**PROBLEM 9.38**

The polar moments of inertia of the shaded area with respect to Points A, B, and D are, respectively, \( J_A = 2880 \text{ in}^4 \), \( J_B = 6720 \text{ in}^4 \), and \( J_D = 4560 \text{ in}^4 \). Determine the shaded area, its centroidal moment of inertia \( \bar{J}_c \), and the distance \( d \) from C to D.

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**PROBLEM 9.50**

Two L6 × 4 × \( \frac{1}{2} \)-in. angles are welded together to form the section shown. Determine the moments of inertia and the radii of gyration of the combined section with respect to the centroidal \( x \) and \( y \) axes.

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**PROBLEM 9.75**

Using the parallel-axis theorem, determine the product of inertia of the area shown with respect to the centroidal \( x \) and \( y \) axes.

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**PROBLEM 9.82**

Determine the moments of inertia and the product of inertia of the area of Problem 9.75 with respect to new centroidal axes obtained by rotating the \( x \) and \( y \) axes 45° clockwise.