



TOP CHEF
★ ★ ★ ★ ★
MASTERS
GRAPHERS

ROUND 1

(restaurant specializes in $\cos x$ and $\sin x$ cuisine)

⑤ Appetizer

↳ amplitude of 4

↳ period of $\frac{\pi}{2}$

① vertical shift 3

$$\cdot |A| = 4 \Rightarrow A = 4 \text{ or } -4$$

$$\cdot \frac{2\pi}{B} = \frac{\pi}{2} \Rightarrow 4\pi = B\pi \Rightarrow 4 = B$$

Options

$$y = -4 \cos(4x) + 3$$

$$y = -4 \sin(4x) + 3$$

$$y = 4 \cos(4x) + 3$$

$$y = 4 \sin(4x) + 3$$

ROUND 2

⑩ Entré

↳ period of π

↳ phase shift of $\frac{\pi}{4}$

① amplitude of 2

① reflection across x-axis

① vertical shift of -1

ROUND 2 (part 2)

⑧ presentation

② flare

$$\cdot \frac{2\pi}{B} = \pi \Rightarrow 2\pi = B\pi \Rightarrow B = 2$$

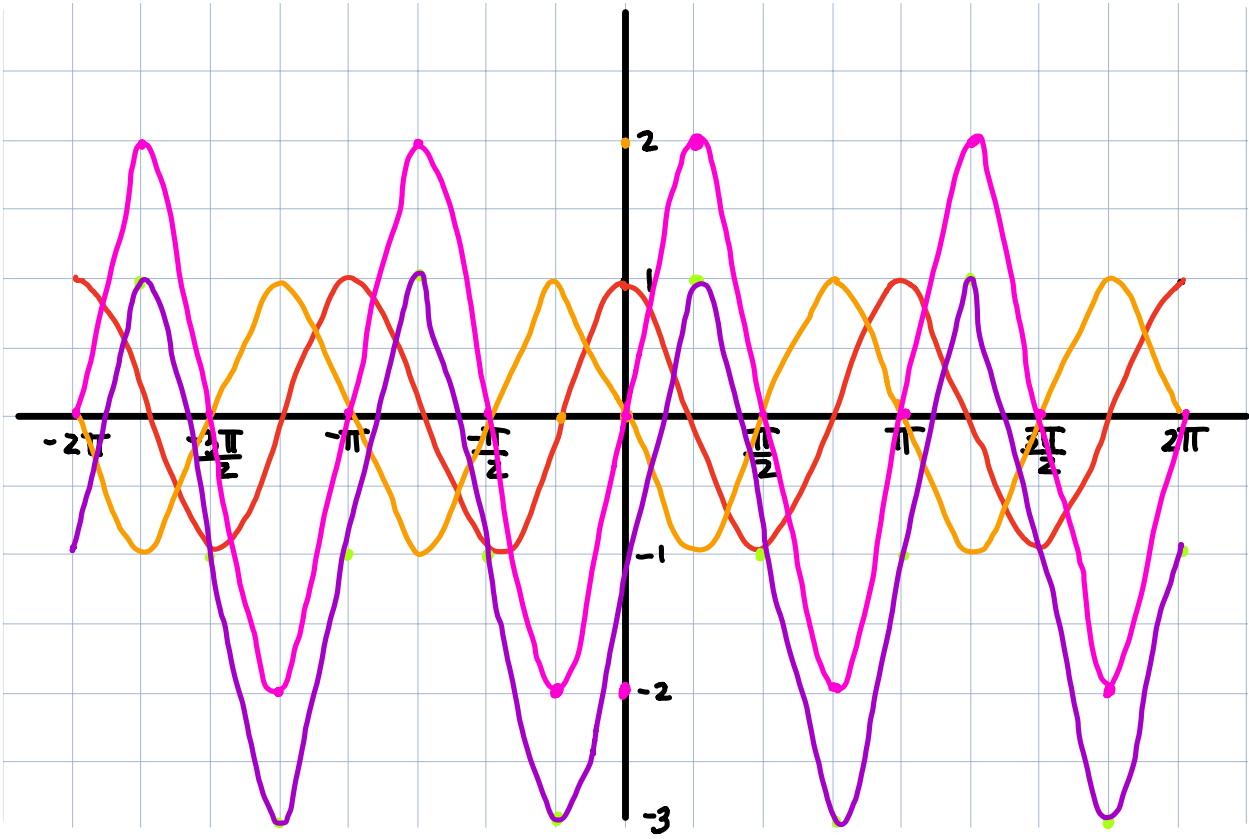
$$\cdot \frac{\pi}{4} = \frac{-C}{B} \Rightarrow \frac{\pi}{4} = \frac{-C}{2} \Rightarrow 2\pi = -4C \Rightarrow -\frac{2\pi}{4} = C$$
$$\Rightarrow -\frac{\pi}{2} = C$$

Options

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

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

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

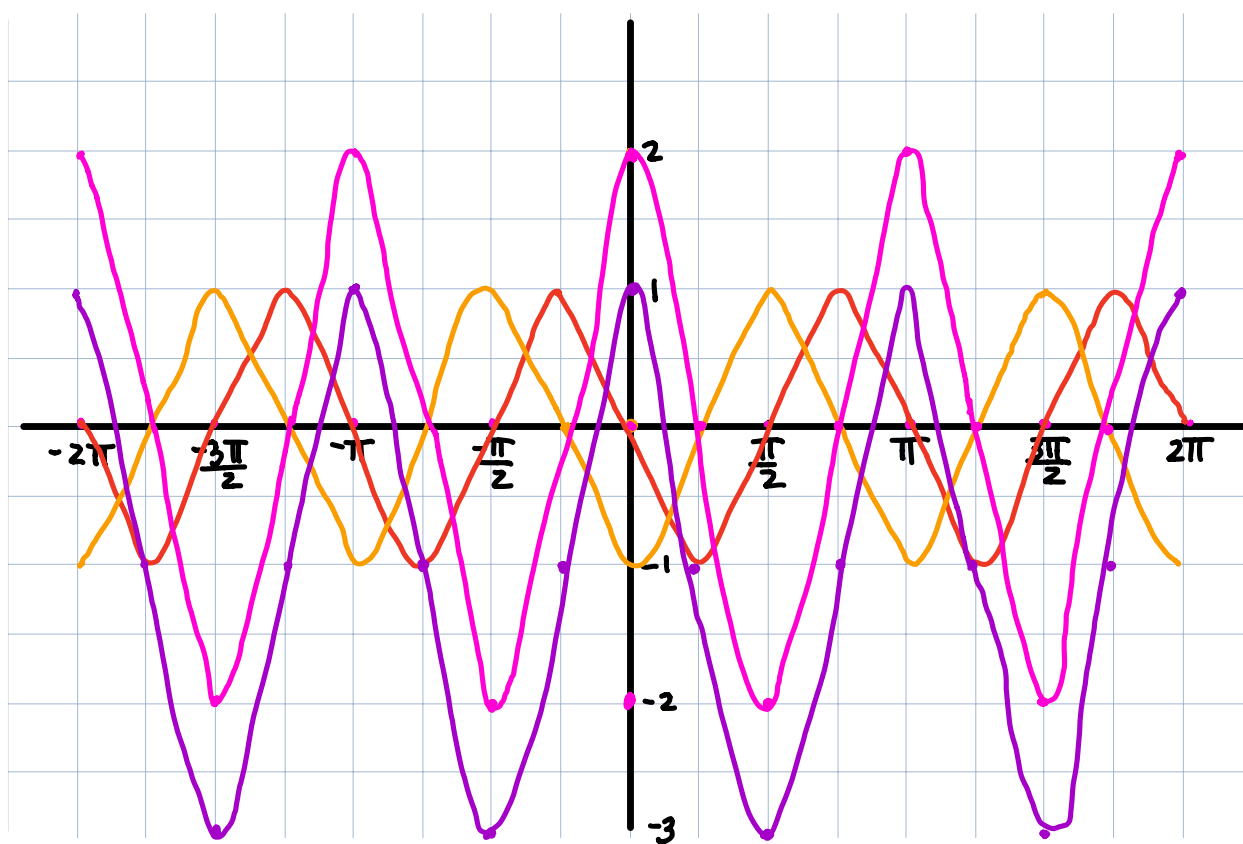


$$y = \sin(2x)$$

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

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

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



ROUND 3

Dessert

Pick One

- ↳ $\cos x$ based soufflé
- ↳ $\sin x$ based sorbet

⊕ Pick Two

- ↳ y-intercept: $(0, 0)$
- ↳ y-intercept: $(0, 5)$
- ↳ horizontal shift of π

⊕ vertical shift of -3

⊕ vertical shrink by $\frac{1}{2}$

$$\Rightarrow \frac{\cos x}{y\text{-int: } (0,5)}$$

$$\Rightarrow \frac{\sin x}{y\text{-int: } (0,0)}$$

$$\text{horizontal shift} = \text{phase shift} = -\frac{c}{B}$$

$$-\frac{c}{B} = \pi \Rightarrow -c = B\pi \Rightarrow c = -B\pi$$

Options

$$y = -3 + \frac{5}{2} \cos(Bx - B\pi)$$

$$y = -3 + \frac{1}{2} \sin(Bx - B\pi)$$