

HW 4.3.4: Graphing transformations of $y = \sin x$ and $y = \cos x$

Graph two cycles for each of the functions without a calculator. Identify the period and label at least one relative maximum and minimum. (Radian graph paper may be useful)

1. $y = -1 + 3\sin\left(x - \frac{\pi}{4}\right)$

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

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

4. $y = -1 + 3\cos\left(\frac{3}{2}x\right)$

5. $y = 3\cos\left(x + \frac{5\pi}{6}\right)$

6. $y = 4\cos\left(\frac{4}{3}x\right)$

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

8. $y = 1 - 3\cos\left(3\left(x - \frac{\pi}{3}\right)\right)$

9. $y = 4\sin\left(\frac{2}{3}x + \frac{\pi}{9}\right)$

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

Graph two cycles for each of the functions without a calculator. Identify the period and at least one relative maximum and minimum. (labeling the domain every quarter cycle may be useful)

11.) $y = -2 - 4\sin\left(\frac{\pi}{2}\left(x - \frac{1}{3}\right)\right)$

12.) $y = 10\cos\left(\frac{2\pi}{3}\left(x + \frac{1}{4}\right)\right)$

13.) $y = 4\sin\left(\frac{4\pi}{3}x\right)$

14.) $y = 8\cos\left(\frac{\pi}{4}x - \frac{\pi}{2}\right)$



