WARMUP

Find all angles on $[0, 2\pi)$ that solve

1) $\sin\theta = -\frac{\sqrt{3}}{2}$ $\quad\theta = \frac{4\pi}{3}, \frac{5\pi}{3}$

2) $\tan\theta = \sqrt{3}$ $\quad\theta = \frac{\pi}{3}, \frac{4\pi}{3}$

3) $\cos\theta = \frac{\sqrt{2}}{2}$ $\quad\theta = \frac{\pi}{4}, \frac{7\pi}{4}$

4) $\sin\theta = -\frac{1}{2}$ $\quad\theta = \frac{7\pi}{6}, \frac{11\pi}{6}$

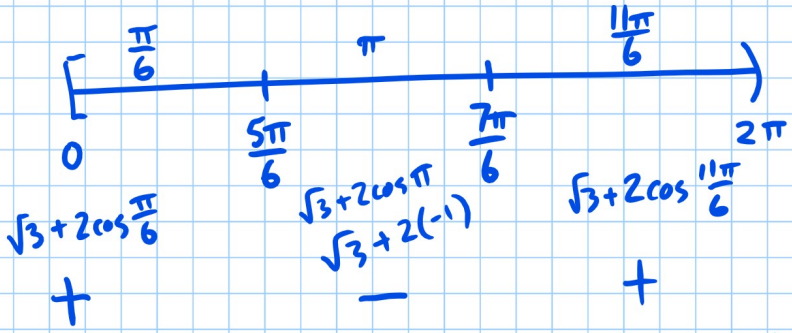
ex: Graph $y = \sqrt{3}x + 2\sin x$ on $[0, 2\pi)$

Ints: x-int (and y-int) $(0,0)$

Extrema: $y' = \sqrt{3} + 2\cos x = 0$

$2\cos x = -\sqrt{3}$

$\cos x = -\frac{\sqrt{3}}{2}$



rel. max @ $\left(\frac{5\pi}{6}, f\left(\frac{5\pi}{6}\right)\right) = \left(\frac{5\pi}{6}, 5.534\right)$

↳ calculator RADIAN MODE

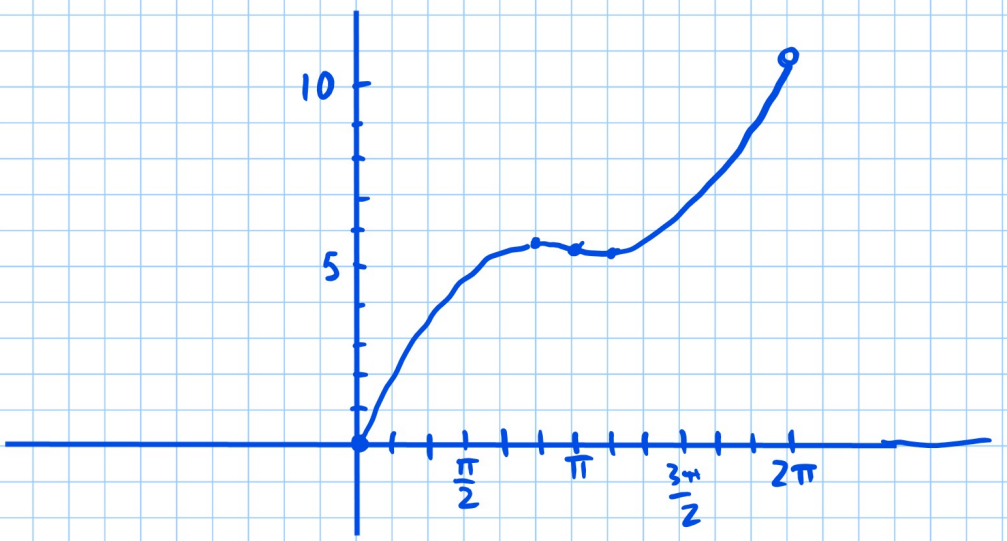
rel. min @ $\left(\frac{7\pi}{6}, f\left(\frac{7\pi}{6}\right)\right) = \left(\frac{7\pi}{6}, 5.348\right)$

IPs: $f''(x) = -2\sin x = 0$

$x = \pi$

$\frac{\pi}{2}$	π	$\frac{3\pi}{2}$
$-2\sin\frac{\pi}{2}$		$-2\sin\frac{3\pi}{2}$
$-$		$+$

IP @ $(\pi, f(\pi)) = (\pi, 5.441)$



Graph

1) $y = \frac{1}{2}x + \cos x$ on $[0, 2\pi)$

2) $f(x) = x^3 - 9x^2 - 21x + 189$