

5.4 - 6.5: (Inverse Trigonometric Functions and Their Graphs)

<p>If <math>\sec^{-1} 2 + \cos^{-1} x = \frac{\pi}{2}</math>, then <math>x =</math></p> <p>A) <math>\frac{1}{2}</math> B) <math>-\frac{1}{2}</math> C) 1 D) <math>\frac{\sqrt{3}}{2}</math> E) <math>-\frac{\sqrt{3}}{2}</math></p>	<p>Inverse Trigonometric Functions.</p>
<p><math>\cos^{-1} \left( \cos \left( \frac{8\pi}{7} \right) \right) =</math></p> <p>A) <math>\frac{4\pi}{7}</math> B) <math>\frac{5\pi}{11}</math> C) <math>\frac{8\pi}{7}</math> D) <math>\frac{6\pi}{7}</math> E) <math>\frac{3\pi}{7}</math></p>	<p>Inverse Trigonometric Functions.</p>

$$\cos^{-1}\left(\sin\left(\frac{2\pi}{7}\right)\right) =$$

A)  $\frac{3\pi}{14}$

B)  $\frac{\pi}{14}$

C)  $\frac{5\pi}{14}$

D)  $\frac{2\pi}{7}$

E)  $\frac{3\pi}{7}$

Inverse  
Trigonometric  
Functions.

If  $\sec \theta = -\frac{2\sqrt{3}}{3}$  and  $\cot \theta = \sqrt{3}$ , then a value of  $\theta$  is

A)  $210^\circ$

B)  $240^\circ$

C)  $225^\circ$

D)  $150^\circ$

E)  $330^\circ$

Inverse  
Trigonometric  
Functions.

If  $\csc \theta = -\frac{2\sqrt{3}}{3}$  and  $\cot \theta = \frac{\sqrt{3}}{3}$ , then a value of  $\theta$  is

A)  $240^\circ$

B)  $210^\circ$

C)  $225^\circ$

D)  $330^\circ$

E)  $150^\circ$

Inverse  
Trigonometric  
Functions.

<p>Which one of the following statements is TRUE?</p> <p>A) <math>\tan(\tan^{-1}(-11)) = -11</math></p> <p>B) <math>\tan^{-1}\left(\tan\frac{4\pi}{3}\right) = \frac{4\pi}{3}</math></p> <p>C) <math>\tan^{-1} x</math> is an even function</p> <p>D) <math>\tan^{-1} x = \frac{\sin^{-1} x}{\cos^{-1} x}</math></p> <p>E) <math>\tan^{-1}(-1) = \frac{\pi}{4}</math></p>	<p>Inverse Trigonometric Functions.</p>
<p><math>\csc\left[\frac{\pi}{2} + \sin^{-1}\left(-\frac{3}{5}\right)\right] =</math></p> <p>A) <math>\frac{5}{4}</math></p> <p>B) <math>-\frac{3}{5}</math></p> <p>C) <math>\frac{3}{5}</math></p> <p>D) <math>-\frac{5}{4}</math></p> <p>E) <math>\frac{5}{3}</math></p>	<p>Inverse Trigonometric Functions.</p>
<p>Which one of the following statements is TRUE?</p> <p>(a) <math>\sin^{-1}\left(\frac{\pi}{5}\right)</math> is defined</p> <p>(b) <math>\tan(\tan^{-1} 100)</math> is undefined</p> <p>(c) <math>\cos\left(\cos^{-1}\left(-\frac{1}{2}\right)\right) = \frac{1}{2}</math></p> <p>(d) <math>\tan^{-1} x = \frac{\sin^{-1} x}{\cos^{-1} x}</math></p> <p>(e) The functions <math>y = \cos^{-1} x</math> and <math>y = \sin^{-1} x</math> have the same range</p>	<p>Inverse Trigonometric Functions.</p>

<p>The exact value of <math>\sin^{-1}\left(\sin\frac{7\pi}{6}\right) + \tan\left(\cos^{-1} - \frac{1}{2}\right)</math> is</p> <p>(a) <math>-\frac{\pi}{6} - \sqrt{3}</math></p> <p>(b) <math>\frac{7\pi}{6} + \frac{\sqrt{3}}{3}</math></p> <p>(c) <math>\frac{\pi}{6} + \sqrt{3}</math></p> <p>(d) <math>\frac{5\pi}{6} - 1</math></p> <p>(e) <math>-\frac{\pi}{6} + \sqrt{3}</math></p>	<p>Inverse Trigonometric Functions.</p>
<p><math>\sin^{-1}\left(\cos\left(\frac{5\pi}{11}\right)\right) =</math></p> <p>A) <math>\frac{\pi}{22}</math></p> <p>B) <math>\frac{5\pi}{11}</math></p> <p>C) <math>\frac{20\pi}{11}</math></p> <p>D) <math>\frac{\pi}{11}</math></p> <p>E) <math>\frac{19\pi}{22}</math></p>	<p>Inverse Trigonometric Functions.</p>
<p>If the domain of <math>f(x) = \pi + 5\cos^{-1}\left(\frac{x}{2} + b\right)</math> is <math>[3,7]</math>, then <math>2b + 1 =</math></p> <p>A) -4</p> <p>B) -5</p> <p>C) 4</p> <p>D) 5</p> <p>E) 6</p>	<p>Inverse Trigonometric Functions.</p>

<p>The exact value of <math>\cos^{-1}\left(\cos\frac{10\pi}{3}\right)</math>, is</p> <p>A) <math>\frac{2\pi}{3}</math></p> <p>B) <math>\frac{\pi}{3}</math></p> <p>C) <math>\frac{4\pi}{3}</math></p> <p>D) <math>\frac{10\pi}{3}</math></p> <p>E) undefined</p>	<p>Inverse Trigonometric Functions.</p>
<p>The range of <math>y = -\cos^{-1}(1 - 3x) - \pi</math>, is</p> <p>A) <math>[-2\pi, -\pi]</math></p> <p>B) <math>[\pi - 1, \pi + 1]</math></p> <p>C) <math>\left[-\frac{3\pi}{2}, -\frac{\pi}{2}\right]</math></p> <p>D) <math>\left[0, \frac{2}{3}\right]</math></p> <p>E) <math>\left[-\frac{3\pi}{2}, \frac{\pi}{2}\right]</math></p>	<p>Inverse Trigonometric Functions.</p>
<p>The exact value of <math>\cos^{-1}\left[\cos\left(\frac{5\pi}{4}\right)\right]</math> is</p> <p>A) <math>\frac{3\pi}{4}</math></p> <p>B) <math>\frac{\pi}{4}</math></p> <p>C) <math>\frac{5\pi}{4}</math></p> <p>D) <math>-\frac{\pi}{4}</math></p> <p>E) undefined</p>	<p>Inverse Trigonometric Functions.</p>

$\cos^{-1}\left(-\frac{1}{2}\right) - \tan^{-1}\left(\frac{\sqrt{3}}{3}\right) =$ <p>A) <math>\frac{\pi}{2}</math>            B) <math>\frac{3\pi}{2}</math>            C) <math>\frac{\pi}{3}</math>            D) <math>\frac{5\pi}{6}</math>            E) <math>\frac{7\pi}{4}</math></p>	<p>Inverse Trigonometric Functions.</p>
$\tan\left[\sin^{-1}\left(-\frac{5}{13}\right)\right] =$ <p>A) <math>-\frac{5}{12}</math>            B) <math>-\frac{4}{5}</math>            C) <math>\frac{12}{5}</math>            D) <math>-\frac{12}{5}</math>            E) <math>\frac{5}{12}</math></p>	<p>Inverse Trigonometric Functions.</p>
<p>The exact value of <math>\cos\left(\sin^{-1}\left(-\frac{3}{5}\right)\right)</math> is equal to</p> <p>(a) <math>\frac{4}{5}</math>            (b) <math>-\frac{4}{5}</math>            (c) <math>\frac{3}{4}</math>            (d) <math>-\frac{3}{4}</math>            (e) <math>\frac{3}{5}</math></p>	<p>Inverse Trigonometric Functions.</p>

From the adjacent figure  $\theta =$

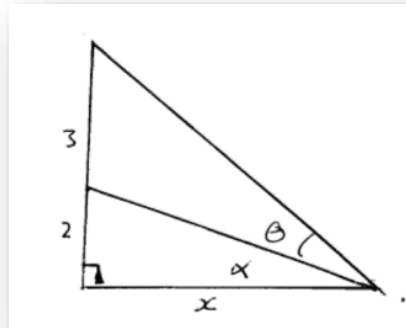
A)  $\tan^{-1}\left(\frac{5}{x}\right) - \tan^{-1}\left(\frac{2}{x}\right)$

B)  $\frac{1}{5}\tan^{-1}\left(\frac{5}{x}\right)$

C)  $\tan^{-1}\left(\frac{x}{5}\right)$

D)  $\tan^{-1}\left(\frac{2}{x}\right)$

E)  $\tan^{-1}\left(\frac{3}{x}\right) - \tan^{-1}\left(\frac{5}{x}\right)$



Inverse  
Trigonometric  
Functions.

$\tan^{-1}\left(\tan\frac{3\pi}{4}\right) =$

A)  $-\frac{\pi}{4}$

B)  $\frac{\pi}{4}$

C)  $-\frac{3\pi}{4}$

D)  $\frac{3\pi}{4}$

E) undefined

Inverse  
Trigonometric  
Functions.

Which one of the following statements is TRUE?

A)  $\tan^{-1}\left(\tan\frac{4\pi}{3}\right) = \tan^{-1}\left(\tan\frac{\pi}{3}\right)$

B)  $\sin^{-1}\left(\sin\frac{5\pi}{6}\right) = \frac{5\pi}{6}$

C)  $\tan^{-1}x = \left(\frac{\sin x}{\cos x}\right)^{-1}$

D)  $\cos^{-1}(\cos x) = x$  for  $-1 \leq x \leq 1$

E)  $y = \sin^{-1}x$  is an even function.

Inverse  
Trigonometric  
Functions.

If  $\arcsin\left(y - \frac{\pi}{3}\right) = \frac{\pi}{6}$ , then  $y$  is equal to:

A)  $\frac{3+2\pi}{6}$

B)  $\frac{3-2\pi}{6}$

C)  $\frac{5\pi}{6}$

D)  $-\frac{3\sqrt{3}+2\pi}{6}$

E)  $-\frac{3\sqrt{3}}{6}$

Inverse  
Trigonometric  
Functions.

$\sin^{-1}\left[\sin\frac{3\pi}{5}\right] - \cos^{-1}\left[\cos\frac{3\pi}{5}\right] =$

A)  $\frac{6\pi}{5}$

B)  $-\frac{6\pi}{5}$

C)  $\frac{\pi}{5}$

D)  $\pi$

E)  $-\frac{\pi}{5}$

Inverse  
Trigonometric  
Functions.

$\tan^{-1}\left(\tan\frac{3\pi}{4}\right) + \sin\left(\sin^{-1}\frac{\pi}{4}\right) =$

A) 0

B)  $-\frac{\pi}{2}$

C)  $\frac{\pi}{2}$

D)  $-\frac{\pi}{4} + \frac{\sqrt{2}}{2}$

E)  $\pi$

Inverse  
Trigonometric  
Functions.



<p>The domain <math>D</math> and the range <math>R</math> of the function <math>f(x) = \pi + \cos^{-1}(x - 1)</math> are</p> <p>A) <math>D = [0,2]</math> and <math>R = [\pi, 2\pi]</math></p> <p>B) <math>D = [0,2]</math> and <math>R = [0,2\pi]</math></p> <p>C) <math>D = [-1,1]</math> and <math>R = [\pi, 2\pi]</math></p> <p>D) <math>D = [-1,1]</math> and <math>R = [0,2\pi]</math></p> <p>E) <math>D = [0,2]</math> and <math>R = [-\pi, \pi]</math></p>	<p>Inverse Trigonometric Functions.</p>
<p>If the domain of the function <math>f(x) = \frac{\pi}{2} - 3\sin^{-1}(2x - 3)</math> is <math>[m, n]</math>. then <math>m + n =</math></p> <p>A) 3</p> <p>B) 4</p> <p>C) 2</p> <p>D) <math>-\pi</math></p> <p>E) <math>\pi</math></p>	<p>Inverse Trigonometric Functions.</p>

$\sin^{-1}\left(\frac{3}{5}\right) + \cos^{-1}\left(-\frac{4}{5}\right) =$ <p>A) <math>\frac{7}{5}</math>  B) <math>\frac{\pi}{2}</math>  <b>C) <math>\pi</math></b>  D) <math>\frac{-1}{5}</math>  E) <math>\frac{3\pi}{2}</math></p>	<p>Inverse Trigonometric Functions.</p>
$\cos^{-1}\left(\sin\frac{\pi}{5}\right) =$ <p>A) <math>\frac{3\pi}{10}</math>  B) <math>\frac{3\pi}{20}</math>  C) <math>\frac{3\pi}{5}</math>  D) <math>\frac{\pi}{10}</math>  E) <math>\frac{2\pi}{5}</math></p>	<p>Inverse Trigonometric Functions.</p>
<p>The value of <math>\cos^{-1}\frac{1}{2} + \sin^{-1}\left(\sin\frac{7\pi}{6}\right)</math></p> <p>A) <math>\frac{\pi}{6}</math>  B) <math>\frac{\pi}{2}</math>  C) <math>\frac{3\pi}{2}</math>  D) <math>\frac{4\pi}{3}</math>  E) <math>\pi</math></p>	<p>Inverse Trigonometric Functions.</p>

<p>The range of the function <math>y = \frac{\pi}{2} + 2\cos^{-1}(x + 1)</math> is:</p> <p>A) <math>\left[\frac{\pi}{2}, \frac{5\pi}{2}\right]</math></p> <p>B) <math>[0, \pi]</math></p> <p>C) <math>[0, 2]</math></p> <p>D) <math>\left[\frac{\pi}{2} - 1, \frac{\pi}{2} + 1\right]</math></p> <p>E) <math>\left[-\frac{\pi}{2}, \frac{3\pi}{2}\right]</math></p>	<p>Inverse Trigonometric Functions.</p>
<p>If <math>\arctan \frac{\sqrt{3}}{3} = x</math> and <math>\arccos\left(-\frac{1}{2}\right) = y</math>, then <math>x + y =</math></p> <p>A) <math>\frac{5\pi}{6}</math></p> <p>B) <math>\pi</math></p> <p>C) <math>\frac{7\pi}{3}</math></p> <p>D) <math>\frac{4\pi}{3}</math></p> <p>E) <math>\frac{7\pi}{6}</math></p>	<p>Inverse Trigonometric Functions.</p>
<p>The solution of the equation <math>\cos^{-1} x + \tan^{-1} \frac{5}{12} = \frac{\pi}{2}</math> is</p> <p>A) <math>\frac{5}{13}</math></p> <p>B) <math>-\frac{12}{13}</math></p> <p>C) <math>\frac{13}{12}</math></p> <p>D) <math>-\frac{13}{5}</math></p> <p>E) <math>\frac{7}{12}</math></p>	<p>Inverse Trigonometric Functions.</p>

<p>Which of the following statements is FALSE?</p> <p>A) the domain of <math>y = \cos^{-1}(x + 1)</math> is <math>[0, 2]</math></p> <p>B) <math>\tan(\tan^{-1} x) = x</math>, for any real number <math>x</math>.</p> <p>C) the range of <math>y = 2\sin^{-1} x</math> is <math>[-\pi, \pi]</math></p> <p>D) <math>\sin^{-1} x + \sin^{-1}(-x) = 0</math>, <math>-1 \leq x \leq 1</math></p> <p>E) <math>\cos^{-1}\left(\cos\frac{x}{2}\right) = \frac{x}{2}</math> if <math>0 \leq x \leq 2\pi</math></p>	<p>Inverse Trigonometric Functions.</p>
<p>The solution set of the equation <math>2\cos^{-1}\left(\frac{x-\pi}{3}\right) = 2\pi</math> is</p> <p>A) <math>\{\pi - 3\}</math></p> <p>B) <math>\{\pi + 2\}</math></p> <p>C) <math>\{4 - \pi\}</math></p> <p>D) <math>\{2\pi - 3\}</math></p> <p>E) <math>\{\pi\}</math></p>	<p>Inverse Trigonometric Functions.</p>
<p>The graph of the function <math>y = \frac{1}{3}\tan^{-1} 2x - \frac{\pi}{3}</math> has</p> <p>A) range = <math>\left(-\frac{\pi}{2}, -\frac{\pi}{6}\right)</math>, domain = <math>(-\infty, \infty)</math></p> <p>B) range = <math>\left(\frac{\pi}{6}, \frac{\pi}{2}\right)</math>, domain = <math>(-\infty, \infty)</math></p> <p>C) range = <math>\left(-\frac{\pi}{2}, \frac{\pi}{2}\right)</math>, domain = <math>(-\infty, \infty)</math></p> <p>D) range = <math>\left(-\frac{\pi}{2}, \frac{\pi}{2}\right)</math>, domain = <math>[-1, 1]</math></p> <p>E) range = <math>(-\infty, \infty)</math>, domain = <math>\left(-\frac{\pi}{2}, \frac{\pi}{2}\right)</math></p>	<p>Inverse Trigonometric Functions.</p>

<p>The domain of the function <math>y = \frac{\pi}{2} + 2\sin^{-1}\left(\frac{3}{2}x - \frac{5}{2}\right)</math>, is</p> <p>A) <math>\left[1, \frac{7}{3}\right]</math></p> <p>B) <math>\left[\pi, \frac{7\pi}{3}\right]</math></p> <p>C) <math>\left(-\infty, \frac{-\pi+5}{3}\right] \cup \left[\frac{\pi+5}{3}, \infty\right)</math></p> <p>D) <math>\left[\frac{-\pi+5}{3}, \frac{\pi+5}{3}\right]</math></p> <p>E) <math>\left(-\infty, 1\right] \cup \left[\frac{7}{3}, \infty\right)</math></p>	<p>Inverse Trigonometric Functions.</p>
<p>The range of the function <math>y = \frac{\pi}{3} + \frac{1}{2}\sin^{-1}\left(x - \frac{\pi}{3}\right)</math> is:</p> <p>A) <math>\left[\frac{\pi}{12}, \frac{7\pi}{12}\right]</math></p> <p>B) <math>\left[\frac{\pi}{3} - \frac{1}{2}, \frac{\pi}{3} + \frac{1}{2}\right]</math></p> <p>C) <math>\left(-\infty, \frac{\pi}{3} - \frac{1}{2}\right] \cup \left[\frac{\pi}{3} + \frac{1}{2}, \infty\right)</math></p> <p>D) <math>\left[-\frac{\pi}{3}, \frac{\pi}{3}\right]</math></p> <p>E) <math>\left(-\infty, \frac{\pi}{12}\right] \cup \left[\frac{7\pi}{12}, \infty\right)</math></p>	<p>Inverse Trigonometric Functions.</p>