Handwritten HW 16

Page 196

17. Show that if A is 2×2 , then Theorem 8 gives the same formula for A^{-1} as that given by Theorem 4 in Section 2.2.

Solution:

30. Let R be the triangle with vertices at (x_1, y_1) , (x_2, y_2) , and (x_3, y_3) . Show that

$$\{\text{area of triangle}\} = \frac{1}{2} \det \begin{bmatrix} x_1 & y_1 & 1\\ x_2 & y_2 & 1\\ x_3 & y_3 & 1 \end{bmatrix}$$

[*Hint:* Translate R to the origin by subtracting one of the vertices, and use Exercise 29.]

Solution:

Exercise 29 says, "Find a formula for the area of the triangle whose vertices are $0, v_1, and v_2$ in \mathbb{R}^2 ."