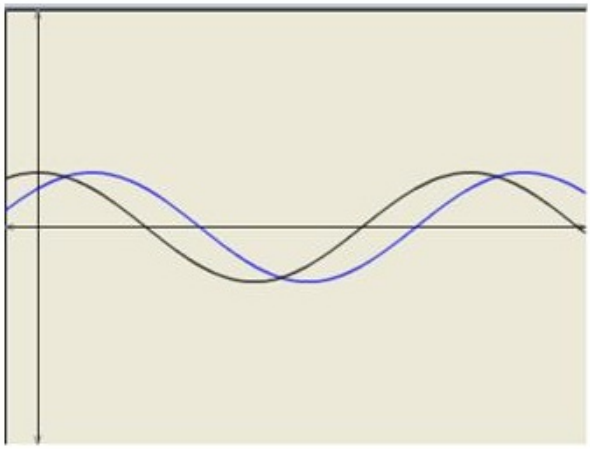
Chapter 6 Graphs of Trigonometric Functions Ex 6.2 Q2



We have,

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

$$\Rightarrow \quad y - 0 = \cos 2\left(x - \frac{\pi}{4}\right) \qquad \text{---(i)}$$

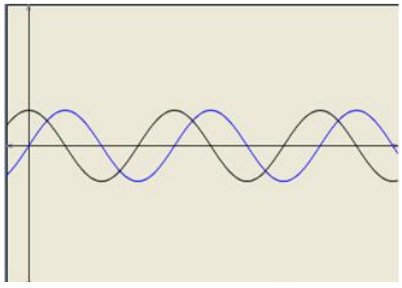
Shifting the origin at $\left(\frac{\pi}{4}, 0\right)$, we obtain

$$x = X + \frac{\pi}{4}, \; y = Y + 0$$

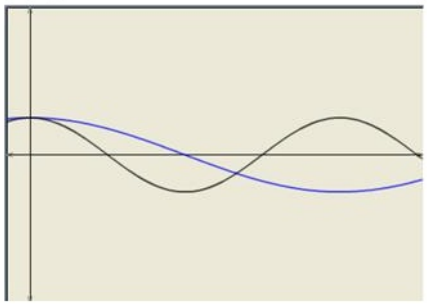
Substituting these values in (i), we get

$$Y = \cos 2X.$$

Thus we draw the graph of $Y = \cos 2X$ and shift it by $\frac{\pi}{4}$ to the right to get the required graph.



To obtain the graph of $y = \cos\frac{x}{2}$ we first draw the graph of $y = \cos x$ in the interval $[0, 2\pi]$ and then divide the x-coordinates of the points where it crosses x-axis by 1/2.



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