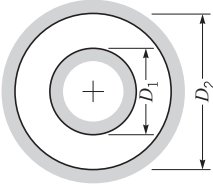
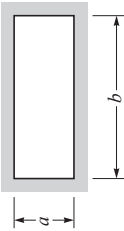


TABLE 8.3
Friction Factors for Laminar Flow in Noncircular Ducts (Data from Ref. 18)

Shape	Parameter	$C = f \text{Re}_h$
I. Concentric Annulus $D_h = D_2 - D_1$		
	D_1/D_2	71.8
	0.0001	80.1
	0.01	89.4
	0.1	95.6
	0.6	96.0
	1.00	
II. Rectangle $D_h = \frac{2ab}{a + b}$		
	a/b	96.0
	0	89.9
	0.05	84.7
	0.10	72.9
	0.25	62.2
	0.50	57.9
	0.75	56.9
	1.00	