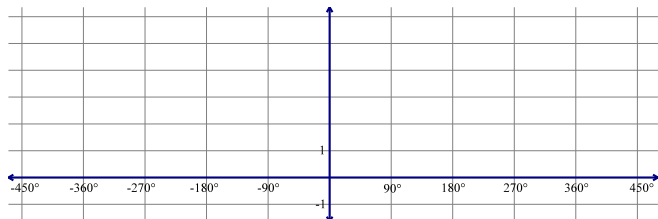


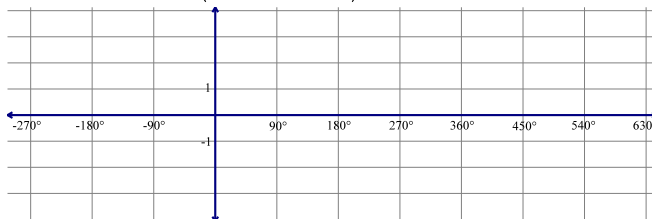
List all transformations, then sketch a complete graph.

○ = Challenge problem!

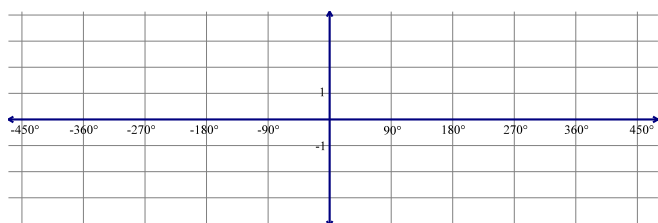
1. $f(x) = 3 \sin(x + 30^\circ) + 3$



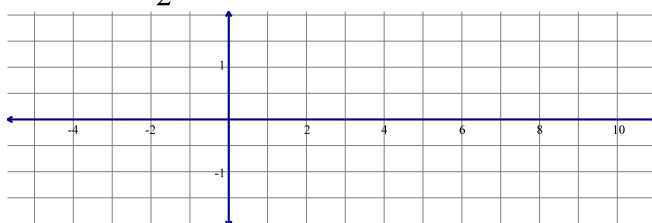
2. $f(x) = \sin\left(\frac{1}{2}(x + 45^\circ)\right) + 2$



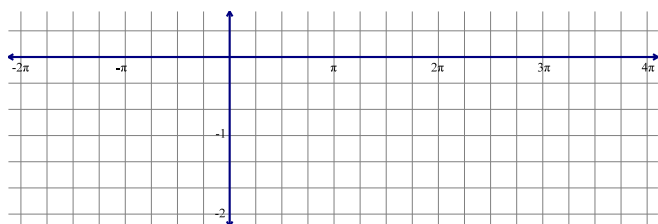
3. $f(x) = \sin(3(x - 90^\circ)) - 2$



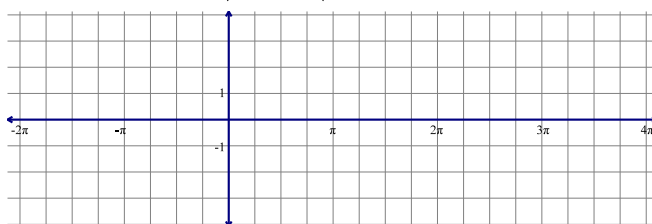
4. $f(x) = \frac{1}{2} \cos(\pi(x - 3))$



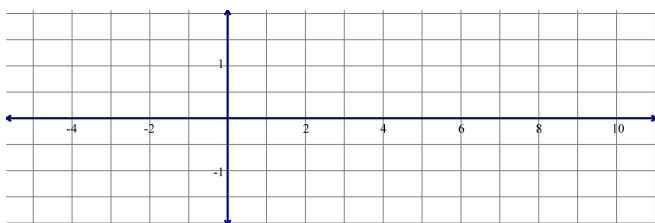
5. $f(x) = \frac{2}{3} \cos(x + \pi) - 1$



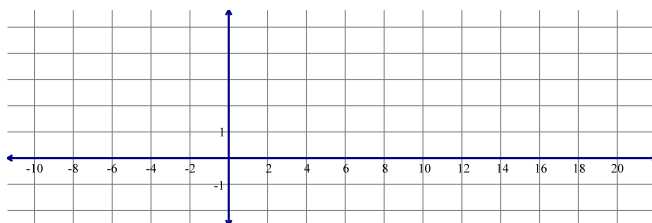
6. $f(x) = 3 \cos\left(x + \frac{3\pi}{2}\right)$



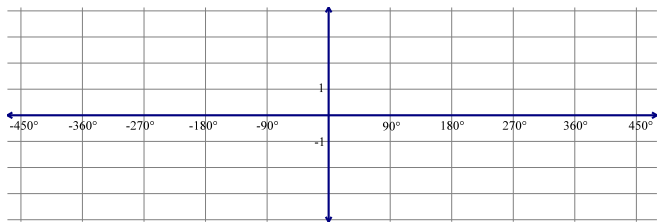
7. $f(x) = \sin\left(\frac{\pi}{3}(x + 2)\right) - 1$



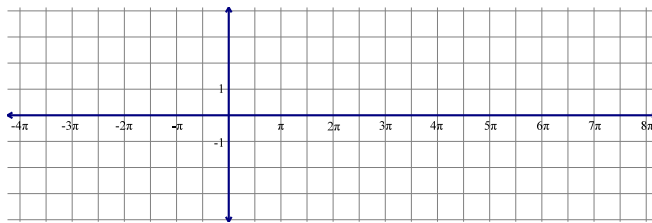
8. $f(x) = 2 \cos\left(\frac{\pi}{6}x\right) + 2$



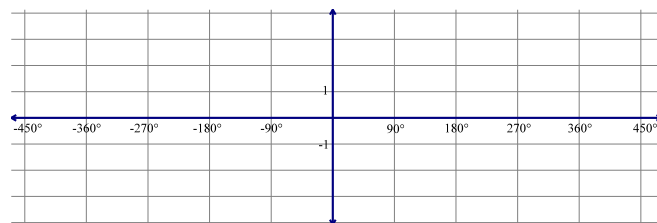
9. $f(x) = 3 \cos(4(x - 45^\circ))$



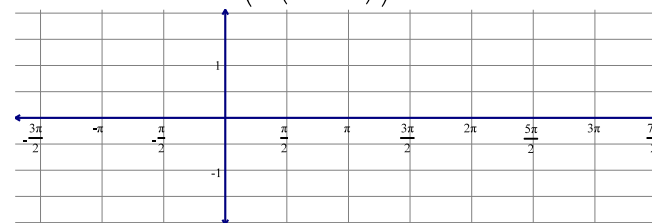
10. $f(x) = 2 \sin\left(\frac{1}{4}\left(x + \frac{\pi}{4}\right)\right) + 1$



11. $f(x) = 2 \cos(3(x + 30^\circ)) - 1$

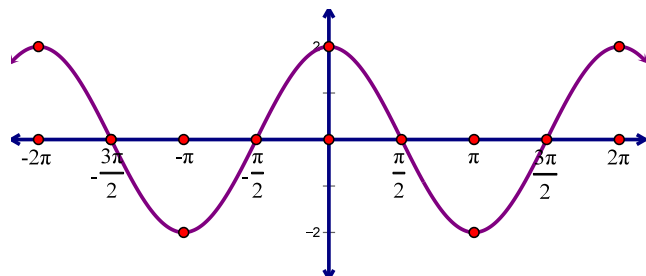


12. $f(x) = \frac{1}{2} \cos\left(2\left(x - \frac{\pi}{2}\right)\right) - 1$

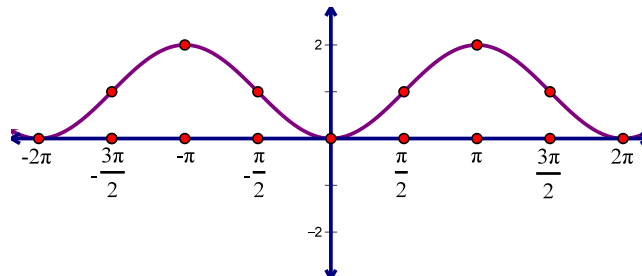


Find the sine equation and the cosine equation of the function graphed.

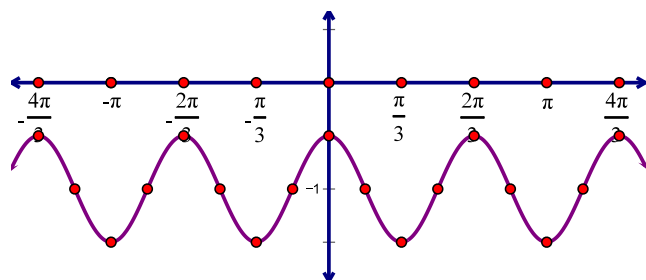
13.



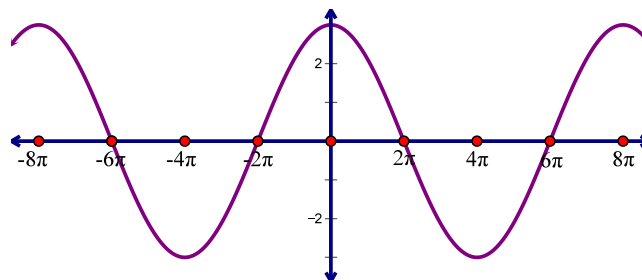
14.



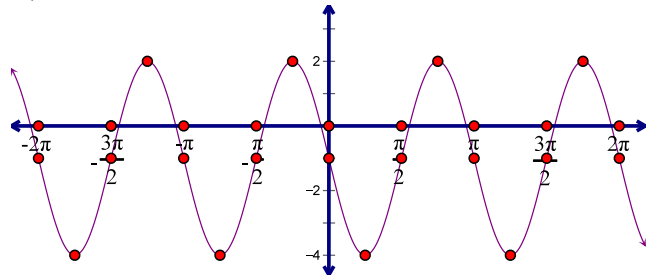
15.



16.



17.



18.

