University of Colorado

Department of Mathematics

Problem of the Month

October 2009

Prove that

$$(\cos x)^{(\cos^2 x)} > (\sin x)^{(\sin^2 x)} \qquad \text{and} \qquad (\cos x)^{(\cos^4 x)} < (\sin x)^{(\sin^4 x)}$$

when $0 < x < \pi/4$.