**Cosine Functions**

1. Determine the amplitude, period, phase shift, and vertical shift of each function.

   a) \(y = \cos 2x - 5\)

   b) \(y = 2\sin(3x + 3\pi)\)

   c) \(y = 3\cos 0.5x + 4\)

   d) \(y = -\sin(x - \pi/4) - 2\)

2. Determine the phase shift and vertical shift of each function. Then write an equation of each graph.

   a)

   ![Graph](image1)

   b)

   ![Graph](image2)

3. Give the phase shift and vertical shift of each function. Then sketch the graph of the function over the given interval.

   a) \(y = \sin(x - \pi/2) + 1, \ [0, 2\pi]\)

   b) \(y = \cos x - 3, \ [-2\pi, 2\pi]\)

   c) \(y = \cos(x + \pi) - 2, \ [0, 3\pi]\)

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