. Let  $l1\_csspace : \iota \Rightarrow o$  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  $k5\_numbers : \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_numbers : \iota$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k8\_nat\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_power : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k13\_csspace : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_normsp\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v2\_comseq\_2 : \iota \Rightarrow o$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $np\_1 : \iota$  be given. Let  $k2\_seq\_2 : \iota \Rightarrow \iota$  be given. Let  $v2\_clvect\_3 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_series\_1 : \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v3\_valued\_0 : \iota \Rightarrow o$  be given. Let  $k1\_seq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v3\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v3\_membered : \iota \Rightarrow o$  be given. Let  $l2\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l1\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l1\_clvect\_1 : \iota \Rightarrow o$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $k2\_clvect\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\ & X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v2\_clvect\_1 X0) \wedge \\ & ((v3\_clvect\_1 X0) \wedge ((v4\_clvect\_1 X0) \wedge ((v5\_clvect\_1 X0) \wedge ((v2\_csspace \\ & X0) \wedge (l1\_csspace X0)))))))))) \Rightarrow (\forall X1. (m1\_subset\_1 X1 ( \\ & u1\_struct\_0 X0)) \Rightarrow (r1\_xxreal\_0 k6\_numbers (k13\_csspace X0 X1))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1\_funct\_1 X0) \wedge ((v1\_funct\_2 X0 k5\_numbers k1\_numbers) \wedge \\
& (m1\_subset\_1 X0 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k1\_numbers)))))) \Rightarrow \\
& (\forall X1.((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 k5\_numbers k1\_numbers) \wedge \\
& (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k1\_numbers)))))) \Rightarrow \\
& (((\forall X2.(m2\_subset\_1 X2 k1\_numbers k5\_numbers) \Rightarrow ((r1\_xreal\_0 \\
& k6\_numbers (k3\_funct\_2 k5\_numbers k1\_numbers X0 X2)) \wedge (k3\_funct\_2 \\
& k5\_numbers k1\_numbers X1 X2 = k2\_power X2 (k3\_funct\_2 k5\_numbers \\
& k1\_numbers X0 X2)))) \wedge (v2\_comseq\_2 X1)) \Rightarrow ((r1\_xreal\_0 np\_1 ( \\
& k2\_seq\_2 X1)) \vee (v1\_series\_1 X0)))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. ((\neg v1\_xboole\_0 X0) \wedge ((\neg v1\_xboole\_0 X1) \wedge \\
& (m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)))) \Rightarrow (\forall X2.(m2\_subset\_1 \\
& X2 X0 X1) \Leftrightarrow (m1\_subset\_1 X2 X1))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. (((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 \\
& X1 k5\_numbers X0) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers \\
& X0)))))) \wedge (v7\_ordinal1 X2)) \Rightarrow (k8\_nat\_1 X0 X1 X2 = k1\_funct\_1 X1 X2)
\end{aligned} \tag{4}$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1\_xboole\_0 X0) \wedge \\
& (((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 X0 X1) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 X0 X1)))))) \wedge (m1\_subset\_1 X3 X0))) \Rightarrow (k3\_funct\_2 X0 \\
& X1 X2 X3 = k1\_funct\_1 X2 X3)
\end{aligned} \tag{6}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. ((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v3\_valued\_0 \\
& X0))) \Rightarrow (k1\_seq\_1 X0 X1 = k1\_funct\_1 X0 X1)
\end{aligned} \tag{7}$$

Assume the following.

$$(\neg v1\_xboole\_0 k4\_ordinal1) \wedge (v3\_ordinal1 k4\_ordinal1) \tag{8}$$

Assume the following.

$$v3\_membered k1\_numbers \tag{9}$$

Assume the following.

$$\neg v1\_xboole\_0 k1\_numbers \tag{10}$$

Assume the following.

$$\forall X0.(l2\_algstr\_0 X0) \Rightarrow ((l2\_struct\_0 X0) \wedge (l1\_algstr\_0 X0)) \quad (11)$$

Assume the following.

$$\forall X0.(l1\_csspace X0) \Rightarrow (l1\_clvect\_1 X0) \quad (12)$$

Assume the following.

$$\forall X0.(l1\_clvect\_1 X0) \Rightarrow (l2\_algstr\_0 X0) \quad (13)$$

Assume the following.

$$\forall X0.(l1\_algstr\_0 X0) \Rightarrow (l1\_struct\_0 X0) \quad (14)$$

Assume the following.

$$m1\_subset\_1 k5\_numbers (k1\_zfmisc\_1 k1\_numbers) \quad (15)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge \\ & ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v2\_clvect\_1 \\ & X0) \wedge ((v3\_clvect\_1 X0) \wedge ((v4\_clvect\_1 X0) \wedge ((v5\_clvect\_1 X0) \wedge \\ & ((v2\_csspace X0) \wedge (l1\_csspace X0)))))))))) \wedge ((v1\_funct\_1 X1) \wedge \\ & ((v1\_funct\_2 X1 k5\_numbers (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 X1 \\ & (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers (u1\_struct\_0 X0)))))) \Rightarrow \\ & ((v1\_funct\_1 (k2\_clvect\_2 X0 X1)) \wedge ((v1\_funct\_2 (k2\_clvect\_2 \\ & X0 X1) k5\_numbers k1\_numbers) \wedge (m1\_subset\_1 (k2\_clvect\_2 X0 X1) \\ & (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k1\_numbers)))))) \end{aligned} \quad (16)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2\_struct\_0 X0) \wedge (l1\_struct\_0 \\ & X0)) \wedge (((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 k5\_numbers (u1\_struct\_0 \\ & X0)) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers (u1\_struct\_0 \\ & X0)))))) \wedge (m1\_subset\_1 X2 k5\_numbers))) \Rightarrow (m1\_subset\_1 (k1\_normsp\_1 \\ & X0 X1 X2) (u1\_struct\_0 X0)) \end{aligned} \quad (17)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\ & X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v2\_clvect\_1 X0) \wedge \\ & ((v3\_clvect\_1 X0) \wedge ((v4\_clvect\_1 X0) \wedge ((v5\_clvect\_1 X0) \wedge ((v2\_csspace \\ & X0) \wedge (l1\_csspace X0)))))))))) \Rightarrow (\forall X1. ((v1\_funct\_1 X1) \wedge \\ & ((v1\_funct\_2 X1 k5\_numbers (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 X1 \\ & (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers (u1\_struct\_0 X0)))))) \Rightarrow \\ & ((v2\_clvect\_3 X1 X0) \Leftrightarrow (v1\_series\_1 (k2\_clvect\_2 X0 X1))) \end{aligned} \quad (18)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\
& X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v2\_clvect\_1 X0) \wedge \\
& ((v3\_clvect\_1 X0) \wedge ((v4\_clvect\_1 X0) \wedge ((v5\_clvect\_1 X0) \wedge ((v2\_csspace \\
& X0) \wedge (l1\_csspace X0)))))))))) \Rightarrow (\forall X1.((v1\_funct\_1 X1) \wedge \\
& ((v1\_funct\_2 X1 k5\_numbers (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 X1 \\
& (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers (u1\_struct\_0 X0)))))) \Rightarrow \\
& (\forall X2.((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 k5\_numbers k1\_numbers) \wedge \\
& (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k1\_numbers)))))) \Rightarrow \\
& ((X2 = k2\_clvect\_2 X0 X1) \Leftrightarrow (\forall X3.(m2\_subset\_1 X3 k1\_numbers \\
& k5\_numbers) \Rightarrow (k1\_seq\_1 X2 X3 = k13\_csspace X0 (k1\_normsp\_1 X0 X1 \\
& X3))))))
\end{aligned} \tag{19}$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k4\_ordinal1) \Rightarrow (v7\_ordinal1 X0) \tag{20}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))) \Rightarrow (v1\_relat\_1 X2) \tag{21}$$

Assume the following.

$$\forall X0.\forall X1.(v3\_membered X1) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))) \Rightarrow (v3\_valued\_0 X2)) \tag{22}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\
& X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v2\_clvect\_1 X0) \wedge \\
& ((v3\_clvect\_1 X0) \wedge ((v4\_clvect\_1 X0) \wedge ((v5\_clvect\_1 X0) \wedge ((v2\_csspace \\
& X0) \wedge (l1\_csspace X0)))))))))) \Rightarrow (\forall X1.((v1\_funct\_1 X1) \wedge \\
& ((v1\_funct\_2 X1 k5\_numbers (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 X1 \\
& (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers (u1\_struct\_0 X0)))))) \Rightarrow \\
& (\forall X2.((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 k5\_numbers k1\_numbers) \wedge \\
& (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k1\_numbers)))))) \Rightarrow \\
& (((\forall X3.(m2\_subset\_1 X3 k1\_numbers k5\_numbers) \Rightarrow (k8\_nat\_1 \\
& k1\_numbers X2 X3 = k2\_power X3 (k13\_csspace X0 (k1\_normsp\_1 X0 X1 \\
& X3)))) \wedge (v2\_comseq\_2 X2)) \Rightarrow ((r1\_xxreal\_0 np\_1 (k2\_seq\_2 X2)) \vee \\
& (v2\_clvect\_3 X1 X0))))))
\end{aligned}$$