

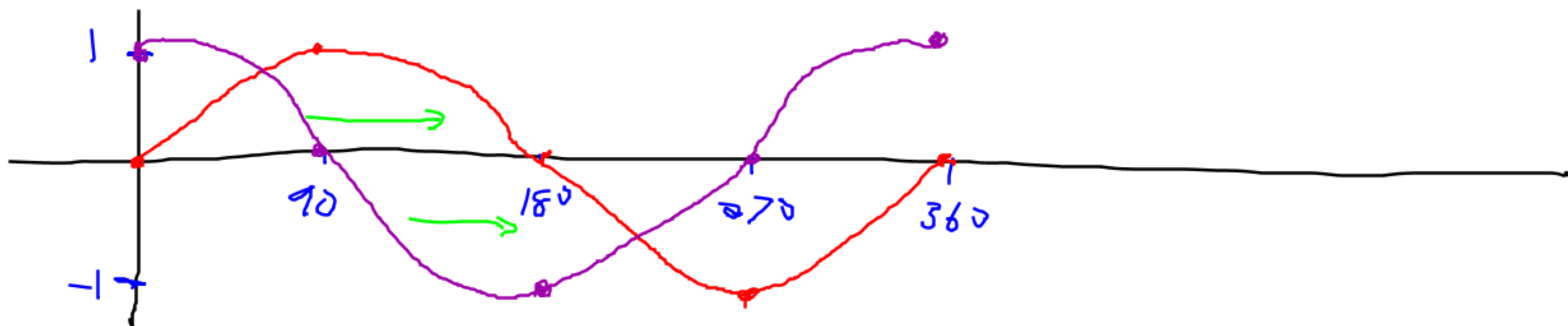
6.2-6.5 Sinusoidal Functions

$$f(x) = \sin(x)$$

x	f(x)
0	0
90	1
180	0
270	-1
360	0

$$g(x) = \cos(x) = \sin(x - 90)$$

x	g(x)
0	1 — peak
90	0
180	-1
270	0
360	1



$$f(x) = -\underset{a}{3} \sin\left(\underset{k}{2}(x + \underset{d}{45})\right) + \underset{c}{4}$$

① V. Str of -3

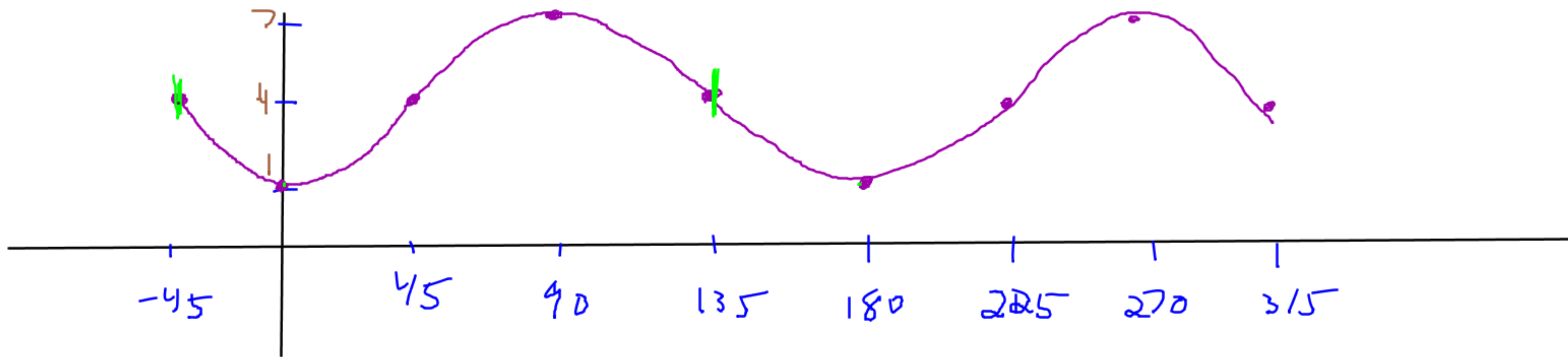
② H. Str of $\frac{1}{2}$

③ V. Sh of $+4$

④ H. Sh of -45

X	Y
0	0
90	1
180	0
270	-1
360	0

$\frac{1}{2}x - 45$	$-3y + 4$
-45	4
0	1
45	4
90	7
135	4



Peak = 7 Trough = 1

Eqn of axis: $y = \frac{7+1}{2} = 4 = c$

Amp: $7-4 = 3$
 $4-1 = 3 = |a|$

Period = 180

half of 360!

$= \frac{360}{|k|}$

Phase shift = d

$$f(x) = 2\cos(3(x - \underline{60})) - 5$$

Amp = 2, Eqn of axis: $y = -5$ Period: $\frac{360}{3} = 120$
(2) (1)

