◆ **Thm F1**

$0 \cdot a = 0$

[05-12-04B-T7]

F1

Work the following using only theorems up to F1, axioms, and definitions.

You must show every step. Write the justification, but only for those steps that use theorems.

■ **A. Solve the following for *x*. Use the theorem F1 wherever you can.**

[1] $x = 2 \cdot 0$

[2] $3 \cdot x = 5 \cdot 0$

[3] $3\,x = 0\,(x + 2)$

[4] $5\,x = 6 + 0\,(x + \frac{115}{117})$

[5] $x + 3 = 3 + 0\,(\frac{1}{7} + \frac{117}{119})$

[6] $3\,x + 3 = 3 + 3\,(0 + 5)$

[7] $\frac{3}{\sqrt{3}}\,(3\,x + 2) + 5 = \frac{3}{\sqrt{3}}\,(x + 2) + 5 + 0\,(3 + 12)$

[8] $\frac{1}{\sqrt{3}}\,x + 0 \cdot \sqrt{2} = \frac{1}{\sqrt{3}}$

[9] $2\,(7\,x - 3) = 2\,x + 0\,(x + 3)$

[10] Prove theorem F1.

■ A. Answers

[1] $x = 0$

[2] $x = 0$

[3] $x = 0$

[4] $x = \frac{6}{5}$

[5] $x = 0$

[6] $x = 0$

[7] $x = 0$

[8] $x = 1$

[9] $x = \frac{1}{2}$