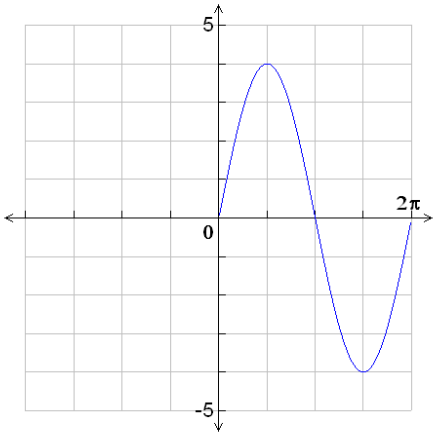
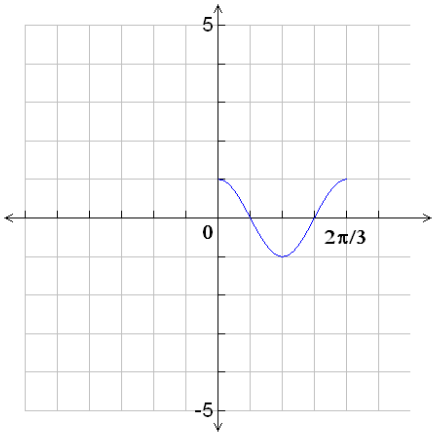
Math 154 – Test 4 Review

Graph one complete cycle. Identify *A*, the period, phase shift, and vertical translation.

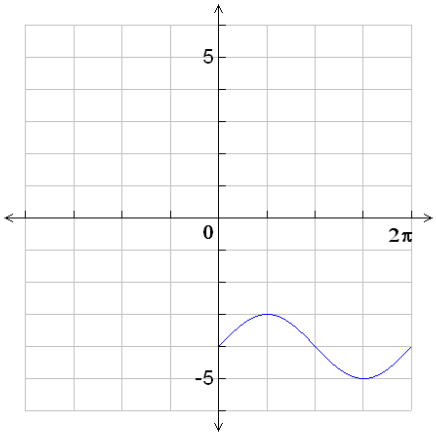
1) $y = 4\sin x$



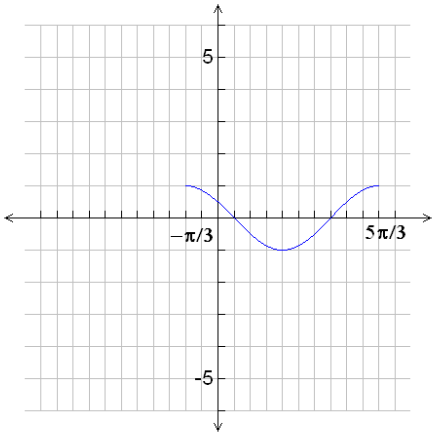
2) $y = \cos(3x)$



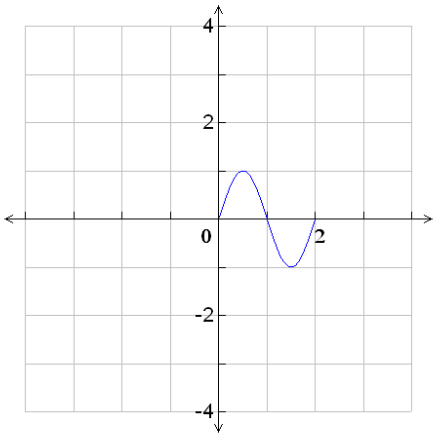
3) $y = \sin x - 4$



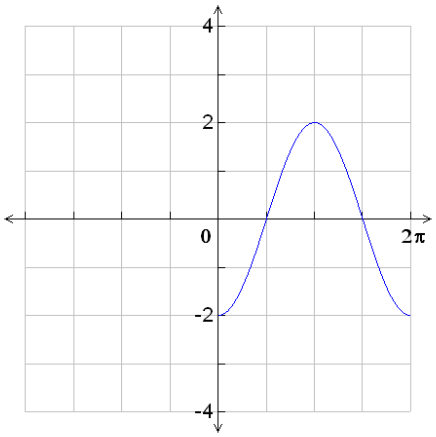
4) $y = \cos\left(x + \frac{\pi}{3}\right)$

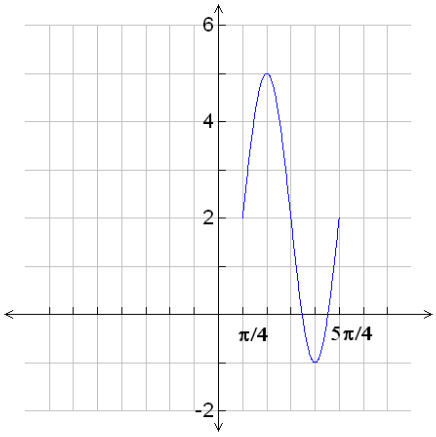
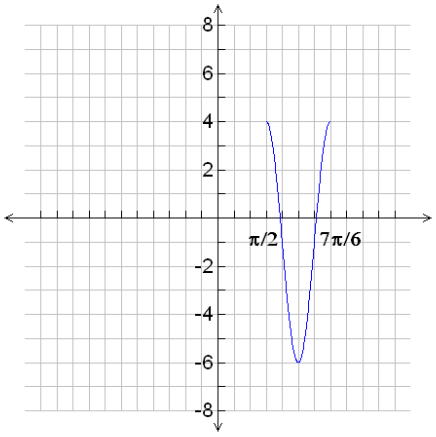
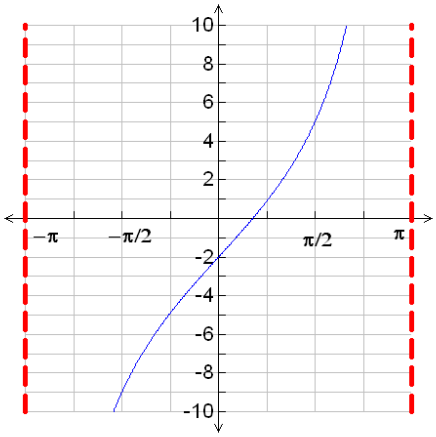
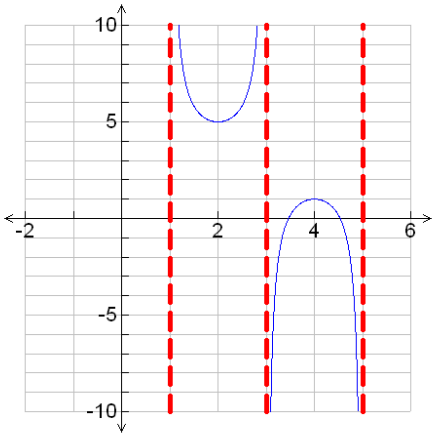


5) $y = \sin(\pi x)$

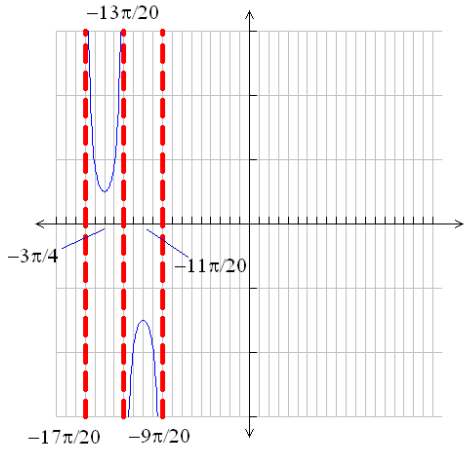


6) $y = -2\cos x$

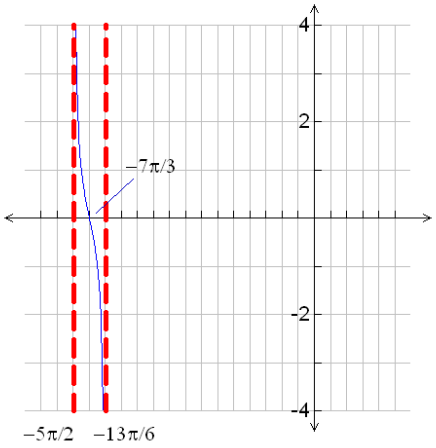


7) $y = 3\sin\left(2\left(x - \frac{\pi}{4}\right)\right) + 2$	8) $y = 5\cos\left(3\left(x - \frac{\pi}{2}\right)\right) - 1$
	
9) $y = 7\tan\left(\frac{1}{2}x\right) - 2$	10) $y = 2\csc\left(\frac{\pi}{2}(x-1)\right) + 3$
	

11) $y = \sec\left(5\left(x + \frac{3\pi}{4}\right)\right) - \frac{1}{2}$

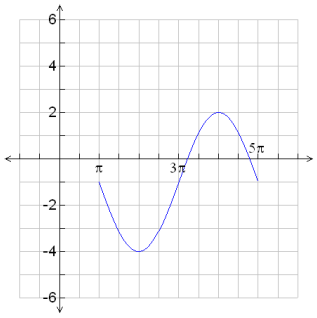


12) $y = \cot\left(3\left(x + \frac{5\pi}{2}\right)\right)$

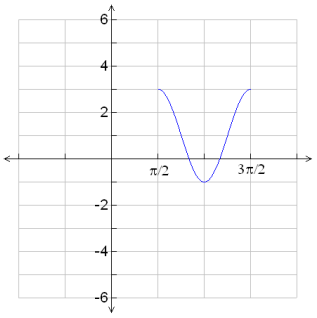


Identify the graph shown.

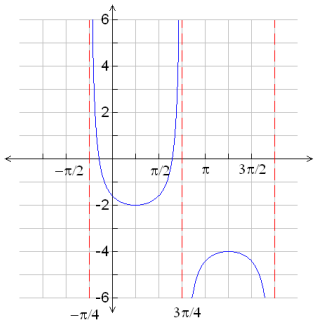
13. $y = -3\sin\left(\frac{1}{2}(x - \pi)\right) - 1$



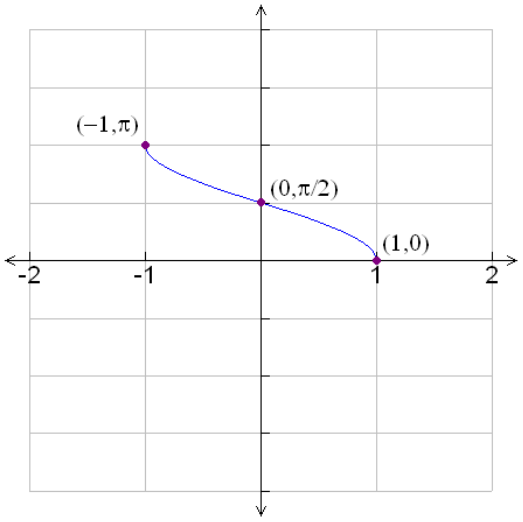
14. $y = 2\cos\left(2\left(x - \frac{\pi}{2}\right)\right) + 1$



15. $y = \csc\left(\left(x + \frac{\pi}{4}\right)\right) - 3$



16. Graph $y = \cos^{-1} x$.



Evaluate without a calculator. Express your answer in radians.

17. $\sin^{-1}\left(\frac{\sqrt{3}}{2}\right)$

$\boxed{\frac{\pi}{3}}$

18. $\cos^{-1}(1)$

$\boxed{0}$

19. $\tan^{-1}\left(-\frac{\sqrt{2}}{2}\right)$

Typo – we don't know the angle whose tan is $-\frac{\sqrt{2}}{2}$.

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20. $\sin\left(\cos^{-1}\left(\frac{1}{\sqrt{5}}\right)\right)$

$\boxed{\frac{2}{\sqrt{5}} \text{ or } \frac{2\sqrt{5}}{5}}$

21. $\cos^{-1}\left(\cos\frac{5\pi}{4}\right)$

$\boxed{\frac{\pi}{4}}$

22. $\tan\left(\sin^{-1} x\right)$

$\boxed{\frac{x}{\sqrt{1-x^2}} \text{ or } \frac{x\sqrt{1-x^2}}{1-x^2}}$