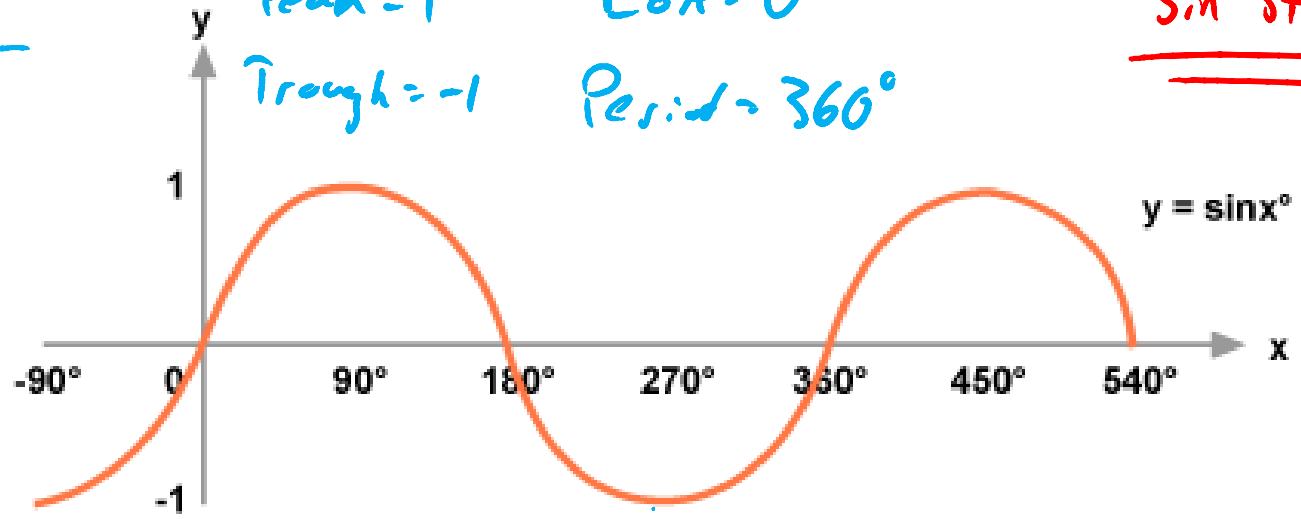
6.2-6.5: What do the graphs of: $f(\theta) =$ $\sin\theta$ and $f(\theta) =$ $\cos\theta$ look like?

x	y
0	0
90	1
180	0
270	-1
360	0

Peak = 1 EoA = 0

Trough = -1 Period = 360°

Sin starts at EoA

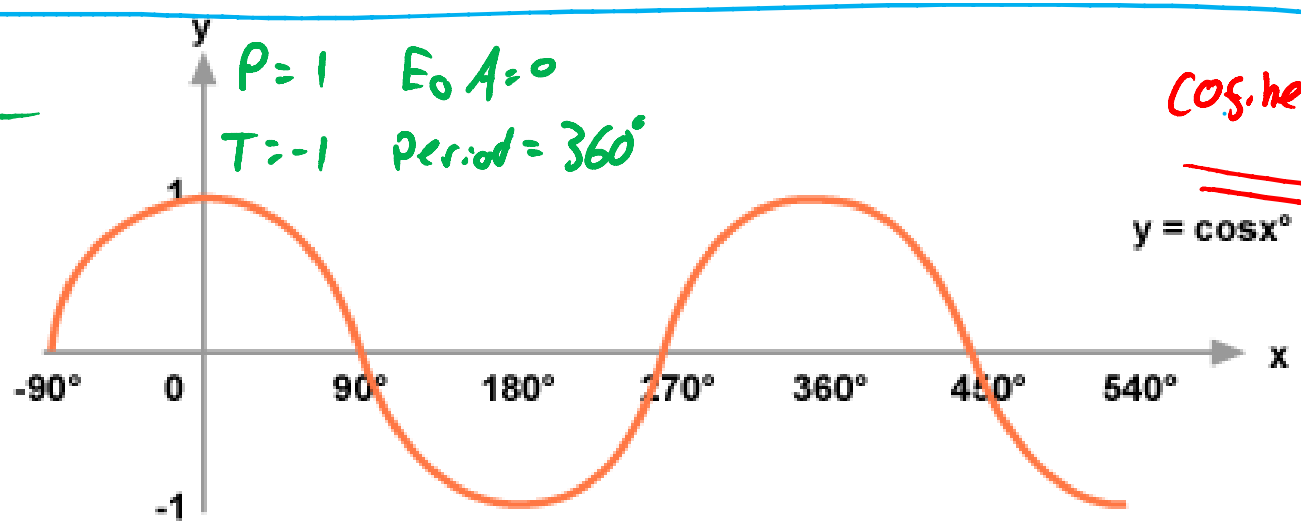


x	y
0	1
90	0
180	-1
270	0
360	1

P = 1 EoA = 0

T = -1 Period = 360°

Cosine starts at Peak.



Function	$f(x) = 3\sin(2x - 180) + 4$ $f(x) = a\sin(k(x-d)) + c$
Proper Function	$f(x) = 3\sin(2(x-90)) + 4$
Amplitude $\lvert a \rvert$	3
Period a cycle $\frac{360}{k}$	$\frac{360}{2} = 180$
Phase Shift Horizontal d	90
Equation of Axis c	4
Domain (2 cycles) starting at $x=0$	$0 \le x \le 360$
Range T to P	Peak: $4+3=7$ Trough: $4-3=1$ $1 \le y \le 7$

Peak = 7

Trough = 1

Period = 180

Phase = 90

Amp = 3

EoA = 4

① EoA

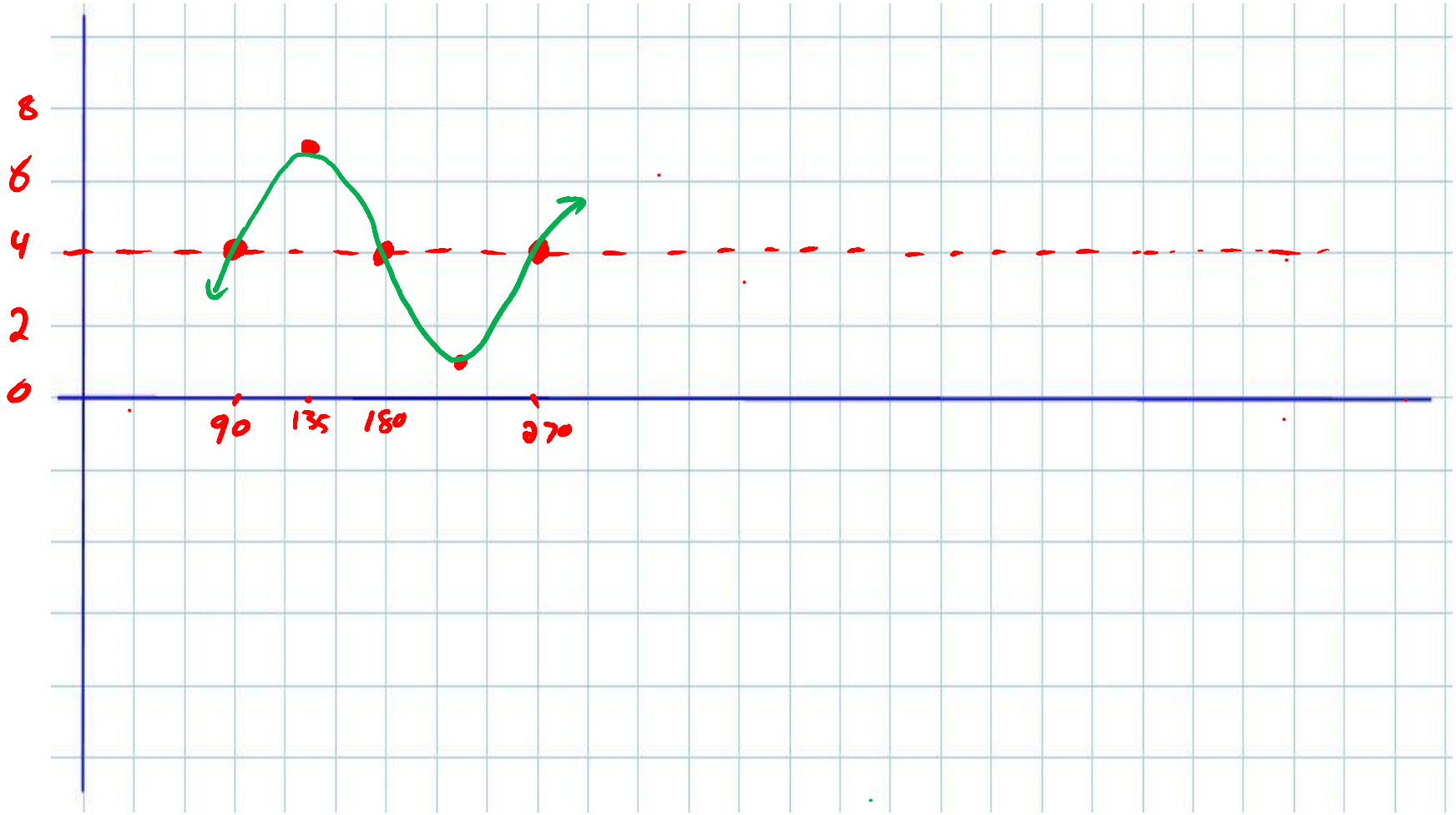
② Plot (90, 4)

③ End at 90 + 180 = 270.

④ EoA halfway

⑤ Peak in the middle

⑥ Trough in the middle



Function	$f(x) = -2\cos\left(\frac{1}{2}x - 60\right) - 3$
Proper Function	$f(x) = -2\cos\left(\frac{1}{2}(x - 120)\right) - 3$
Amplitude	$\lvert -2 \rvert = 2$
Period	$\frac{360}{\frac{1}{2}} = 720$
Phase Shift	120
Equation of Axis	$y = -3$
Domain (2 cycles)	$0 \leq x \leq 1440$
Range	Peak $= -3 + 2 = -1$ Trough $= -3 - 2 = -5$ $-5 \leq y \leq -1$

Peak: -1

Trough: -5

Period: 720

Phase: 120

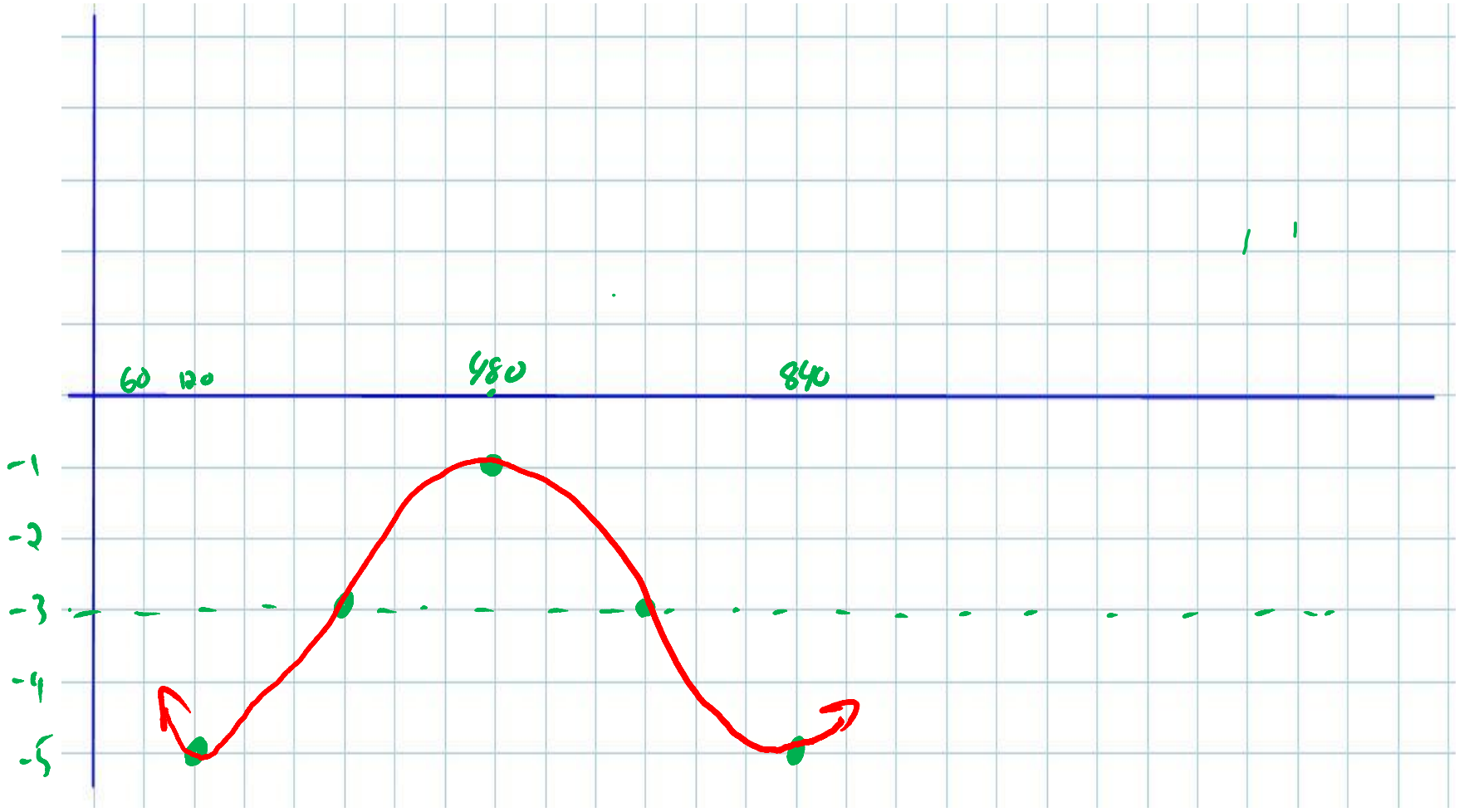
EoA: -3

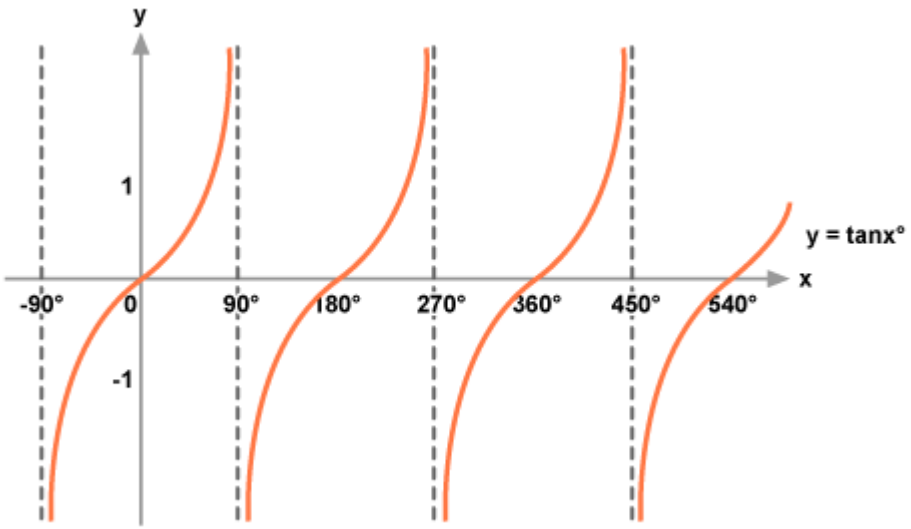
① (120, -5) Trough

② Next trough at 120+720

③ Peak in the middle

④ EoA in the middles of Peaks and Troughs




y
1
-1
x
y = tanx°
-90°
0
90°
180°
270°
360°
450°
540°