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Problems and Answers. **Answers**

Solve the problem #1
Calculate the following sum:

$$\cos^2\left(\frac{\pi}{3}\right) + \sin^2\left(\frac{7\pi}{6}\right) + \operatorname{tg}^2\left(\frac{8\pi}{3}\right) + \operatorname{ctg}^2\left(\frac{2\pi}{3}\right) = \_\_\_$$

Solve the problem #2
Calculate the following sum:

$$\cos^2\left(\frac{8\pi}{3}\right) + \sin^2\left(\frac{\pi}{6}\right) + \operatorname{tg}^2\left(\frac{\pi}{3}\right) + \operatorname{ctg}^2\left(\frac{7\pi}{6}\right) = \_\_\_$$

Solve the problem #3
Calculate the following sum:

$$\cos^2\left(\frac{8\pi}{3}\right) + \sin^2\left(\frac{2\pi}{3}\right) + \operatorname{tg}^2\left(\frac{7\pi}{6}\right) + \operatorname{ctg}^2\left(\frac{5\pi}{3}\right) = \_\_\_$$

Solve the problem #4
Calculate the following sum:

$$\cos^2\left(\frac{7\pi}{6}\right) + \sin^2\left(\frac{7\pi}{3}\right) + \operatorname{tg}^2\left(\frac{9\pi}{4}\right) + \operatorname{ctg}^2\left(\frac{\pi}{4}\right) = \_\_\_$$

Solve the problem #5
Calculate the following sum:

$$\cos^2\left(\frac{9\pi}{4}\right) + \sin^2\left(\frac{2\pi}{3}\right) + \operatorname{tg}^2\left(\frac{7\pi}{6}\right) + \operatorname{ctg}^2\left(\frac{7\pi}{3}\right) = \_\_\_$$

Solve the problem #6
Calculate the following sum:

$$\cos^2\left(\frac{\pi}{6}\right) + \sin^2\left(\frac{5\pi}{4}\right) + \operatorname{tg}^2\left(\frac{5\pi}{3}\right) + \operatorname{ctg}^2\left(\frac{\pi}{6}\right) = \_\_\_$$

Solve the problem #7
Calculate the following sum:

$$\cos^2\left(\frac{\pi}{4}\right) + \sin^2\left(\frac{7\pi}{6}\right) + \operatorname{tg}^2\left(\frac{5\pi}{3}\right) + \operatorname{ctg}^2\left(\frac{8\pi}{3}\right) = \_\_\_$$

Solve the problem #8
Calculate the following sum:

$$\cos^2\left(\frac{5\pi}{6}\right) + \sin^2\left(\frac{5\pi}{3}\right) + \operatorname{tg}^2\left(\frac{8\pi}{3}\right) + \operatorname{ctg}^2\left(\frac{\pi}{4}\right) = \_\_\_$$

Problems and Answers. **Answer keys** **Answers**

Solve the problem #1
Calculate the following sum:

$$\cos^2\left(\frac{\pi}{3}\right) + \sin^2\left(\frac{7\pi}{6}\right) + tg^2\left(\frac{8\pi}{3}\right) + ctg^2\left(\frac{2\pi}{3}\right) = \underline{\quad 23/6 \quad}$$

Solve the problem #2
Calculate the following sum:

$$\cos^2\left(\frac{8\pi}{3}\right) + \sin^2\left(\frac{\pi}{6}\right) + tg^2\left(\frac{\pi}{3}\right) + ctg^2\left(\frac{7\pi}{6}\right) = \underline{\quad 13/2 \quad}$$

Solve the problem #3
Calculate the following sum:

$$\cos^2\left(\frac{8\pi}{3}\right) + \sin^2\left(\frac{2\pi}{3}\right) + tg^2\left(\frac{7\pi}{6}\right) + ctg^2\left(\frac{5\pi}{3}\right) = \underline{\quad 5/3 \quad}$$

Solve the problem #4
Calculate the following sum:

$$\cos^2\left(\frac{7\pi}{6}\right) + \sin^2\left(\frac{7\pi}{3}\right) + tg^2\left(\frac{9\pi}{4}\right) + ctg^2\left(\frac{\pi}{4}\right) = \underline{\quad 7/2 \quad}$$

Solve the problem #5
Calculate the following sum:

$$\cos^2\left(\frac{9\pi}{4}\right) + \sin^2\left(\frac{2\pi}{3}\right) + tg^2\left(\frac{7\pi}{6}\right) + ctg^2\left(\frac{7\pi}{3}\right) = \underline{\quad 23/12 \quad}$$

Solve the problem #6
Calculate the following sum:

$$\cos^2\left(\frac{\pi}{6}\right) + \sin^2\left(\frac{5\pi}{4}\right) + tg^2\left(\frac{5\pi}{3}\right) + ctg^2\left(\frac{\pi}{6}\right) = \underline{\quad 29/4 \quad}$$

Solve the problem #7
Calculate the following sum:

$$\cos^2\left(\frac{\pi}{4}\right) + \sin^2\left(\frac{7\pi}{6}\right) + tg^2\left(\frac{5\pi}{3}\right) + ctg^2\left(\frac{8\pi}{3}\right) = \underline{\quad 49/12 \quad}$$

Solve the problem #8
Calculate the following sum:

$$\cos^2\left(\frac{5\pi}{6}\right) + \sin^2\left(\frac{5\pi}{3}\right) + tg^2\left(\frac{8\pi}{3}\right) + ctg^2\left(\frac{\pi}{4}\right) = \underline{\quad 11/2 \quad}$$