

1984 FI2.2

若 $\sin \theta = \frac{1}{2}$ ($0^\circ < \theta < 90^\circ$), 且 $10 \cos 2\theta = b$, 求 b 的值。

If $\sin \theta = \frac{1}{2}$ ($0^\circ < \theta < 90^\circ$), and $10 \cos 2\theta = b$, find the value of b .

1984 FI3.4

若 $\sin \theta = \frac{1}{2}$ ($90^\circ < \theta < 180^\circ$) 及 $\tan(\theta - 15^\circ) = y$, 求 y 的值。

If $\sin \theta = \frac{1}{2}$ ($90^\circ < \theta < 180^\circ$) and $\tan(\theta - 15^\circ) = y$, find the value of y .

1985 FI5.2

若 $\sin u^\circ = \frac{2}{\sqrt{8}}$ 且 $90 < u < 180$, 求 u 的值。

If $\sin u^\circ = \frac{2}{\sqrt{8}}$ and $90 < u < 180$, find the value of u .

1986 FG9.2

方程 $(\sin^2 \theta - 1)(2 \sin^2 \theta - 1) = 0$, 其中 $0^\circ \leq \theta \leq 360^\circ$, 共有 n 個根。求 n 的值。

There are exactly n values of θ satisfying the equation $(\sin^2 \theta - 1)(2 \sin^2 \theta - 1) = 0$, where $0^\circ \leq \theta \leq 360^\circ$. Find the value of n .

1987 FSI.2

若 $\sin 10^\circ = \cos b^\circ$, 其中 $270 < b < 360$, 求 b 的值。

If $\sin 10^\circ = \cos b^\circ$, where $270 < b < 360$, find the value of b .

1987 FI1.2

若 $\sin 380^\circ = \cos B^\circ$, 其中 $0 < B < 90$, 求 B 的值。

If $\sin 380^\circ = \cos B^\circ$, where $0 < B < 90$, find the value of B .

1987 FG8.3

共有 N 個 α 值可滿足方程 $\cos^3 \alpha - \cos \alpha = 0$, 其中 $0^\circ \leq \alpha \leq 360^\circ$ 。求 N 的值。

There are exactly N values of α satisfying the equation $\cos^3 \alpha - \cos \alpha = 0$, where $0^\circ \leq \alpha \leq 360^\circ$. Find the value of N .

1989 FI5.2

已知 $\sin(240^\circ) = \cos b^\circ$, 且 $90^\circ < b < 180^\circ$, 求 b 的值。

If $\sin 240^\circ = \cos b^\circ$, and $90^\circ < b < 180^\circ$, find the value of b .

1990 FI2.1

若 $0^\circ \leq \theta < 360^\circ$, θ 的方程 $3 \cos \theta + \frac{1}{\cos \theta} = 4$ 有 p 個根, 求 p 的值。

If $0^\circ \leq \theta < 360^\circ$, the equation in θ : $3 \cos \theta + \frac{1}{\cos \theta} = 4$ has p roots.

Find the value of p .

1996 FIS.2

若 $\sin(2b^\circ + 34^\circ) = \cos(6b^\circ - 16^\circ)$, 其中 $0 < b < 90$, 求 b 的值。

If $\sin(2b^\circ + 34^\circ) = \cos(6b^\circ - 16^\circ)$, where $0 < b < 90$, find the value of b .

1997 FI5.2

若 $\sin 60^\circ = \cos(360^\circ - b^\circ)$ 和 $0 < b < 90$, 求 b 的值。

If $\sin 60^\circ = \cos(360^\circ - b^\circ)$ and $0 < b < 90$, find the value of b .

1998 FI4.4

若 $\tan^2(57 + s)^\circ = 3$ 且 $0 \leq 57 + s \leq 90$, 求 s 的值。

If $\tan^2(57 + s)^\circ = 3$ and $0 \leq 57 + s \leq 90$, find the value of s .

2000 HG2

方程 $(\cos^2 \theta - 1)(2 \cos^2 \theta - 1) = 0$ 恰有 n 個根, 其中 $0^\circ < \theta < 360^\circ$ 。求 n 的值。

There are exactly n roots in the equation $(\cos^2 \theta - 1)(2 \cos^2 \theta - 1) = 0$, where $0^\circ < \theta < 360^\circ$. Find the value of n .

2001 HI5

已知 $2 - 6 \cos^2 \theta = 7 \sin \theta \cos \theta$, 求 $\tan \theta$ 的最大值。

It is known that $2 - 6 \cos^2 \theta = 7 \sin \theta \cos \theta$, find the largest value of $\tan \theta$.

2002 FG1.4

已知 $4 \cos^4 \theta + 5 \sin^2 \theta - 4 = 0$, 其中 $0^\circ < \theta < 360^\circ$ 。

若 θ 的最大值為 d , 求 d 的值。

It is given that $4 \cos^4 \theta + 5 \sin^2 \theta - 4 = 0$, where $0^\circ < \theta < 360^\circ$.

If the maximum value of θ is d , find the value of d .

2004 FI1.3

若 $\sin(c^2 - 3c + 17)^\circ = \frac{1}{\sqrt{2}}$, 其中 $0 < c^2 - 3c + 17 < 90$ 及 $c > 0$, 求 c 的值。

If $\sin(c^2 - 3c + 17)^\circ = \frac{1}{\sqrt{2}}$, where $0 < c^2 - 3c + 17 < 90$ and $c > 0$,

find the value of c .

2006 HI5

已知 $4\sec^2 \theta - \tan^2 \theta - 7\sec \theta + 1 = 0$ 及 $0^\circ \leq \theta \leq 180^\circ$ ，求 θ 的值。

Given that $4\sec^2 \theta - \tan^2 \theta - 7\sec \theta + 1 = 0$ and $0^\circ \leq \theta \leq 180^\circ$,
find the value of θ .

2008 HG5

已知 $90^\circ < \theta < 180^\circ$ 及 $\sin \theta = \frac{\sqrt{3}}{2}$ 。若 $A = \cos(180^\circ - \theta)$ ，求 A 的值。

Given that $90^\circ < \theta < 180^\circ$ and $\sin \theta = \frac{\sqrt{3}}{2}$. If $A = \cos(180^\circ - \theta)$, find the value of A .

2009 HI3

設 $16\sin^4 \theta = 5 + 16\cos^2 \theta$ 且 $0 \leq \theta \leq 90^\circ$ ，求 θ 的值。

Let $16\sin^4 \theta = 5 + 16\cos^2 \theta$ and $0 \leq \theta \leq 90^\circ$, find the value of θ .

2009 HG4

已知 $0 \leq x \leq 180^\circ$ 。若方程 $\cos 7x^\circ = \cos 5x^\circ$ 有 r 個不同的根，求 r 的值。

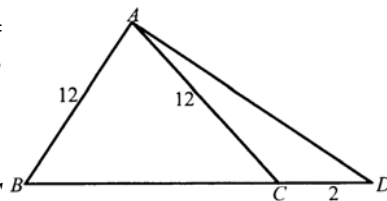
Given that $0 \leq x \leq 180^\circ$. If the equation $\cos 7x^\circ = \cos 5x^\circ$ has r distinct roots,
find the value of r .

2012 HG6

如圖， $\triangle ABC$ 為一等腰三角形，設 $AB = AC = 12$ 。若 D 是 BC 延伸線上的一點，使 $\angle DAB = 90^\circ$ 及 $CD = 2$ ，求 BC 的長。

In the figure, $\triangle ABC$ is an isosceles triangle.

Suppose $AB = AC = 12$. If D is a point on BC produced such that $\angle DAB = 90^\circ$ and $CD = 2$,
find the length of BC .

**2014 HG10**

已知 $\tan\left(\frac{90^\circ}{\tan x}\right) \times \tan(90^\circ \tan x) = 1$ 及 $1 < \tan x < 3$ 。求 $\tan x$ 的值。

Given that $\tan\left(\frac{90^\circ}{\tan x}\right) \times \tan(90^\circ \tan x) = 1$ and $1 < \tan x < 3$.

Find the value of $\tan x$.

2017 HI9

已知 $\sin x \cdot \cos x = 0$ 及 $\sin^3 x - \cos^3 x = 1$ ，其中 $90^\circ \leq x < 180^\circ$ ，求 x 的值。

Given that $\sin x \cdot \cos x = 0$ and $\sin^3 x - \cos^3 x = 1$, where $90^\circ \leq x < 180^\circ$,
find the value of x .

Answers

1984 FI2.2 5	1984 FI3.4 −1	1985 FI5.2 135	1986 FG9.2 6	1987 FSI.2 280
1987 FG7.2 3	1987 FG8.3 5	1989 FI5.2 150	1990 FI2.2 3	1996 FIS.2 9
1997 FI5.2 30	1998 FI4.4 3	2000 HG2 5	2001 HI5 4	2002 FG1.4 300°
2004 FI1.3 7	2006 HI5 60	2008 HG5 $\frac{1}{2}$	2009 HI3 60	2009 HG4 7
2012 HG6 16	2014 HG10 $\frac{3+\sqrt{5}}{2}$	2017 HI9 90°		