1.1

Friday, March 19, 2021 5:49 PM

1a $(3,1,2) \stackrel{?}{=} t(6,4,2)$

$3 = 6t \rightarrow t = 2$

$1 = 4t \rightarrow t = \frac{1}{4}$ not equal

$2 = 2t \rightarrow t = 1$

1b. $(-3,1,7)$

$(9,-3,-21)$

$-3 = 9t = t = -\frac{1}{3}$

$1 = -3t = t = -\frac{1}{3}$ equal

$7 = -21 = t = -\frac{1}{3}$

1c.

$(5,-6,7)$, $(-5,6,-7)$

$5 = -5t$ $-6t = 6$ $7t = -7$

$t = -1$ $t = -1$ $t = -1$

true

d

$(2,0,-5) = (5,0,-2)$

not equal

2a

$(-5,-7,1)-(3,-2,4)=(-8,-5,-3)$

$(-5,-7,1)+t(-8,-5,-3)$

2b. $(3,-6,7)=A$

$(-2,0,-4)=B$

$(5,-9,-2)=C$

$(3,-6,7)-(-2,0,-4)=s(5,-6,11)$

$(3,-6,7)-(5,-9,-2)=t(-2,3,9)$

$x=(3,-6,7)+s(5,-6,11)+t(-2,3,9)$

2c.

$(3,9,2)$

$(3,1,-8)$

$(3,7,2) \sim (3,7,-8) = t(0,0,10)$

$(3,7,2) - t(0,0,10) = x$

3a.

$(2,-5,-1)$

$(0,4,6)$

$(-3,7,1)$

$(2,-5,-1) - (0,4,6) = s(2,-9,-7)$

$(2,-5,-1) - (-3,7,1) = t(5,-12,-2)$

$X = (2,-5,-1) \sim s(2,-9,-7) - t(5,-12,-2)$

3c

$(-8,2,0)$

$(1,3,0)$

$(6,-5,0)$

$(-8,2,0) - (1,3,0) = s(-9,-1,0)$

$(-8,2,0) - (6,-5,0) = t(-14,7,0)$

$x = (-8,2,0) - s(-9,-1,0) - t(-14,7,0)$

3d.

$(1,1,1), (5,5,5), (-6,4,2)$

$(1,1,1) - (5,5,5) = s(-4,-4,-4)$

$(1,1,1) - (-6,4,2) = t(7,-3,-1)$

$(1,1,1) + s(-4,-4,-4) + t(7,-3,-1)$

6.

$(a,b) \cup (c,d)$

$T_1 = x$

$\left(\frac{(a+c)}{2}, \frac{(b+d)}{2}\right) \rightsquigarrow T_2 = x$

$$\left(\frac{(x_1+x_2)}{2}, \frac{(y_1+y_2)}{2}\right)$$