1984 FI2.2

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

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

1984 FI3.4

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

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

1985 FI5.2

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

If $\sin u° = \frac{2}{\sqrt{8}}$ 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 $0° \le \theta \le 360°$，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 $0° \le \theta \le 360°$. Find the value of n.

1987 FSI.2

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

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

1987 FI1.2

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

If $\sin 380° = \cos B°$, 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 $0° \le \alpha \le 360°$。求 N 的值。

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

1989 FI5.2

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

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

1990 FI2.1

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

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

Find the value of p.

1996 FIS.2

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

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

1997 FI5.2

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

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

1998 FI4.4

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

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

2000 HG2

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

There are exactly n roots in the equation $(\cos^2\theta - 1)(2\cos^2\theta - 1) = 0$, where $0° < \theta < 360°$. 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 $0° < \theta < 360°$。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 $0° < \theta < 360°$.
If the maximum value of θ is d, find the value of d.

2004 FI1.3

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

If $\sin(c^2 - 3c + 17)° = \frac{1}{\sqrt{2}}$, 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 $0° \le \theta° \le 180°$，求 θ 的值。

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

2008 HG5

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

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

2009 HI3

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

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

2009 HG4

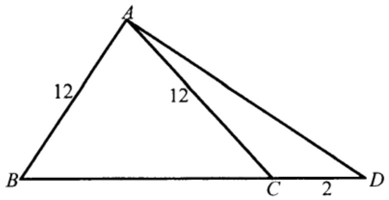
已知 $0 \le x \le 180$。若方程 $\cos 7x° = \cos 5x°$ 有 r 個不同的根，求 r 的值。

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

2012 HG6

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

In the figure, ΔABC is an isosceles triangle. Suppose $AB = AC = 12$. If D is a point on BC produced such that $\angle DAB = 90°$ and $CD = 2$, find the length of BC.



2014 HG10

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

Given that $\tan\left(\frac{90°}{\tan x}\right) \times \tan(90° \tan x) = 1$ 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 $90° \le x < 180°$，求 x 的值。

Given that $\sin x \cdot \cos x = 0$ and $\sin^3 x - \cos^3 x = 1$, where $90° \le x < 180°$,

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°		