State the amplitude, period, phase shift, and vertical shift. Then graph for one period.

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

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

3. $y = 1 + \sin\left(x - \frac{\pi}{6}\right)$

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

Graph using addition of ordinates.

5. $y = 2\cos x + \cos 2x$

6. $y = 2\sin x + \sin 2x$

7. $y = \sin x + \frac{1}{2}\cos 2x$

8. $y = \cos x + \frac{1}{2}\cos 2x$

9. $y = \sin 2x - 2\sin x$

10. $y = \sin 2x - 2\cos x$

11. $y = 2\cos x - 2\sin x$

12. $y = \frac{1}{2}\cos x - 2\sin x$

13. $y = \sin 2x + \cos 3x$

14. $y = \sin 3x + \cos 2x$