Homework Problem H24.B

Given: The frame shown is made up of the curved member AB and the L-shaped member BD, with the two members joined by a pin joint at B. A force F acts to the left at point D on the frame. Consider all surfaces to be smooth.

Find: Determine the reactions on the frame at support points A and C. Also, what is the contact force member AB on member BD?

For this problem, use the following parameters: $R = 2$ ft, $b = 1$ ft and $F = 1000$ lb.