By Eulers formula:
$$e^{ix} = cos(x) + i sin(x)$$

 $e^{ix} = cos(x) - i sin(x)$

$$= \sum_{i} e^{ix} - e^{-ix} = cox(x) + i sin(x) - cos(x) + i sin(x)$$

$$e^{ix} - e^{ix} = 2 \cdot i \cdot sin(x)$$

$$sin(x) = \frac{e^{ix} - e^{-ix}}{2 \cdot i}$$

$$\frac{e^{ix} - e^{-ix}}{2 \cdot i}$$

Since
$$\frac{1}{\dot{c}} = \frac{1}{\dot{c}} \cdot \frac{\dot{c}}{\dot{c}} = \frac{\dot{c}}{-1} = -\dot{c}$$

$$i. \quad \sin(x) = -i. \left(\frac{e^{ix} - e^{-ix}}{2} \right)$$

$$cox(x)$$

$$c^{ix} + c^{ix} = cox(x) + ixix(x) + cox(x) - ixix(x)$$

$$= 2 cox(x)$$

$$\therefore \cos(x) = \frac{e^{ix} + e^{ix}}{2}$$