Problem	Solution

Find the exact trigonometric ratios for the angle given.

1. $\theta = \dfrac{\pi}{6}$	
2. $\theta = \dfrac{2\pi}{3}$	
3. $\theta = \dfrac{7\pi}{4}$	
4. $\theta = \dfrac{4\pi}{3}$	
5. $\theta = \dfrac{3\pi}{2}$	
6. $\theta = \dfrac{-\pi}{6}$	
7. $\theta = \dfrac{17\pi}{3}$	
8. $\theta = 5\pi$	
9. $\theta = \dfrac{-7\pi}{2}$	
10. $\theta = -4\pi$	

Problem	Solution

Note about notation: $\sin^{-1}(x) \neq \dfrac{1}{\sin(x)}$, $\quad \sin^{-1}(x) = \arcsin(x)$

Based on the given statement, determine the six standard trigonometric ratios. Assume $0 \leq \theta \leq \dfrac{\pi}{2}$. Hint, sketching a triangle will help.

Problem	Solution
1. $\tan\theta = 3$	
2. $\sec\theta = a$	
3. $\sin\theta = \dfrac{2}{3}$	
4. $\cos\theta = \dfrac{x}{x+1}$	
5. $\sin^{-1}\left(\dfrac{\sqrt{3}}{2}\right)$	
6. $\csc^{-1}\left(\dfrac{2}{\sqrt{3}}\right)$	
7. $\sec^{-1}(1)$	
8. $\tan\left(\sec^{-1}(6)\right)$	
9. $\sin\left(\tan^{-1}\left(\dfrac{5}{12}\right)\right)$	
10. $\cos\left(\tan^{-1}(x)\right)$	
11. $\cos\left(\sin^{-1}(x)\right)$	
12. $\cos\left(2\sin^{-1}(x)\right)$	
13. $\tan\left(\tan^{-1}(x) + \tan^{-1}(y)\right)$	
14. $\tan^{-1}\left(\dfrac{x}{\sqrt{1-x^2}}\right)$	
15. $\cos\left(2\tan^{-1}(x)\right)$	
16. $\sec\left(\cos^{-1}\left(\dfrac{\sqrt{x}}{x+1}\right)\right)$	