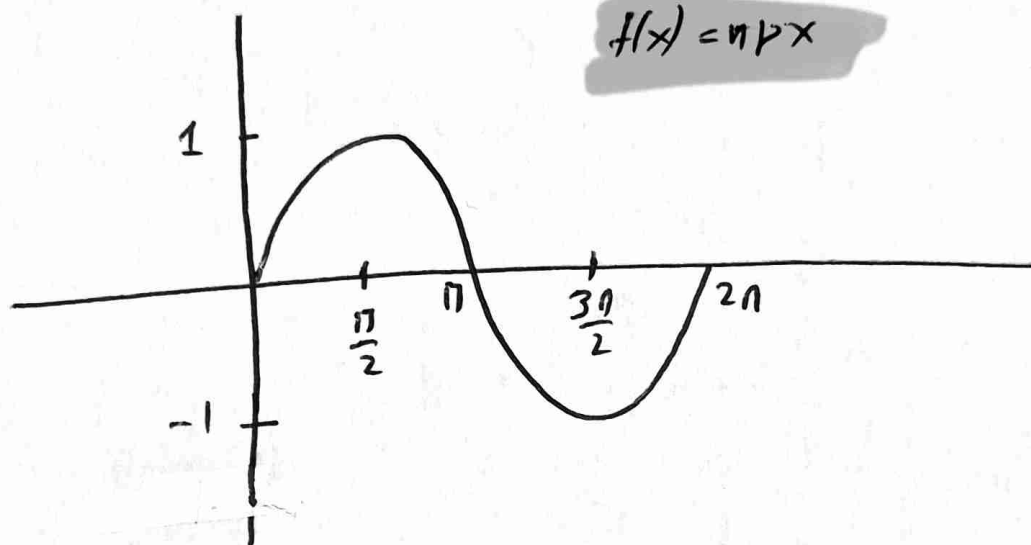
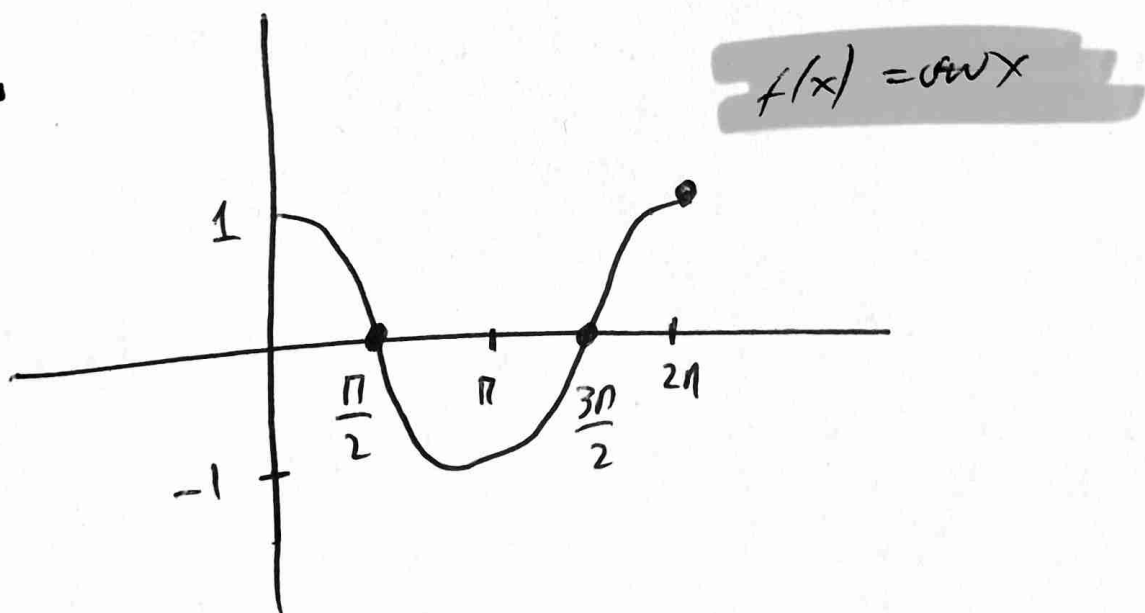


Τριγωνομετρικές Συναρτήσεις

1.



2.



Γαλκί ηπλτονοαδλ σναρτιση

$$f(x) = \rho \eta \rho \omega x + c$$

Γαλκί σονηπλτονοαδλ σναρτιση

$$f(x) = \rho \sigma \omega \omega x + c$$

Περλοδοs

$$T = \frac{2\pi}{\omega}$$

Μαχλσση
Τλρλ

$$M = |p| + c$$

Ελαχλσση
Τλρλ

$$m = -|p| + c$$

1. $f(x) = 3 \cos 2x - 4$.

$$\omega = 2 \quad p = 3 \quad c = -4$$

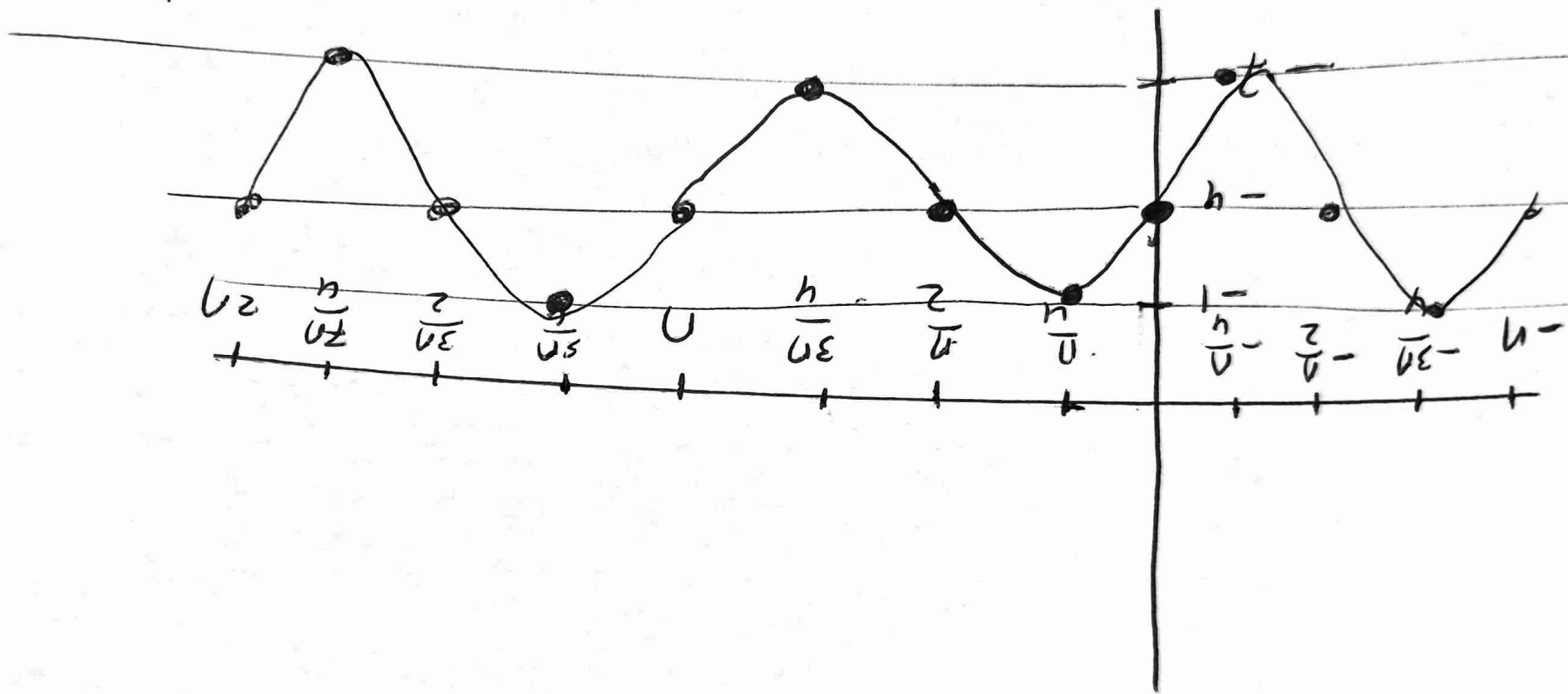
$$T = \frac{2\pi}{\omega} = \frac{2\pi}{2} = \pi$$

$$T = \pi$$

$$\text{Max} \equiv |p| + c = |3| - 4 = -1$$

$$\text{Min} \equiv -|p| + c = -|3| - 4 = -7$$

$2x$	0	$\frac{\pi}{2}$	π	$\frac{3\pi}{2}$	2π
x	0	$\frac{\pi}{4}$	$\frac{\pi}{2}$	$\frac{3\pi}{4}$	π
$\cos 2x$	0	1	0	-1	0
$3 \cos 2x$	0	3	0	-3	0
$f(x)$	-4	-1	-4	-7	-4



2.

$$f(x) = 2 - \sigma w \frac{\pi x}{2}$$

$$w = \frac{\pi}{2}$$

$$\rho = -1$$

$$c = 2$$

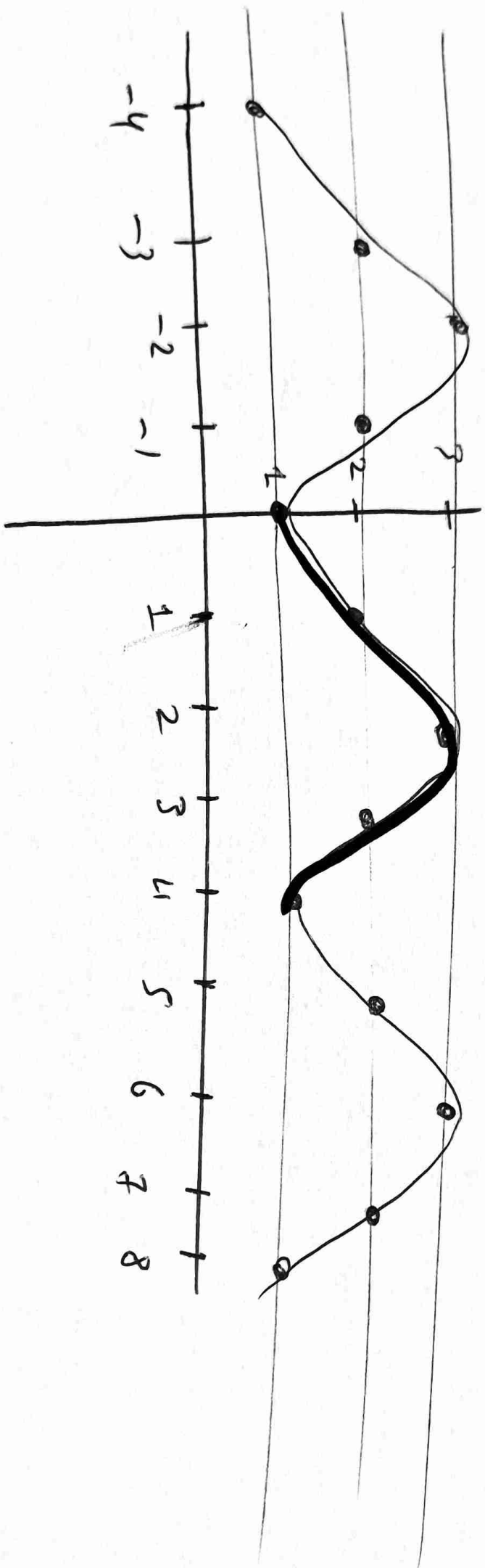
$$T = \frac{2\pi}{w} = \frac{2\pi}{\frac{\pi}{2}} = \frac{2\pi}{1} = \frac{4\pi}{\pi} = 4$$

$$\underline{\underline{T = 4}}$$

$$Max: |p| + c = |-1| + 2 = 3$$

$$Min: -|p| + c = -|-1| + 2 = 1$$

$\frac{\pi x}{2}$	0	$\frac{\pi}{2}$	π	$\frac{3\pi}{2}$	2π
x	0	1	2	3	4
$\sigma w \frac{\pi x}{2}$	1	0	-1	0	1
$-\sigma w \frac{\pi x}{2}$	-1	0	1	0	-1
f(x)	1	2	3	2	1



Евотута 12

19. $f(x) = a - 2 + (B - 1) \sigma w / (r \pi x)$

$$a < 2 \quad B > 1 \quad r > 0.$$

$$T = \frac{1}{3}$$

$$\min = -14$$

$$A\left(\frac{1}{18}, 1\right)$$



$$T = \frac{2n}{w}$$

$$\frac{1}{3} = \frac{2n}{r \pi}$$

$$\Rightarrow r = 6$$

$$\min = -|p| + C$$

$$-14 = -|B-1| + a-2$$

$$-14 = -(B-1) + a-2$$

$$-14 = -B + 1 + a - 2$$

$$\boxed{a - B = -13}$$

$$H\left(\frac{1}{18}\right) = 1$$

$$a - 2 + (B - 1) \cdot \sin\left(6 \cdot \pi \frac{1}{18}\right) = 1$$

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

$$a - 2 + (B - 1) \cdot \frac{1}{2} = 1$$

$$2a - 4 + B - 1 = 2$$

$$2a + B = 7$$

$$\begin{cases} a - B = -13 \\ 2a + B = 7 \end{cases} \quad (+) \quad 3a = -6$$

$$a = -2$$

$$B = 11$$

20.

$$S = 50 + 20 \ln \frac{t}{3}$$

↓
normal

$\frac{t=1}{\text{normal}}.$

$$\text{Max } |p| + c = |20| + 50 = \underline{\underline{70}}$$

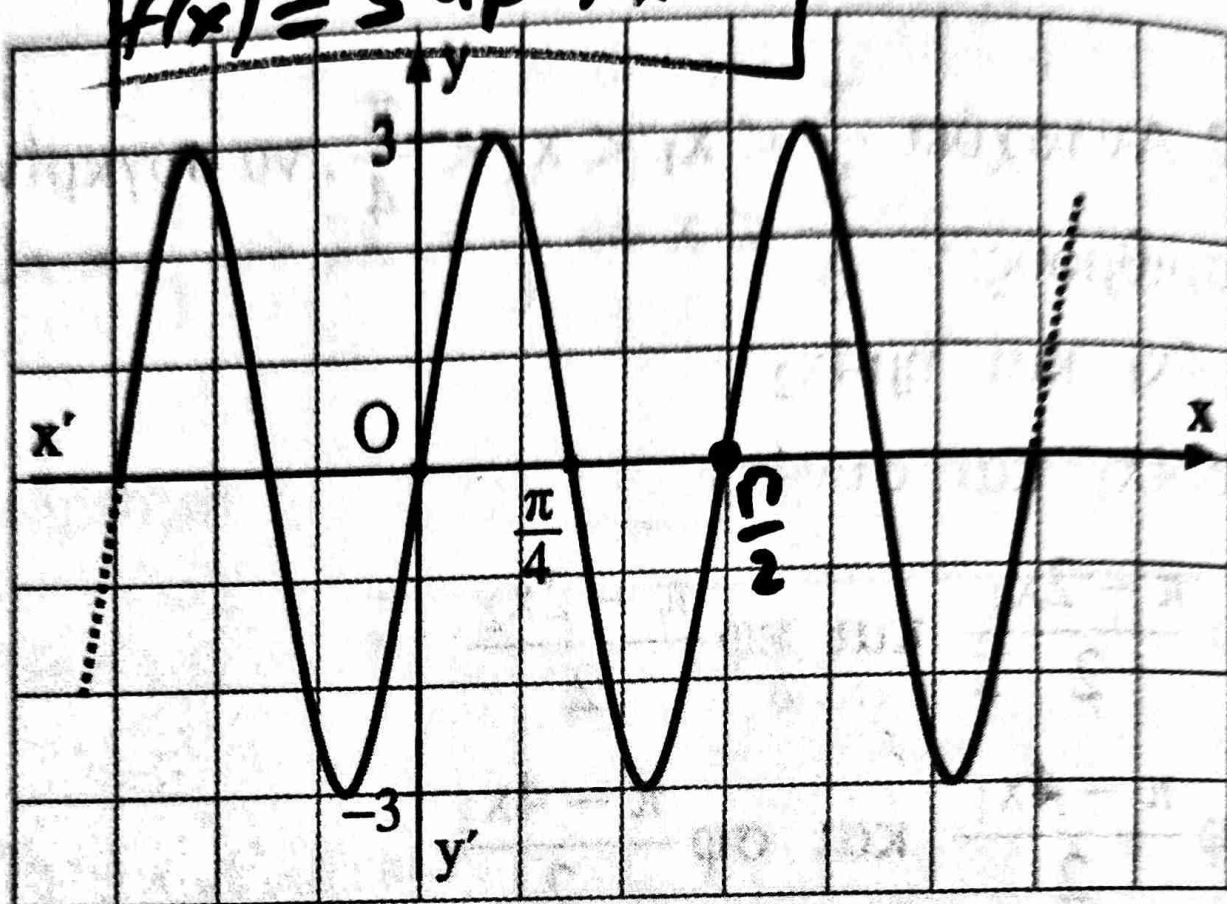
$$\text{Min } -|p| + c = -|20| + 50 = \underline{\underline{30}}$$

40

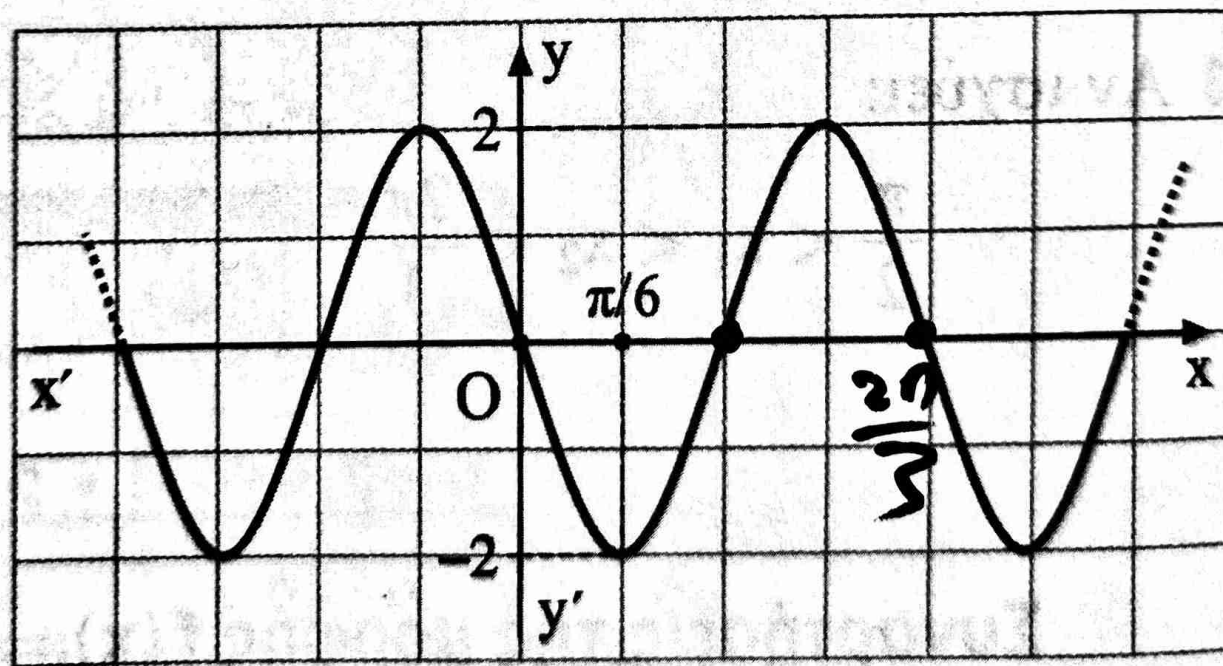
$$T = \frac{2\pi}{\omega} \quad (=) \quad \frac{\pi}{2} = \frac{2\pi}{\omega} \quad \Rightarrow \quad \underline{\omega = 4}$$

$$f(x) = 3 \sin 4x$$

a)



b)



$$T = \frac{2\pi}{\omega} \Rightarrow \frac{2\pi}{3} = \frac{2\pi}{\omega} \quad (=) \quad \underline{\underline{\omega = 3}}$$

$$f(x) = -2 \sin 3x$$

Енорс Мадина

12.

(17)

(18)

(11)

(12)

(13).