Calculus I Basic trig integrals, part 2

Todor Milev

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Find the general indefinite integral. $\int \frac{\cos \theta}{\sin^2 \theta} \mathrm{d}\theta$

$$\int \frac{\cos \theta}{\sin^2 \theta} d\theta$$

$$\int \frac{\cos \theta}{\sin^2 \theta} d\theta = \int \left(\frac{1}{\sin \theta}\right) \left(\frac{\cos \theta}{\sin \theta}\right) d\theta$$

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$$= \int ? ? d\theta$$

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$$= \int \csc \theta ? \qquad d\theta$$

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$$\int \frac{\cos \theta}{\sin^2 \theta} d\theta = \int \left(\frac{1}{\sin \theta}\right) \left(\frac{\cos \theta}{\sin \theta}\right) d\theta$$
$$= \int \csc \theta \cot \theta d\theta$$

$$\int \frac{\cos \theta}{\sin^2 \theta} d\theta = \int \left(\frac{1}{\sin \theta}\right) \left(\frac{\cos \theta}{\sin \theta}\right) d\theta$$
$$= \int \csc \theta \cot \theta d\theta$$
$$= ?$$

$$\int \frac{\cos \theta}{\sin^2 \theta} d\theta = \int \left(\frac{1}{\sin \theta}\right) \left(\frac{\cos \theta}{\sin \theta}\right) d\theta$$
$$= \int \csc \theta \cot \theta d\theta$$
$$= -\csc \theta$$

$$\int \frac{\cos \theta}{\sin^2 \theta} d\theta = \int \left(\frac{1}{\sin \theta}\right) \left(\frac{\cos \theta}{\sin \theta}\right) d\theta$$
$$= \int \csc \theta \cot \theta d\theta$$
$$= -\csc \theta + C$$