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$$AE = AC = r$$

$$AB = r \cos \theta$$

$$BC = r - AB = r(1 - \cos \theta)$$

$$DC = r \tan \theta$$

$$\text{Arc length } EC = r \theta \text{ (here } \theta \text{ is in radians)}$$

$$AD = r / \cos \theta$$

$$\text{Area of triangle } ABE = \frac{1}{2} AB \times EB = \frac{1}{2} r^2 \cos \theta \sin \theta$$

$$\text{Area of triangle } ACD = \frac{1}{2} r \times DC = \frac{1}{2} r^2 \tan \theta$$

$$\text{Area sector } ACE = \frac{1}{2} r \times \text{arc length } EC = \frac{1}{2} r^2 \theta$$

$$\text{Area formed by } EBC = \text{area sector } ACE - \text{area triangle } ABE = \frac{1}{2} r^2 (\theta - \cos \theta \sin \theta)$$

$$\text{Area } CDE = \text{area triangle } ACD - \text{area triangle } ABE = \frac{1}{2} r^2 (\tan \theta - \cos \theta \sin \theta)$$

$$\text{Area formed by } EDC = \text{area triangle } ACD - \text{area sector } ACE = \frac{1}{2} r^2 (\tan \theta - \theta)$$