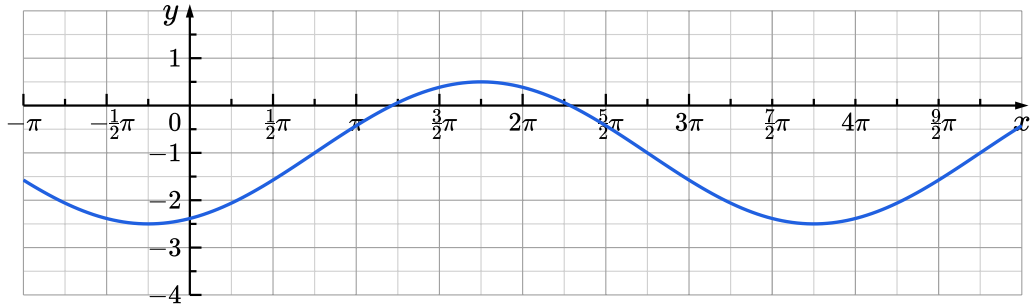
Allgemeine Sinus und Cosinusfunktion

Aufgabe

Stellen Sie anhand des Graphen die Funktionsgleichung auf:

a)



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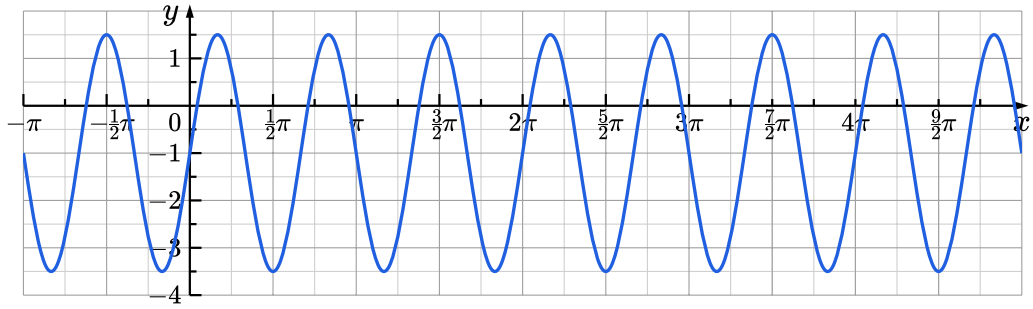

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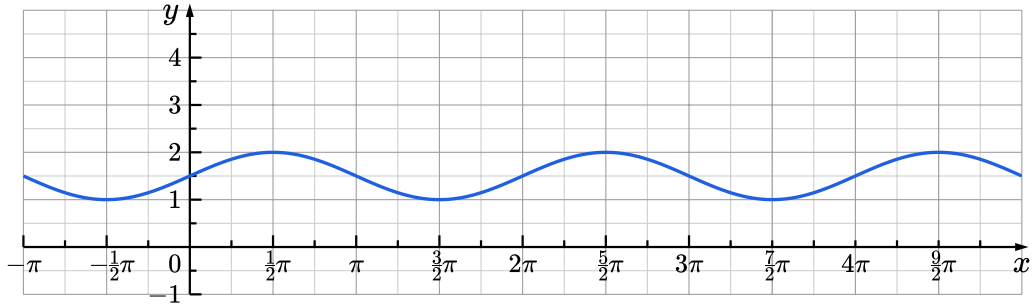

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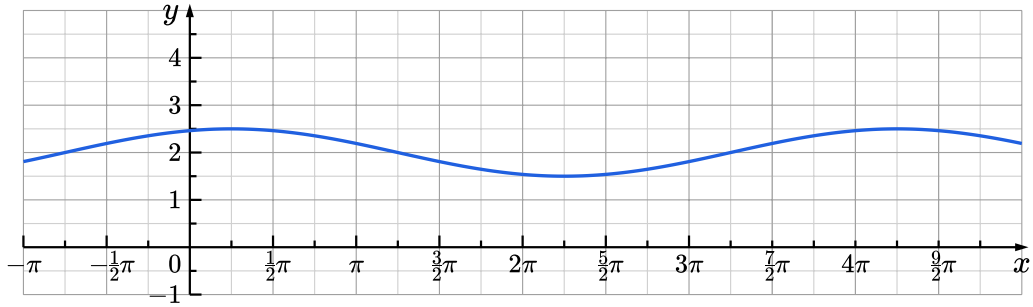

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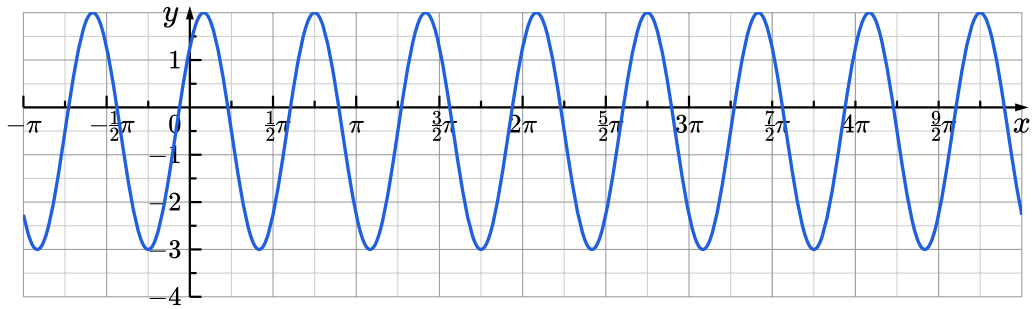

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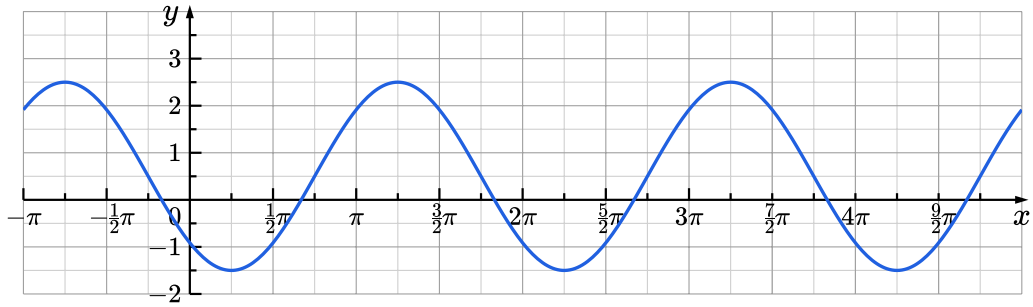

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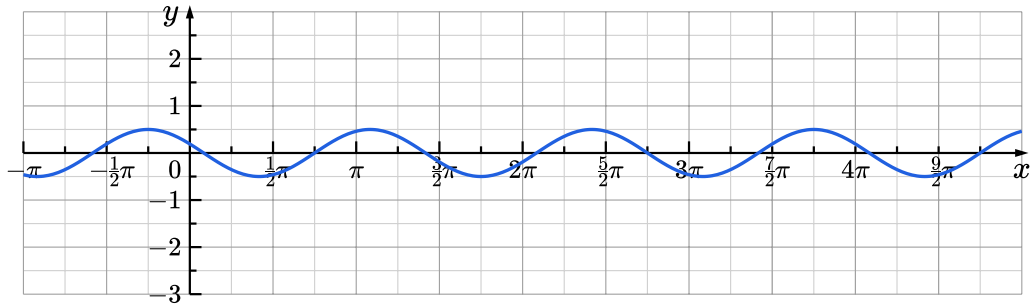

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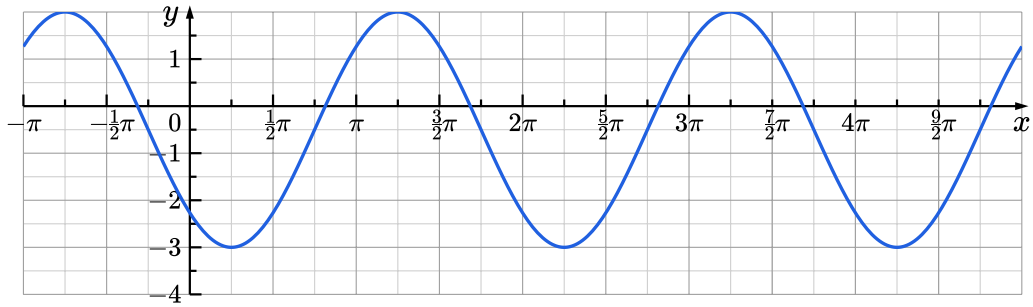

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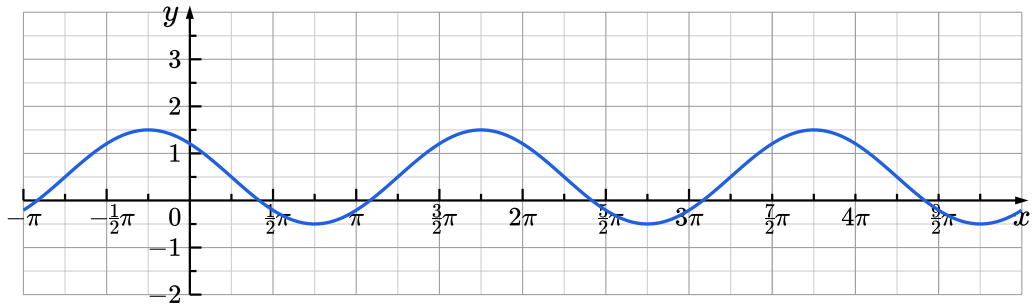

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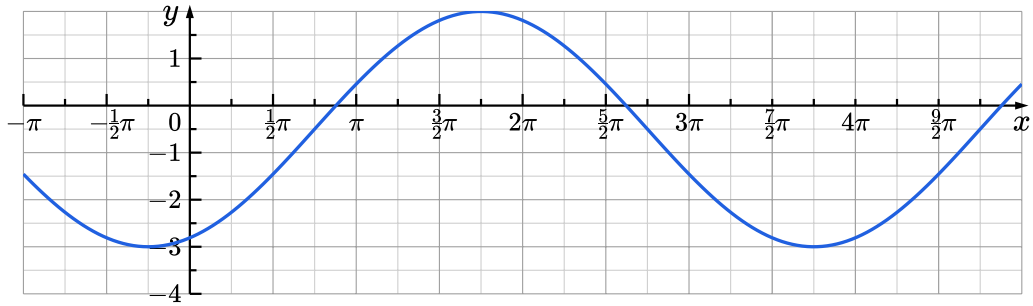

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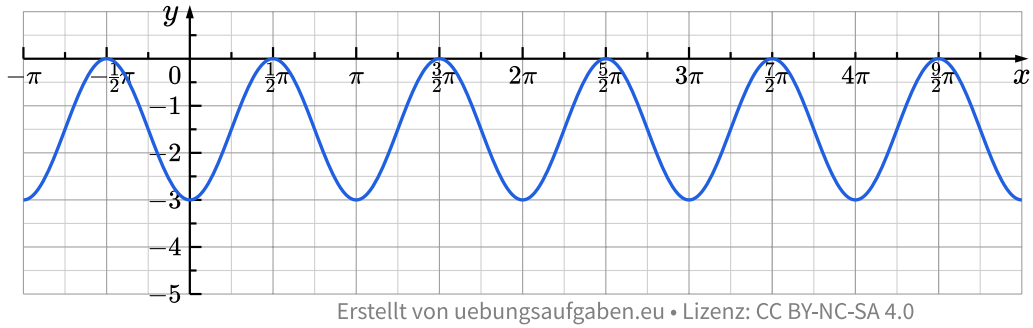

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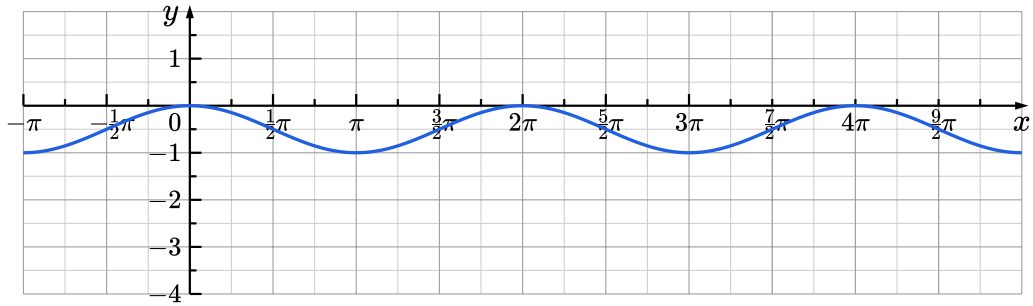
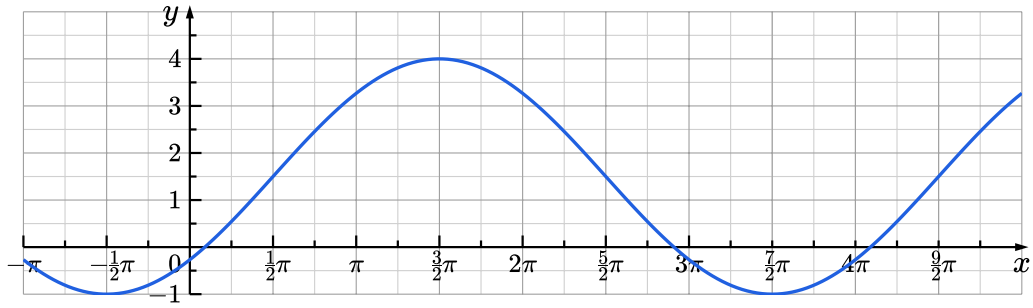


m)



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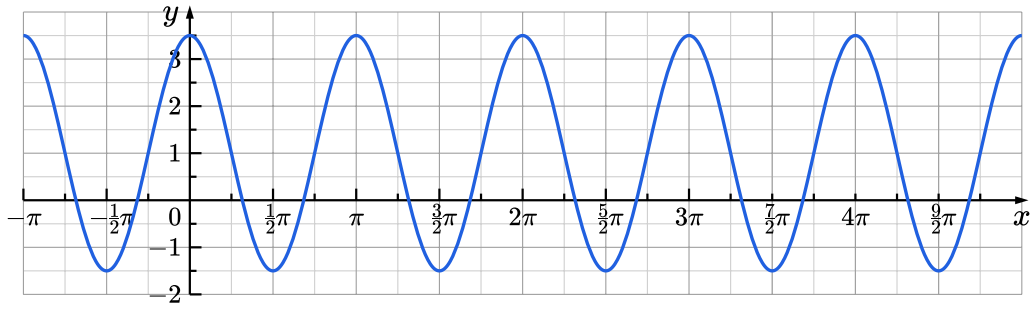
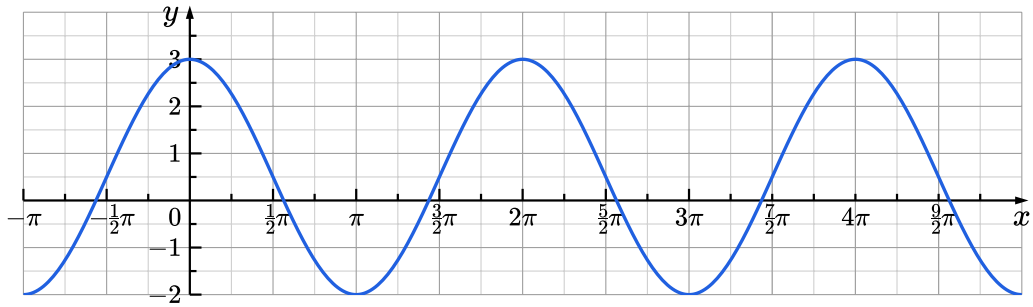


o)



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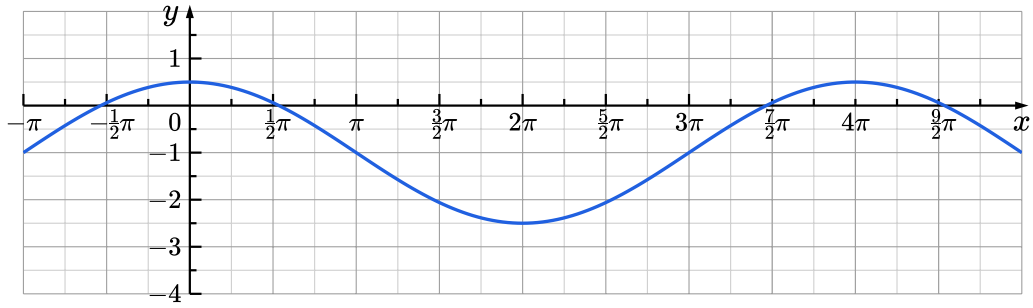
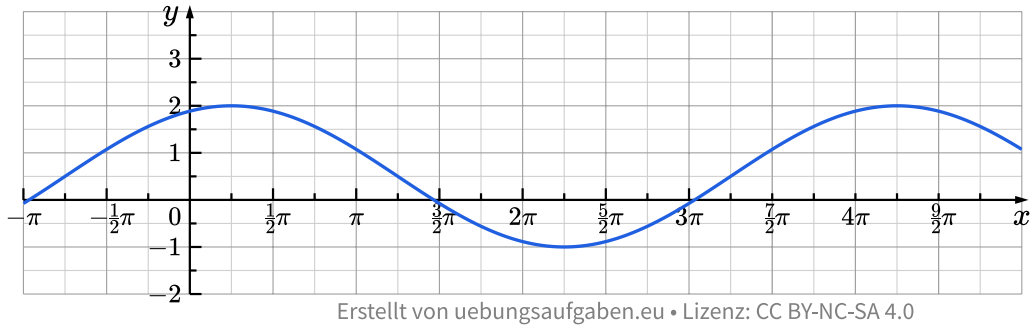
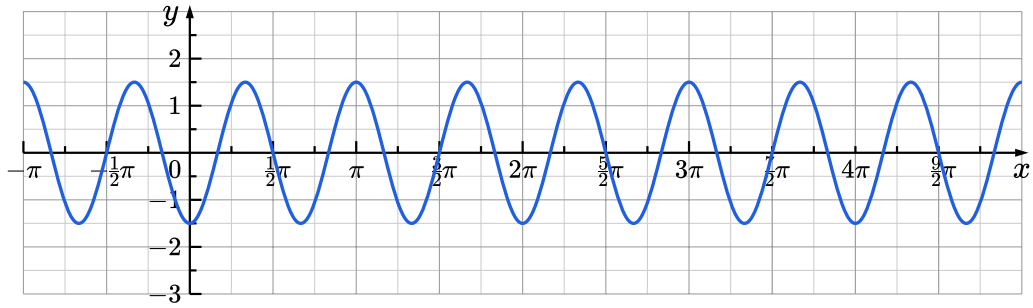


q)



r)



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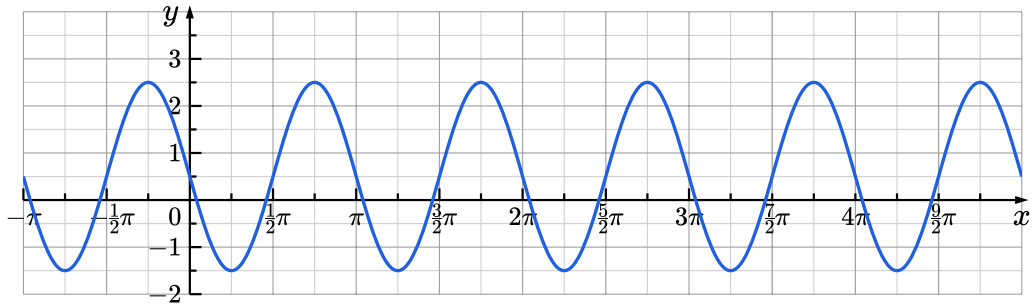

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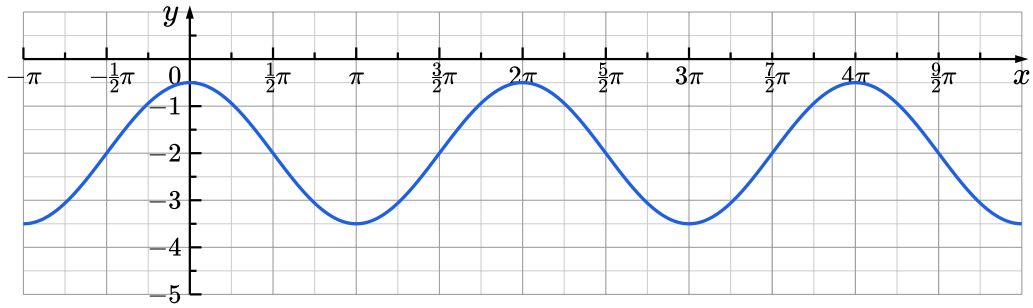

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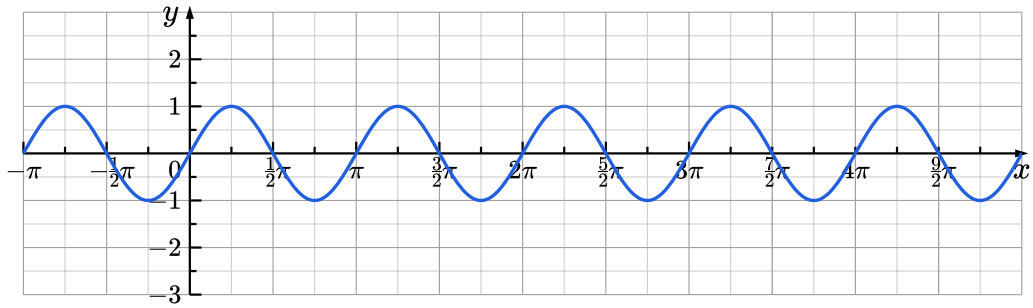

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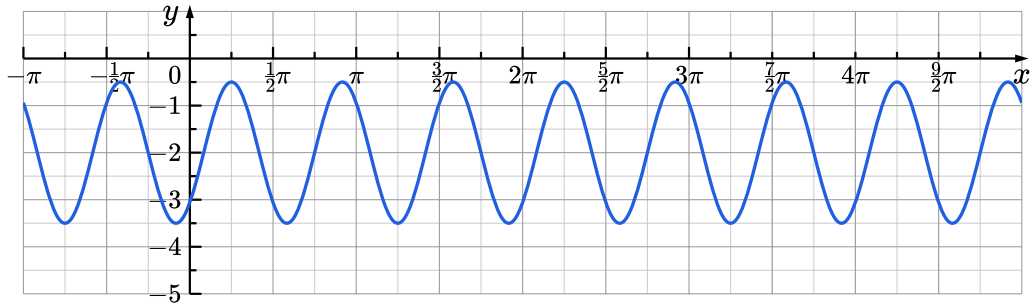

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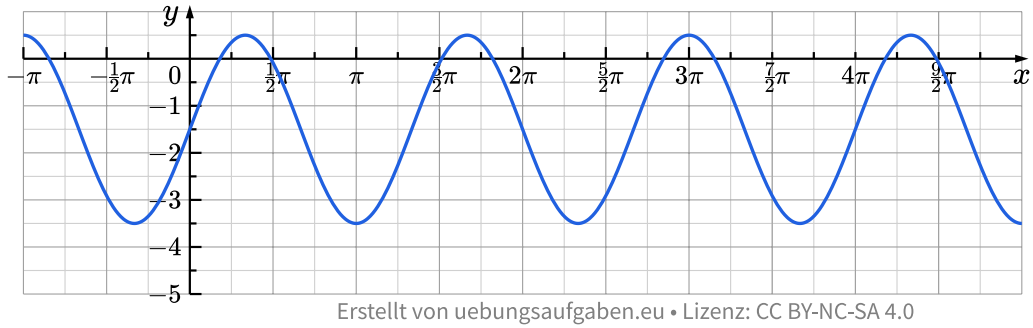
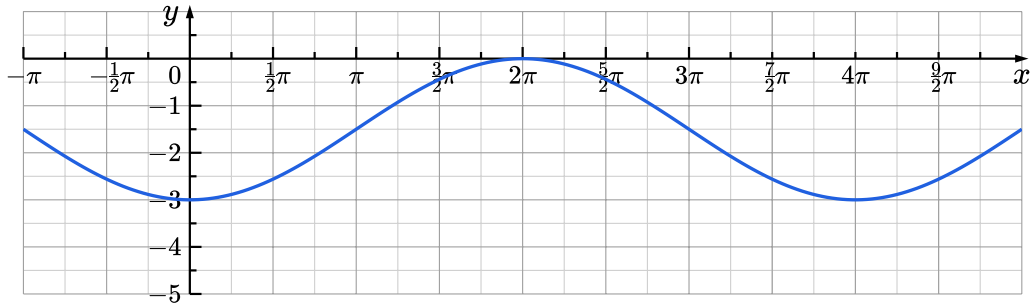
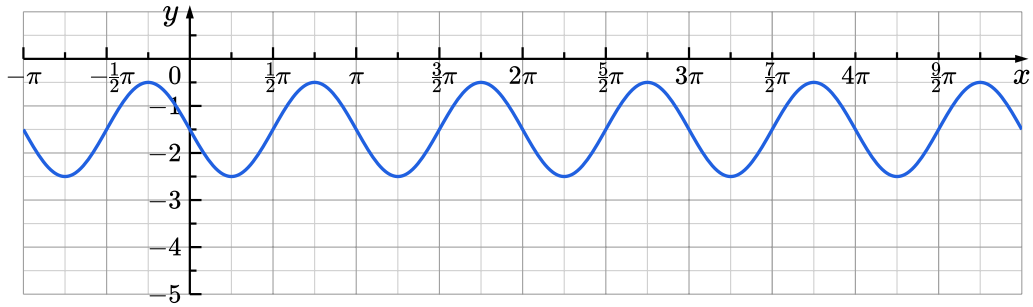


x)



y)



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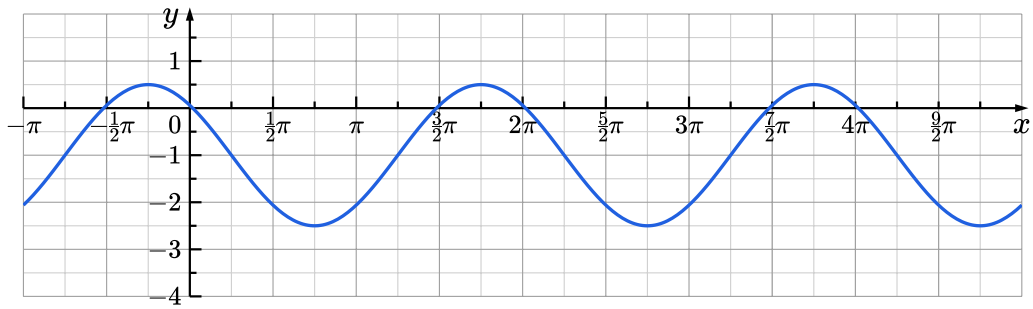

Lösung

a) $f(x) = \frac{3}{2}\sin\left(\frac{1}{2}\left(x - \frac{3}{4}\pi\right)\right) - 1$

b) $f(x) = \frac{5}{2}\sin(3\,x) - 1$

c) $f(x) = \frac{1}{2}\sin(x) + \frac{3}{2}$

d) $f(x) = \frac{1}{2}\sin\left(\frac{1}{2}\left(x + \frac{3}{4}\pi\right)\right) + 2$

e) $f(x) = \frac{5}{2}\sin\left(3\,\left(x + \frac{3}{4}\pi\right)\right) - \frac{1}{2}$

f) $f(x) = 2\sin\left(x - \frac{3}{4}\pi\right) + \frac{1}{2}$

g) $f(x) = \frac{1}{2}\sin\left(\frac{3}{2}\left(x - \frac{3}{4}\pi\right)\right)$

h) $f(x) = \frac{5}{2}\sin\left(x - \frac{3}{4}\pi\right) - \frac{1}{2}$

i) $f(x) = \sin\left(x + \frac{3}{4}\pi\right) + \frac{1}{2}$

j) $f(x) = \frac{5}{2}\sin\left(\frac{1}{2}\left(x - \frac{3}{4}\pi\right)\right) - \frac{1}{2}$

k) $f(x) = \frac{3}{2}\sin\left(2\,\left(x + \frac{3}{4}\pi\right)\right) - \frac{3}{2}$

l) $f(x) = \frac{1}{2}\sin\left(x + \frac{1}{2}\pi\right) - \frac{1}{2}$

m) $f(x) = \frac{5}{2}\sin\left(\frac{1}{2}\left(x - \frac{1}{2}\pi\right)\right) + \frac{3}{2}$

n) $f(x) = \frac{5}{2}\sin\left(2\,\left(x - \frac{3}{4}\pi\right)\right) + 1$

o) $f(x) = \frac{5}{2}\sin\left(x + \frac{1}{2}\pi\right) + \frac{1}{2}$

p) $f(x) = \frac{3}{2}\sin\left(\frac{1}{2}\left(x + \pi\right)\right) - 1$

q) $f(x) = \frac{3}{2}\sin\left(\frac{1}{2}\left(x + \frac{3}{4}\pi\right)\right) + \frac{1}{2}$

r) $f(x) = \frac{3}{2}\sin\left(3\,\left(x + \frac{1}{2}\pi\right)\right)$

s) $f(x) = 2\sin\left(2\,\left(x + \frac{1}{2}\pi\right)\right) + \frac{1}{2}$

t) $f(x) = \frac{3}{2}\sin\left(x + \frac{1}{2}\pi\right) - 2$

u) $f(x) = \sin(2\,x)$

v) $f(x) = \frac{3}{2}\sin\left(3\,\left(x - \frac{3}{4}\pi\right)\right) - 2$

w) $f(x) = 2\sin\left(\frac{3}{2}\,x\right) - \frac{3}{2}$

x) $f(x) = \frac{3}{2}\sin\left(\frac{1}{2}\left(x - \pi\right)\right) - \frac{3}{2}$

y) $f(x) = \sin\left(2\,\left(x + \frac{1}{2}\pi\right)\right) - \frac{3}{2}$

z) $f(x) = \frac{3}{2}\sin\left(x + \frac{3}{4}\pi\right) - 1$