

	περί οδός	μέγι στο	ελάχι στο	θέση μεγίστου	θέση ελαχίστου	γνησίως αύξουσα	γνησίως φθίνουσα
1 $f(x) = \sin x$	2π	1	-1	0, 2π	π	$[\pi, 2\pi]$	$[0, \pi]$
2 $f(x) = \sin x + 4$	2π	5	3	0, 2π	π	$[\pi, 2\pi]$	$[0, \pi]$
3 $f(x) = \sin x - 5$	2π	-4	-6	0, 2π	π	$[\pi, 2\pi]$	$[0, \pi]$
4 $f(x) = \sin x + 9$	2π	10	8	0, 2π	π	$[\pi, 2\pi]$	$[0, \pi]$
5 $f(x) = \sin x - 8$	2π	-7	-9	0, 2π	π	$[\pi, 2\pi]$	$[0, \pi]$
6 $f(x) = \sin x + \alpha$	2π	$\alpha+1$	$\alpha-1$	0, 2π	π	$[\pi, 2\pi]$	$[0, \pi]$
7 $f(x) = -\sin x$	2π	1	-1	π	0, 2π	$[0, \pi]$	$[\pi, 2\pi]$
8 $f(x) = -\sin x + 6$	2π	7	5	π	0, 2π	$[0, \pi]$	$[\pi, 2\pi]$
9 $f(x) = -\sin x - 2$	2π	-1	-3	π	0, 2π	$[0, \pi]$	$[\pi, 2\pi]$
10 $f(x) = -\sin x + 5$	2π	6	4	π	0, 2π	$[0, \pi]$	$[\pi, 2\pi]$
11 $f(x) = -\sin x - 1$	2π	0	-2	π	0, 2π	$[0, \pi]$	$[\pi, 2\pi]$
12 $f(x) = -\sin x + \alpha$	2π	$\alpha+1$	$\alpha-1$	π	0, 2π	$[0, \pi]$	$[\pi, 2\pi]$
13 $f(x) = 3\sin x$	2π	3	-3	0, 2π	π	$[\pi, 2\pi]$	$[0, \pi]$
14 $f(x) = 4\sin x$	2π	4	-4	0, 2π	π	$[\pi, 2\pi]$	$[0, \pi]$
15 $f(x) = 9\sin x$	2π	9	-9	0, 2π	π	$[\pi, 2\pi]$	$[0, \pi]$
16 $f(x) = 7\sin x$	2π	7	-7	0, 2π	π	$[\pi, 2\pi]$	$[0, \pi]$
17 $f(x) = \alpha\sin x$	2π	α	$-\alpha$	0, 2π	π	$[\pi, 2\pi]$	$[0, \pi]$
18 $f(x) = -6\sin x$	2π	6	-6	π	0, 2π	$[0, \pi]$	$[\pi, 2\pi]$
19 $f(x) = -2\sin x$	2π	2	-2	π	0, 2π	$[0, \pi]$	$[\pi, 2\pi]$
20 $f(x) = -3\sin x$	2π	3	-3	π	0, 2π	$[0, \pi]$	$[\pi, 2\pi]$
21 $f(x) = -5\sin x$	2π	5	-5	π	0, 2π	$[0, \pi]$	$[\pi, 2\pi]$
22 $f(x) = -\alpha\sin x$	2π	$\alpha+1$	$\alpha-1$	π	0, 2π	$[0, \pi]$	$[\pi, 2\pi]$
23 $f(x) = 4\sin x + 8$	2π	12	4	0, 2π	π	$[\pi, 2\pi]$	$[0, \pi]$
24 $f(x) = 3\sin x - 5$	2π	-2	-8	0, 2π	π	$[\pi, 2\pi]$	$[0, \pi]$
25 $f(x) = 6\sin x + 1$	2π	7	-5	0, 2π	π	$[\pi, 2\pi]$	$[0, \pi]$
26 $f(x) = 2\sin x - 7$	2π	-5	-9	0, 2π	π	$[\pi, 2\pi]$	$[0, \pi]$
27 $f(x) = -7\sin x + 2$	2π	9	-5	π	0, 2π	$[0, \pi]$	$[\pi, 2\pi]$
28 $f(x) = -4\sin x - 3$	2π	1	-7	π	0, 2π	$[0, \pi]$	$[\pi, 2\pi]$
29 $f(x) = -9\sin x + 4$	2π	13	-5	π	0, 2π	$[0, \pi]$	$[\pi, 2\pi]$
30 $f(x) = -6\sin x + 5$	2π	11	-1	π	0, 2π	$[0, \pi]$	$[\pi, 2\pi]$

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31 $f(x) = \alpha \sin x + \beta$	2π	$\beta + \alpha$	$\beta - \alpha$	$0, 2\pi$	π	$[\pi, 2\pi]$	$[0, \pi]$
32 $f(x) = -\alpha \sin x + \beta$	2π	$\beta + \alpha$	$\beta - \alpha$	π	$0, 2\pi$	$[0, \pi]$	$[\pi, 2\pi]$
34 $f(x) = \sin 3x$	$\frac{2\pi}{3}$	1	-1	$0, 2\pi$	$\frac{\pi}{3}$	$[\frac{\pi}{3}, \frac{2\pi}{3}]$	$[0, \frac{\pi}{3}]$
35 $f(x) = \sin \frac{1}{4}x$	8π	1	-1	$0, 8\pi$	4π	$[4\pi, 8\pi]$	$[0, 4\pi]$
36 $f(x) = \sin 2x$	π	1	-1	$0, \pi$	$\frac{\pi}{2}$	$[\frac{\pi}{2}, \pi]$	$[0, \frac{\pi}{2}]$
37 $f(x) = \sin \frac{5}{2}x$	$\frac{4\pi}{5}$	1	-1	$0, \frac{4\pi}{5}$	$\frac{2\pi}{5}$	$[\frac{2\pi}{5}, \frac{4\pi}{5}]$	$[0, \frac{2\pi}{5}]$
38 $f(x) = \sin \alpha x$	$\frac{2\pi}{\alpha}$	1	-1	$0, \frac{2\pi}{\alpha}$	$\frac{\pi}{\alpha}$	$[\frac{\pi}{\alpha}, \frac{2\pi}{\alpha}]$	$[0, \frac{\pi}{\alpha}]$
39 $f(x) = \sin 4x + 2$	$\frac{\pi}{2}$	3	1	$0, \frac{\pi}{2}$	$\frac{\pi}{4}$	$[\frac{\pi}{4}, \frac{\pi}{2}]$	$[0, \frac{\pi}{4}]$
40 $f(x) = \sin \frac{1}{3}x - 9$	6π	-8	-10	$0, 6\pi$	3π	$[3\pi, 6\pi]$	$[0, 3\pi]$
33 $f(x) = \sin \frac{2}{3}x + 6$	3π	7	5	$0, 3\pi$	$\frac{3\pi}{2}$	$[\frac{3\pi}{2}, 3\pi]$	$[0, \frac{3\pi}{2}]$
41 $f(x) = \sin 5x - 1$	$\frac{2\pi}{5}$	0	-2	$0, \frac{2\pi}{5}$	$\frac{\pi}{5}$	$[\frac{\pi}{5}, \frac{2\pi}{5}]$	$[0, \frac{\pi}{5}]$
42 $f(x) = \sin \alpha x + \beta$	$\frac{2\pi}{\alpha}$	$\beta + 1$	$\beta - 1$	$0, \frac{2\pi}{\alpha}$	$\frac{\pi}{\alpha}$	$[\frac{\pi}{\alpha}, \frac{2\pi}{\alpha}]$	$[0, \frac{\pi}{\alpha}]$
43 $f(x) = 8 \sin \frac{1}{6}x$	12π	8	-8	$0, 12\pi$	6π	$[6\pi, 12\pi]$	$[0, 6\pi]$
44 $f(x) = -3 \sin 7x$	$\frac{2\pi}{7}$	3	-3	$\frac{\pi}{7}$	$0, \frac{2\pi}{7}$	$[0, \frac{\pi}{7}]$	$[\frac{\pi}{7}, \frac{2\pi}{7}]$
45 $f(x) = -5 \sin \frac{3}{4}x$	$\frac{8\pi}{3}$	5	-5	$\frac{4\pi}{3}$	$0, \frac{8\pi}{3}$	$[0, \frac{4\pi}{3}]$	$[\frac{4\pi}{3}, \frac{8\pi}{3}]$
46 $f(x) = 7 \sin 2x$	π	7	-7	$0, \pi$	$\frac{\pi}{2}$	$[\frac{\pi}{2}, \pi]$	$[0, \frac{\pi}{2}]$
47 $f(x) = \alpha \sin \beta x$	$\frac{2\pi}{\beta}$	α	$-\alpha$	$0, \frac{2\pi}{\beta}$	$\frac{\pi}{\beta}$	$[\frac{\pi}{\beta}, \frac{2\pi}{\beta}]$	$[0, \frac{\pi}{\beta}]$
48 $f(x) = -\alpha \sin \beta x$	2π	α	$-\alpha$	π	$0, 2\pi$	$[0, \pi]$	$[\pi, 2\pi]$
49 $f(x) = 3 \sin 4x + 5$	$\frac{\pi}{2}$	8	2	$0, \frac{\pi}{2}$	$\frac{\pi}{4}$	$[\frac{\pi}{4}, \frac{\pi}{2}]$	$[0, \frac{\pi}{4}]$
50 $f(x) = -2 \sin 3x + 1$	$\frac{2\pi}{3}$	3	-1	$\frac{\pi}{3}$	$0, \frac{2\pi}{3}$	$[0, \frac{\pi}{3}]$	$[\frac{\pi}{3}, \frac{2\pi}{3}]$

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51 $f(x) = 4\sin 2x - 5$	π	-1	-9	0, π	$\frac{\pi}{2}$	$\left[\frac{\pi}{2}, \pi\right]$	$\left[0, \frac{\pi}{2}\right]$
52 $f(x) = 5\sin \frac{1}{4}x + 3$	8π	8	-2	0, 8π	4π	$[4\pi, 8\pi]$	$[0, 4\pi]$
53 $f(x) = -\sin \frac{2}{5}x - 3$	5π	-2	-4	$\frac{5\pi}{2}$	0, 5π	$\left[0, \frac{5\pi}{2}\right]$	$\left[\frac{5\pi}{2}, 5\pi\right]$
54 $f(x) = -3\sin 5x - 1$	$\frac{2\pi}{5}$	2	-4	$\frac{\pi}{5}$	0, $\frac{2\pi}{5}$	$\left[0, \frac{\pi}{5}\right]$	$\left[\frac{\pi}{5}, \frac{2\pi}{5}\right]$
55 $f(x) = 8\sin \frac{3}{7}x + 2$	$\frac{14\pi}{3}$	10	-6	0, $\frac{14\pi}{3}$	$\frac{7\pi}{3}$	$\left[\frac{7\pi}{3}, \frac{14\pi}{3}\right]$	$\left[0, \frac{7\pi}{3}\right]$
56 $f(x) = \alpha \sin \beta x + \gamma$	$\frac{2\pi}{\beta}$	$\gamma + \alpha$	$\gamma - \alpha$	0, $\frac{2\pi}{\beta}$	$\frac{\pi}{\beta}$	$\left[\frac{\pi}{\beta}, \frac{2\pi}{\beta}\right]$	$\left[0, \frac{\pi}{\beta}\right]$
57 $f(x) = -\alpha \sin \beta x + \gamma$	2π	$\gamma + \alpha$	$\gamma - \alpha$	π	0, 2π	$[0, \pi]$	$[\pi, 2\pi]$