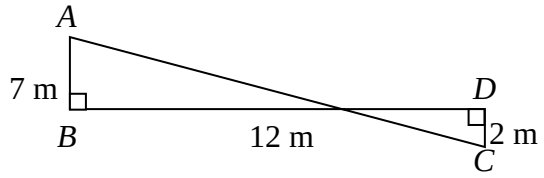
1983 FG8.1

如圖，彼得站 A 點而約翰站在 C 點，BD 的距離 12 m。問彼得和約翰之間的最短距離為何？

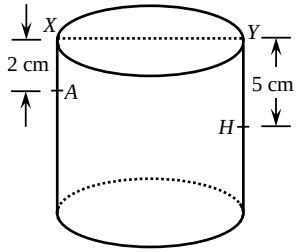
Peter is standing at *A* and John is at *C*. The distance between *B* and *D* is 12 m. What is the shortest distance between John and Peter?



1991 HG9

在圖中，*XY* 是圓柱形玻璃杯的直徑，杯底的圓周是 48 cm。杯外 *A* 點處 (在 *X* 之下 2 cm) 有一蟻，杯內 *H* 點處 (在 *Y* 之下 5 cm) 有一小滴蜜糖。若蟻行至蜜糖的最短路綫長 *x* cm，求 *x* 的值。(杯的厚度可略去不計。)

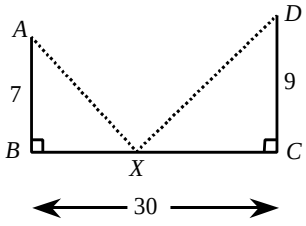
In figure 1, *XY* is a diameter of a cylindrical glass, 48 cm in base circumference. On the outside is an ant at *A*, 2 cm below *X* and on the inside is a small drop of honey at *H*, 5 cm below *Y*. If the length of the shortest path for the ant to reach the drop of honey is *x* cm, find the value of *x* . (Neglect the thickness of the glass.)



1993 HI1

在圖一中，*X* 為 *BC* 上一點。已知 $AB=7$，$CD=9$ 及 $BC=30$，求 $AX+XD$ 的最小值。

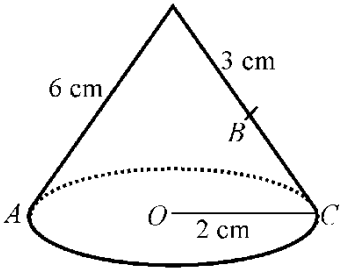
X is a point on the line segment *BC* as shown in Figure 1. If $AB = 7$, $CD = 9$ and $BC = 30$, find the minimum value of $AX + XD$.



1996 HG2

在圖中 *O* 是圓錐體底部的圓心；*A*、*B*、*C* 及 *O* 躺於同一平面上。若螞蟻在圓錐曲面上由 *A* 走到 *B*，找出由 *A* 到 *B* 的最短路綫的長度。

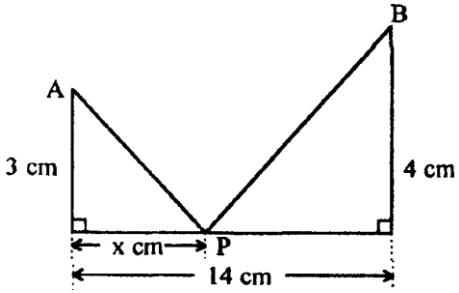
In the figure, *O* is the centre of the base circle of a cone and the points *A*, *B*, *C* and *O* lie in the same plane. An ant walks from *A* to *B* on the surface of the cone. Find the length of the shortest path from *A* to *B* .



1996 HG9

求 *x* 的值使得圖中路綫 *APB* 的長度最小。

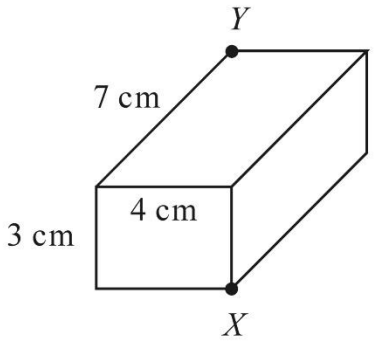
Find the value of *x* such that the length of the path *APB* in the figure is the smallest.



2006 HG9

如圖二，一長方體盒的邊長分別是 3 cm，4 cm 及 7 cm。若在盒面上從點 *X* 到點 *Y* 的最短路徑的長度是 *K* cm，求 *K* 的值。

In Figure 2, given a rectangular box with dimensions 3 cm, 4 cm, and 7 cm respectively. If the length of the shortest path on the surface of the box from point *X* to point *Y* is *K* cm, find the value of *K* .



2010 FG4.2

已知 *x* 為一實數及 $y=\sqrt{x^2-2x+2}+\sqrt{x^2-10x+34}$ 。求 *y* 的最小值。

Given that *x* is a real number and $y=\sqrt{x^2-2x+2}+\sqrt{x^2-10x+34}$.
Find the minimum value of *y* .

2015 HI9

設 *x* 實數。求 $\sqrt{x^2-4x+13}+\sqrt{x^2-14x+130}$ 的最小值。

Let *x* be a real number.

Find the minimum value of $\sqrt{x^2-4x+13}+\sqrt{x^2-14x+130}$.

2021 P1Q12

設 $f(x)=\sqrt{(x-3)^2+x^2}+\sqrt{(x-6)^2+(x+5)^2}$ ，其中 *x* 為一實數。求 f(*x*) 的最小值。Let $f(x)=\sqrt{(x-3)^2+x^2}+\sqrt{(x-6)^2+(x+5)^2}$, where *x* is a real number. Find the minimum value of f(*x*) .

Answers

1983 FG8.1 15 m	1991 HG9 25	1993 HI1 34	1996 HG2 $3\sqrt{3}$ cm	1996 HG9 6
2006 HG9 $7\sqrt{2}$	2010 FG4.2 $4\sqrt{2}$	2015 HI9 13	2021 P1Q12 10	