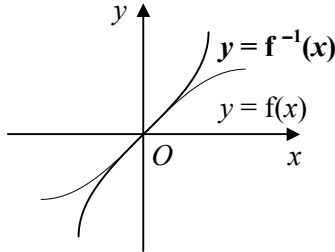


1 a  $-1 \leq f(x) \leq 1$

b  $f^{-1}(x) \equiv \arcsin x, x \in \mathbb{R}, -1 \leq x \leq 1$

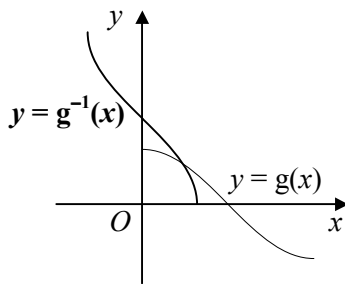
c



2 a 0    b  $\frac{\pi}{4}$     c  $-\frac{\pi}{2}$     d  $-\frac{\pi}{3}$

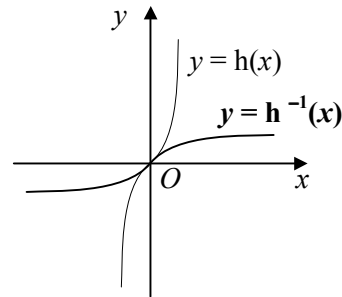
3 a  $g^{-1}(x) \equiv \arccos x, x \in \mathbb{R}, -1 \leq x \leq 1$

b



4 a  $h^{-1}(x) \equiv \arctan x, x \in \mathbb{R}$

b



5 a 0

b  $\frac{\pi}{3}$

c  $\frac{\pi}{6}$

d  $-\frac{\pi}{6}$

e  $-\frac{\pi}{4}$

f  $\pi$

g  $-\frac{\pi}{6}$

h  $\frac{3\pi}{4}$

6 a 0.64

b 1.42

c 1.36

d -0.39

e 0.40

f -0.43

g -0.53

h 2.42

7 a  $x = \sin \frac{\pi}{4} = \frac{1}{\sqrt{2}}$

b  $x = \cos 0 = 1$

c  $x = \tan \left(-\frac{\pi}{3}\right) = -\sqrt{3}$

d  $2x = \cos \frac{\pi}{6} = \frac{\sqrt{3}}{2}$

e  $\arctan x = \frac{\pi}{4}$

f  $\arcsin x = -\frac{\pi}{6}$

$x = \frac{\sqrt{3}}{4}$

$x = \tan \frac{\pi}{4} = 1$

$x = \sin \left(-\frac{\pi}{6}\right) = -\frac{1}{2}$

8 a  $x = \cos 2 = -0.416$

b  $x = \sin (-0.7) = -0.644$

c  $3x = \tan 0.96 = 1.42836$   
 $x = 0.476$

d  $\arcsin x = 1$

e  $\arctan x = -\frac{2}{3}$

f  $\arccos 2x = 3$

$x = \sin 1 = 0.841$

$x = \tan \left(-\frac{2}{3}\right) = -0.787$

$2x = \cos 3 = -0.98999$

$x = -0.495$

9 a  $f\left(-\frac{1}{2}\right) = \frac{2\pi}{3} - \frac{\pi}{3} = \frac{\pi}{3}$

b  $\arccos x = \frac{\pi}{3} \Rightarrow x = \cos \frac{\pi}{3} = \frac{1}{2}$

c  $y = \arccos x - \frac{\pi}{3}$     swap     $x = \arccos y - \frac{\pi}{3}$

$y = \cos \left(x + \frac{\pi}{3}\right)$

$f^{-1}(x) \equiv \cos \left(x + \frac{\pi}{3}\right), x \in \mathbb{R}, -\frac{\pi}{3} \leq x \leq \frac{2\pi}{3}$