

Trigonometry Review

#7

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

matching with $y = A \cos(Bx + C)$

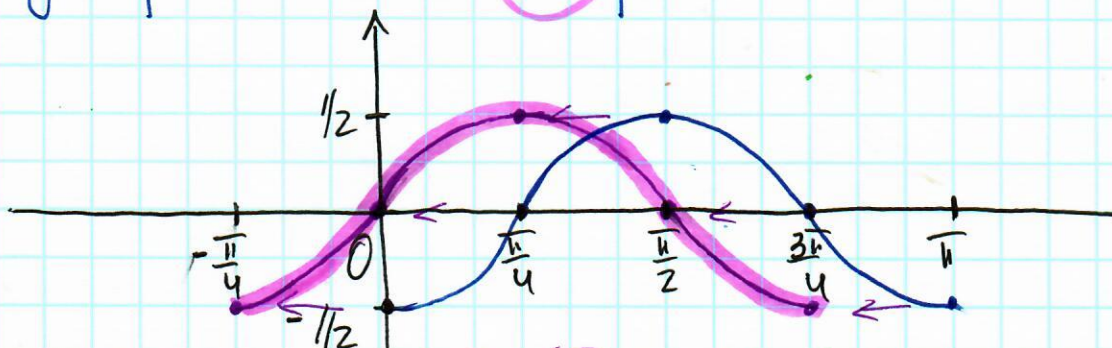
$A = -\frac{1}{2}$ $B = 2$ $C = -\frac{\pi}{2}$

- 1) amplitude = $|A| = \frac{1}{2}$
- 2) period = $\frac{2\pi}{B} = \frac{2\pi}{2} = \pi$
- 3) phase shift = $\frac{C}{B} = \frac{-\frac{\pi}{2}}{2} = -\frac{\pi}{4}$ shift to the left $\frac{\pi}{4}$ units

5 points: x-coordinates: $0, \frac{\text{period}}{4}, \frac{\text{period}}{2}, \frac{3 \text{ periods}}{4}, \text{period}$
 y-values: use $y = -\frac{1}{2} \cos(2x)$

x	<u>0</u>	<u>$\frac{\pi}{4}$</u>	<u>$\frac{\pi}{2}$</u>	<u>$\frac{3\pi}{4}$</u>
y	$-\frac{1}{2} \cos(2 \cdot 0) = -\frac{1}{2}$	$-\frac{1}{2} \cos(2 \cdot \frac{\pi}{4}) = 0$	$-\frac{1}{2} \cos(2 \cdot \frac{\pi}{2}) = \frac{1}{2}$	$-\frac{1}{2} \cos(2 \cdot \frac{3\pi}{4}) = 0$

x	<u>π</u>
y	$-\frac{1}{2} \cos(2 \cdot \pi) = -\frac{1}{2}$



horizontal shift $\frac{\pi}{4}$ units left