

Name: Answers


Date: \_\_\_\_\_

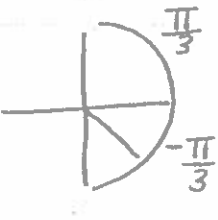
Homework: Inverse Trig. Functions

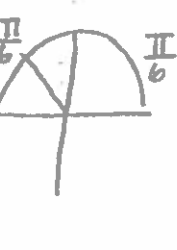
Honors PreCalculus

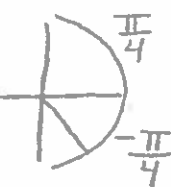
Textbook (Pages 450-451) – Problems 16, 22-24, 30, 42, 50

Textbook (Page 457) – Problems 9, 12, 18, 22, 24, 25, 26, 34

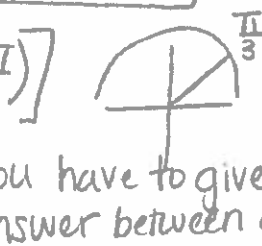
16)  $\cos^{-1}(-1)$   $(-1, 0)$    
 $\boxed{\pi}$

22)  $\sin^{-1}(-\frac{\sqrt{3}}{2})$    
 $\boxed{-\frac{\pi}{3}}$


23)  $\cos^{-1}(-\frac{\sqrt{3}}{2})$    
 $\boxed{\frac{5\pi}{6}}$

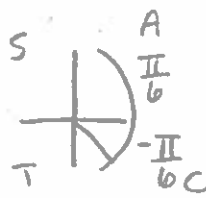
24)  $\sin^{-1}(-\frac{\sqrt{2}}{2})$    
 $\boxed{-\frac{\pi}{4}}$

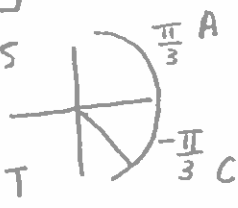
30)  $\sin^{-1}(\frac{1}{8})$  \* use calculator  
 $\boxed{7.18^\circ \text{ or } .13 \text{ radians}}$

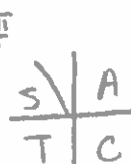
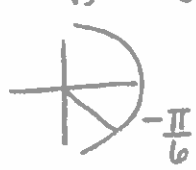
42)  $\cos^{-1}[\cos(-\frac{5\pi}{3})]$    
 $\frac{\pi}{3}$  (you have to give an answer between 0 and  $\pi$ .)

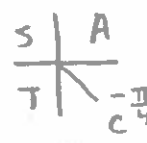

50)  $\sin[\sin^{-1}(-2)]$   
 ↑  
 not defined because  $\sin^{-1}x$  has a domain of  $[-1, 1]$

9)  $\cos(\sin^{-1}(\frac{\sqrt{2}}{2}))$    
 $\cos(\frac{\pi}{4}) =$   
 $\boxed{\frac{\sqrt{2}}{2}}$

12)  $\tan[\sin^{-1}(-\frac{1}{2})]$    
 $\tan(-\frac{\pi}{6})$   
 $-\frac{1/2}{\frac{\sqrt{3}}{2}} = -\frac{1}{\sqrt{3}} = \boxed{-\frac{\sqrt{3}}{3}}$

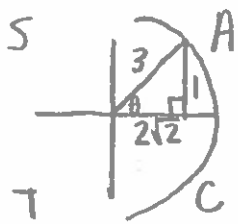
18)  $\cos[\sin^{-1}(-\frac{\sqrt{3}}{2})]$    
 $\cos(-\frac{\pi}{3})$   
 $\boxed{\frac{1}{2}}$

22)  $\tan^{-1}(\cot \frac{2\pi}{3})$    
 $\downarrow$   
 $\cot \frac{2\pi}{3} = -\frac{1/2}{\frac{\sqrt{3}}{2}} = -\frac{1}{\sqrt{3}} = -\frac{\sqrt{3}}{3}$   
 $\tan^{-1}(-\frac{\sqrt{3}}{3})$    
 $\boxed{-\frac{\pi}{6}}$

24)  $\cos^{-1}[\tan(-\frac{\pi}{4})]$    
 $\cos^{-1}[-1]$   
 $\boxed{\pi}$  

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25)  $\tan(\sin^{-1}(\frac{1}{3}))$



$$x^2 + 1^2 = 3^2$$

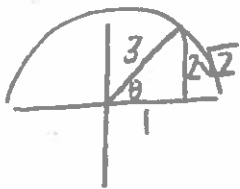
$$x^2 = 8$$

$$\sqrt{x^2} = \sqrt{8}$$

$$x = 2\sqrt{2}$$

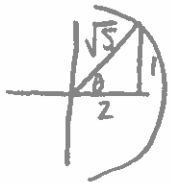
$$\tan\theta = \frac{1}{2\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \boxed{\frac{\sqrt{2}}{4}}$$

26)  $\tan(\cos^{-1}(\frac{1}{3}))$



$$\tan\theta = \frac{2\sqrt{2}}{1} = \boxed{2\sqrt{2}}$$

34)  $\csc(\tan^{-1}(\frac{1}{2}))$



$$1^2 + 2^2 = x^2$$

$$5 = x^2$$

$$\sqrt{5} = x$$

$$\csc\theta = \frac{\sqrt{5}}{1} = \boxed{\sqrt{5}}$$