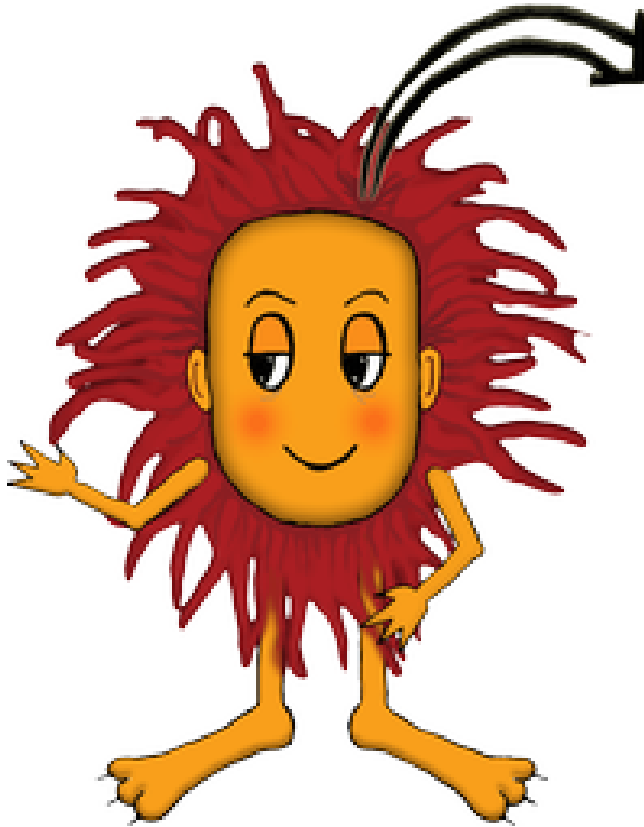


Velika logična pošast

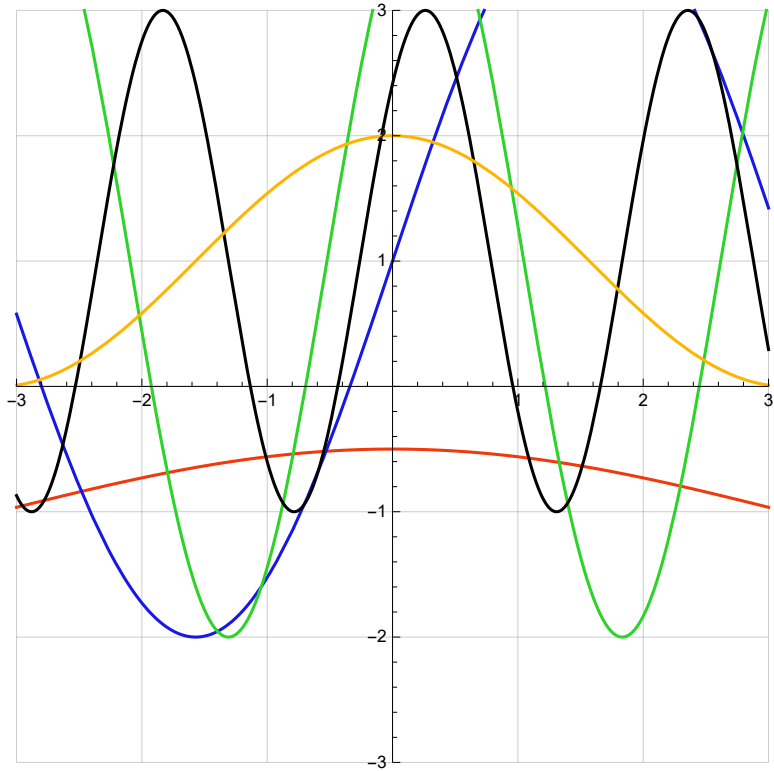


Grafi splošne sinusne funkcije

Za vsako sinusno funkcijo poišči
barvo njenega grafa.

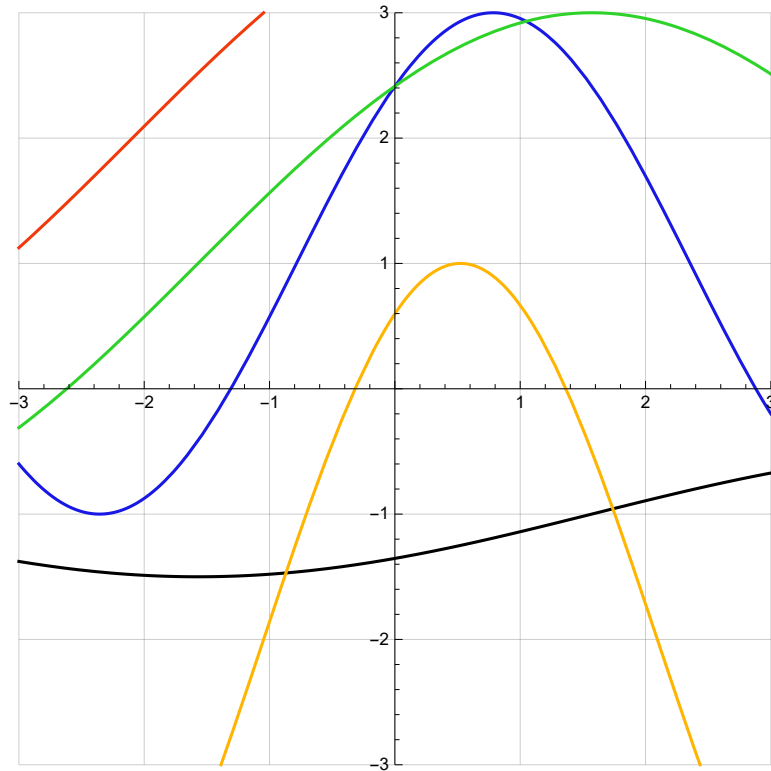
1.

- $\cos(x) + 1$
- $3 \cos\left(\frac{\pi}{6} - 2x\right) + 1$
- $3 \sin(x) + 1$
- $2 \sin\left(3x + \frac{\pi}{4}\right) + 1$
- $\frac{1}{2} \cos\left(\frac{x}{2}\right) - 1$



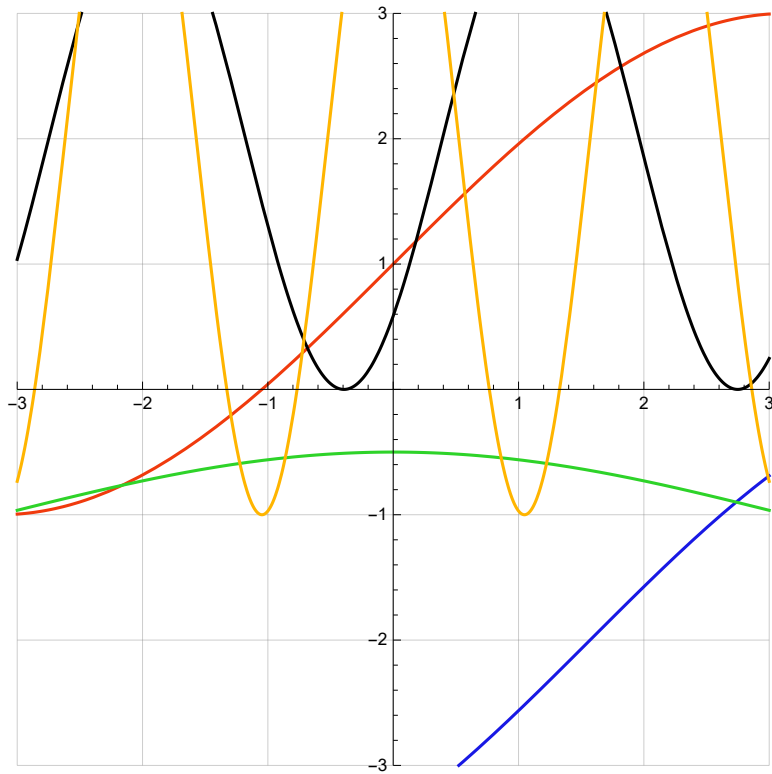
2.

- $-\frac{1}{2} \sin\left(\frac{\pi}{4} - \frac{x}{2}\right) - 1$
- $3 \cos\left(\frac{\pi}{6} - x\right) - 2$
- $2 \sin\left(\frac{x}{2} + \frac{\pi}{4}\right) + 1$
- $2 \cos\left(\frac{\pi}{6} - \frac{x}{2}\right) + 2$
- $2 \sin\left(x + \frac{\pi}{4}\right) + 1$



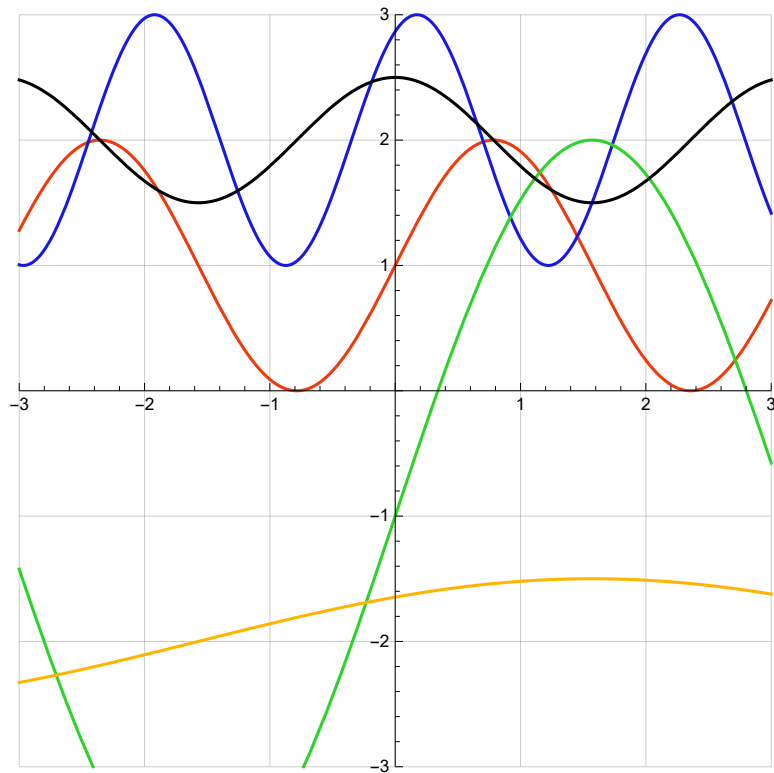
3.

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



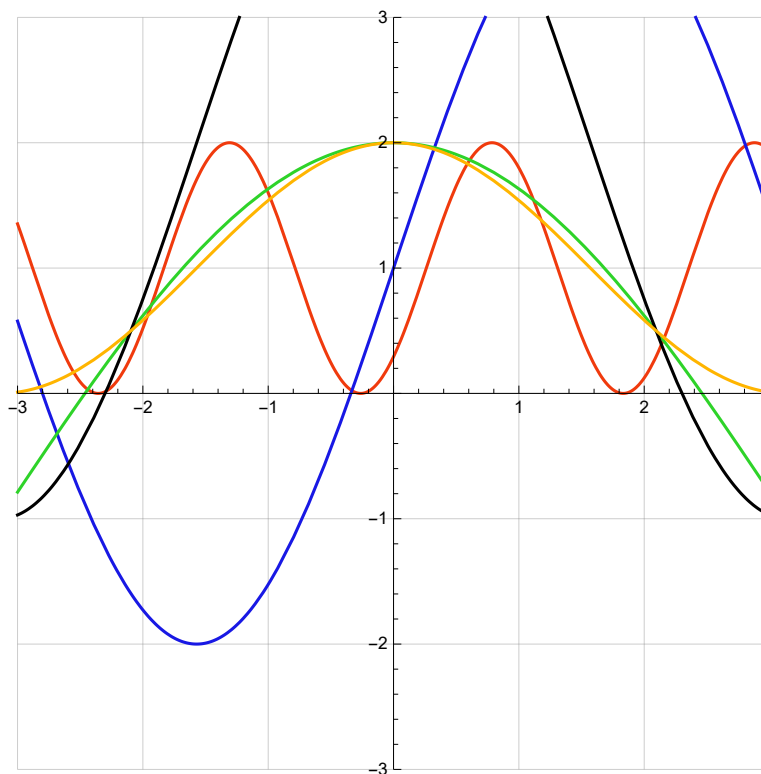
4.

- $\cos\left(\frac{\pi}{6} - 3x\right) + 2$
- $3 \sin(x) - 1$
- $\frac{1}{2} \sin\left(\frac{x}{2} + \frac{\pi}{4}\right) - 2$
- $\frac{1}{2} \cos(2x) + 2$
- $\sin(2x) + 1$



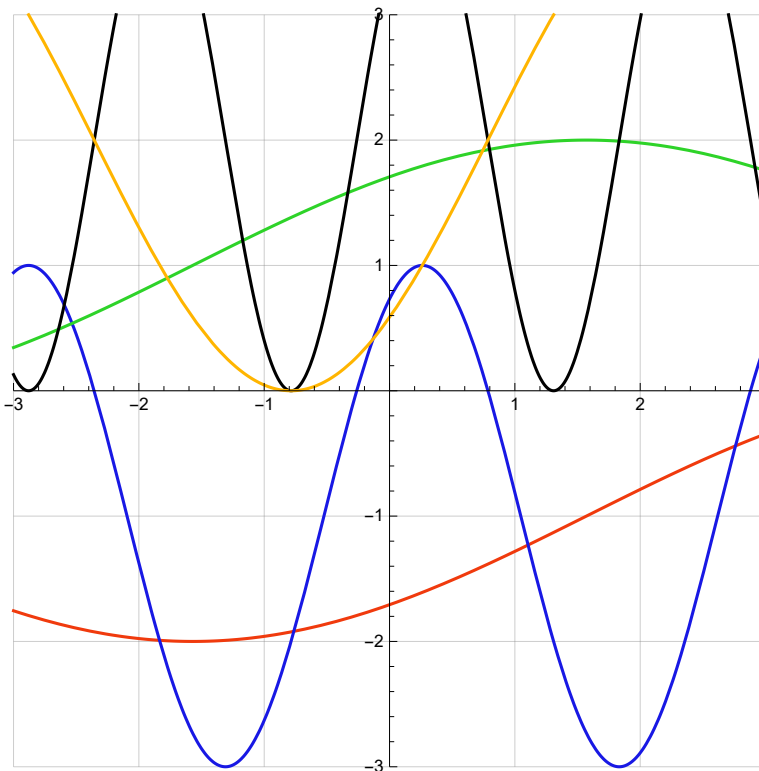
5.

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



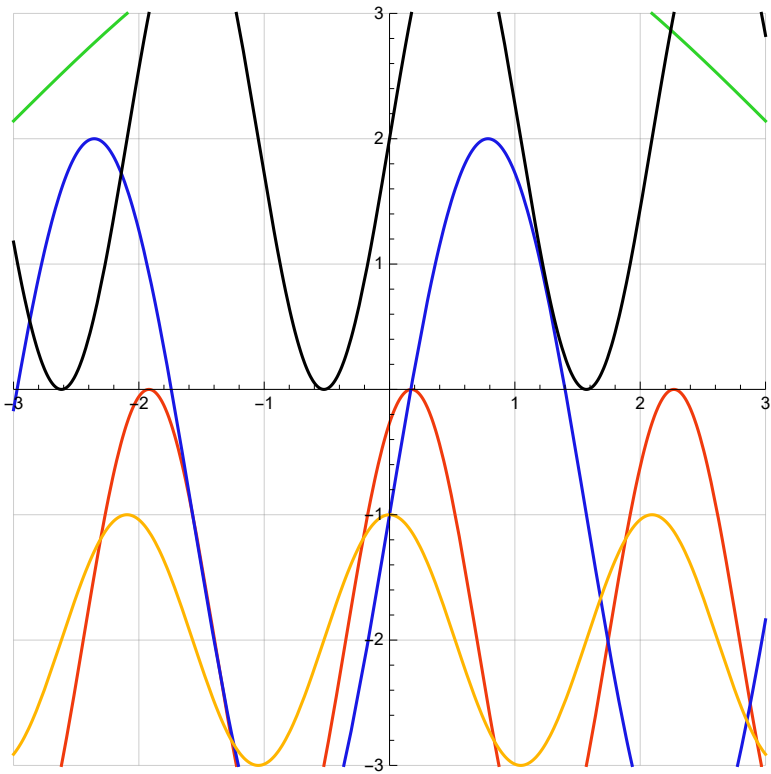
6.

- $2 \sin\left(3x + \frac{\pi}{4}\right) + 2$
- $\sin\left(\frac{x}{2} + \frac{\pi}{4}\right) + 1$
- $-\sin\left(\frac{\pi}{4} - \frac{x}{2}\right) - 1$
- $2 - 2 \sin\left(\frac{\pi}{4} - x\right)$
- $2 \cos\left(\frac{\pi}{6} - 2x\right) - 1$



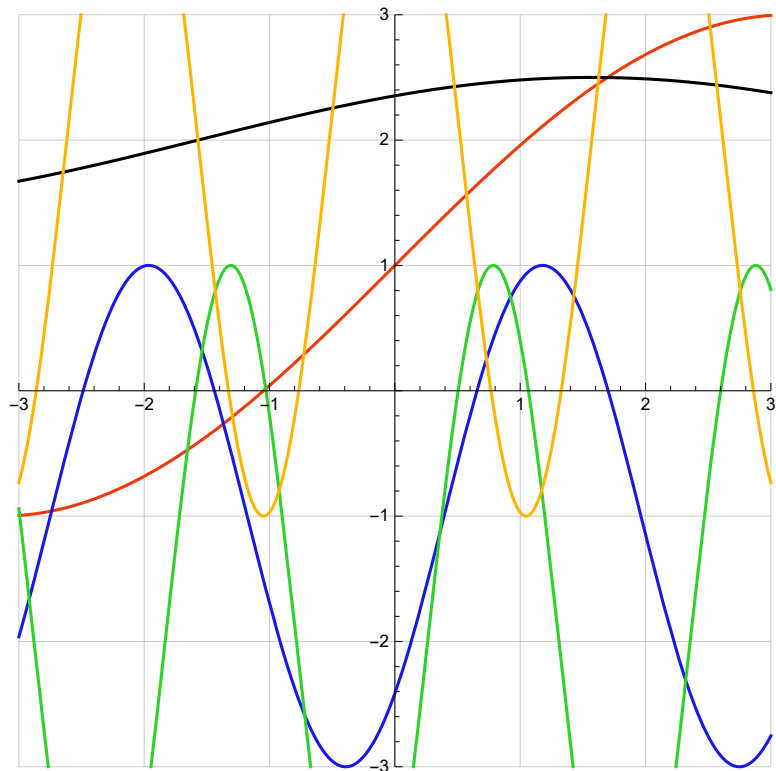
7.

- $2 \cos\left(\frac{x}{2}\right) + 2$
- $2 \cos\left(\frac{\pi}{6} - 3x\right) - 2$
- $2 \sin(3x) + 2$
- $3 \sin(2x) - 1$
- $\cos(3x) - 2$



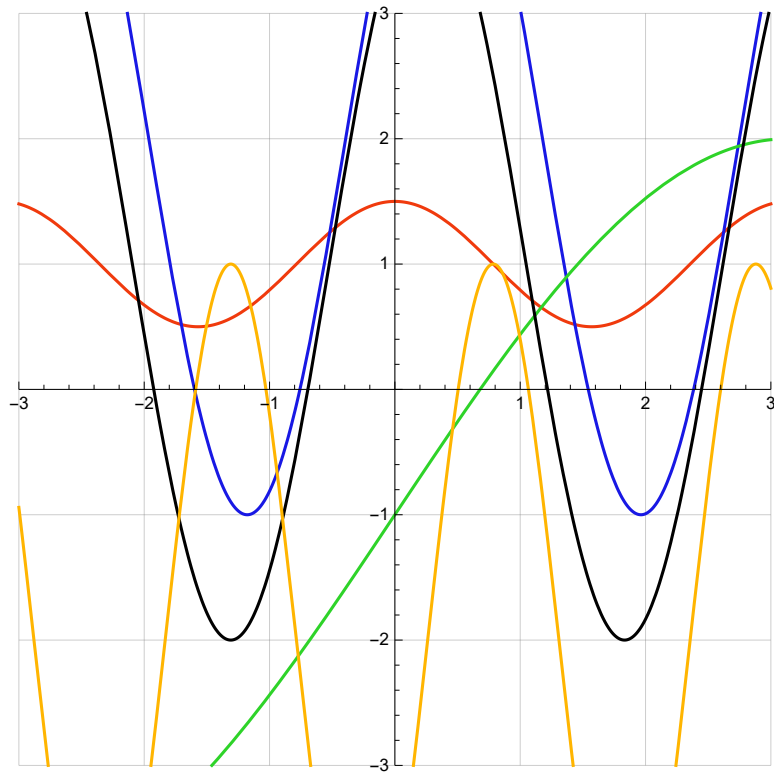
8.

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



9.

- $3 \cos\left(\frac{\pi}{6} - 2x\right) + 1$
- $\frac{1}{2} \cos(2x) + 1$
- $3 \sin\left(\frac{x}{2}\right) - 1$
- $3 \sin\left(2x + \frac{\pi}{4}\right) + 2$
- $-3 \sin\left(\frac{\pi}{4} - 3x\right) - 2$



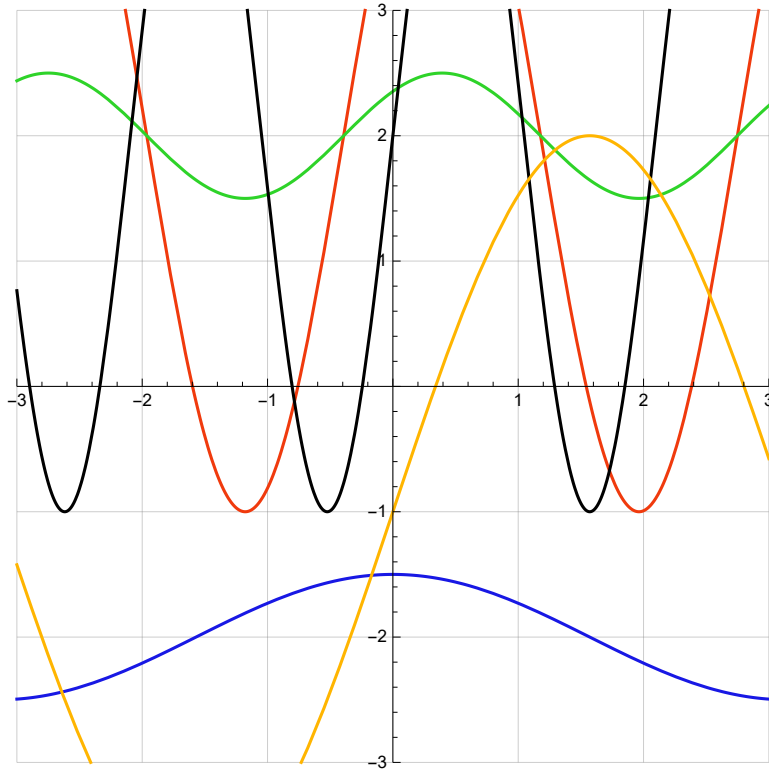
10.

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



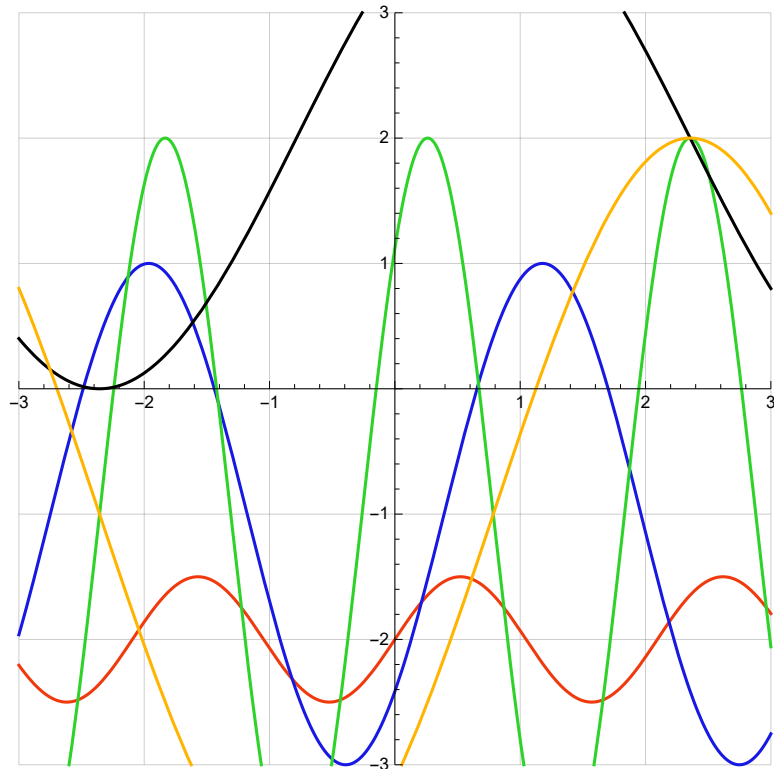
11.

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



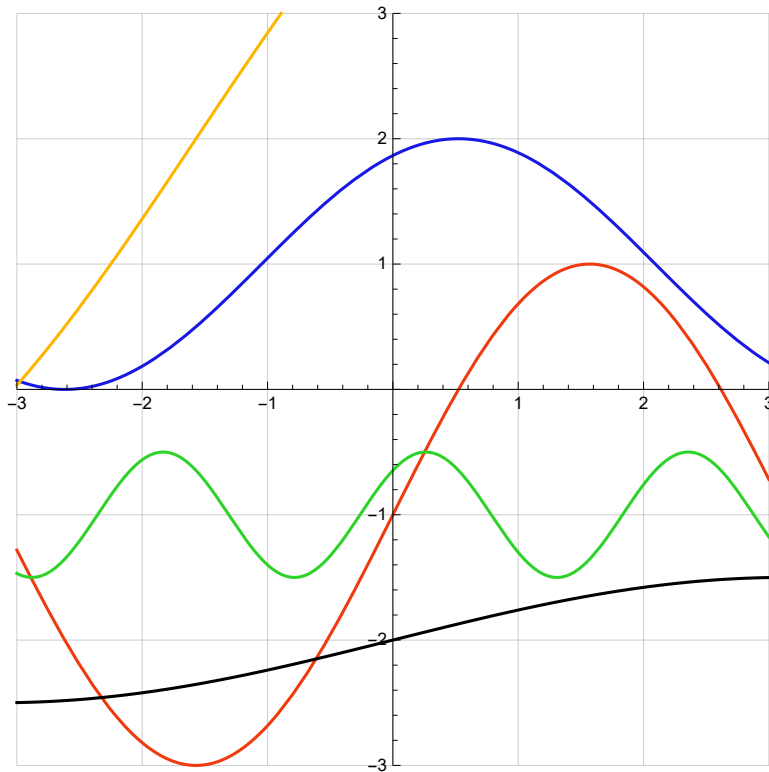
12.

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



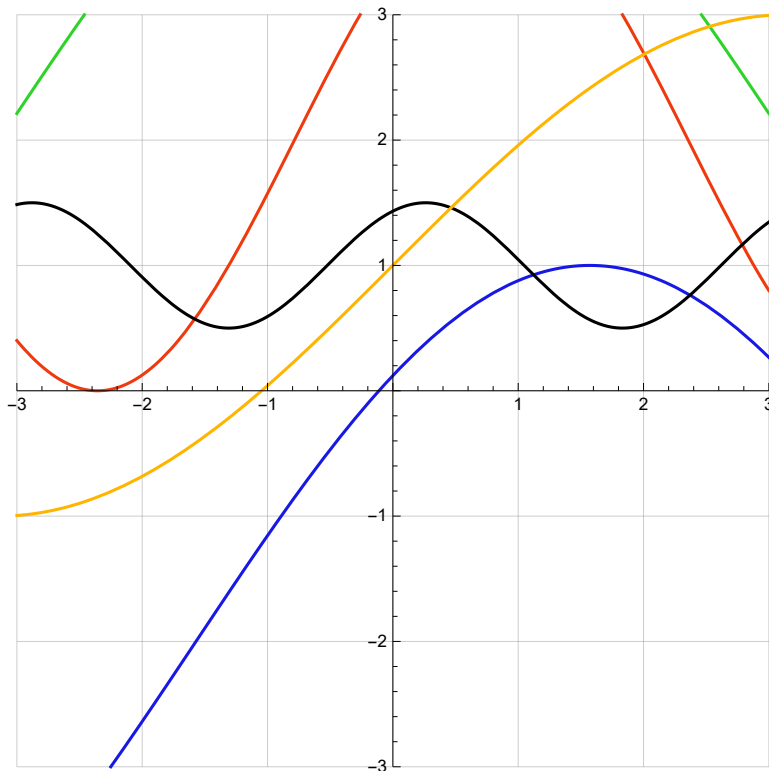
13.

- $\cos\left(\frac{\pi}{6} - x\right) + 1$
- $2 \sin(x) - 1$
- $\frac{1}{2} \sin\left(\frac{x}{2}\right) - 2$
- $3 \sin\left(\frac{x}{2} + \frac{\pi}{4}\right) + 2$
- $\frac{1}{2} \sin\left(3x + \frac{\pi}{4}\right) - 1$



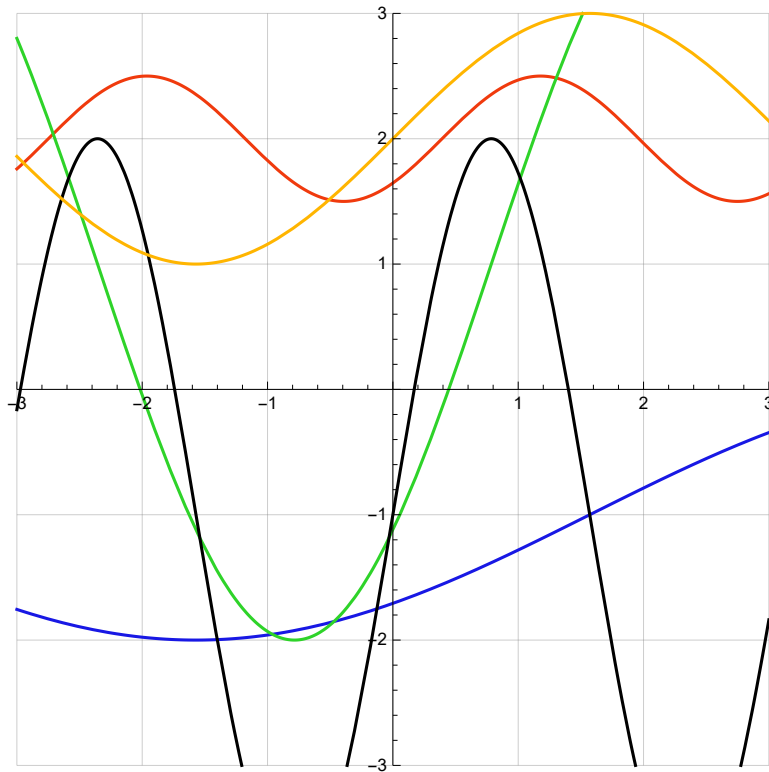
14.

- $\frac{1}{2} \cos\left(\frac{\pi}{6} - 2x\right) + 1$
- $3 \cos\left(\frac{x}{2}\right) + 2$
- $2 \sin\left(\frac{x}{2}\right) + 1$
- $2 \sin\left(x + \frac{\pi}{4}\right) + 2$
- $3 \sin\left(\frac{x}{2} + \frac{\pi}{4}\right) - 2$



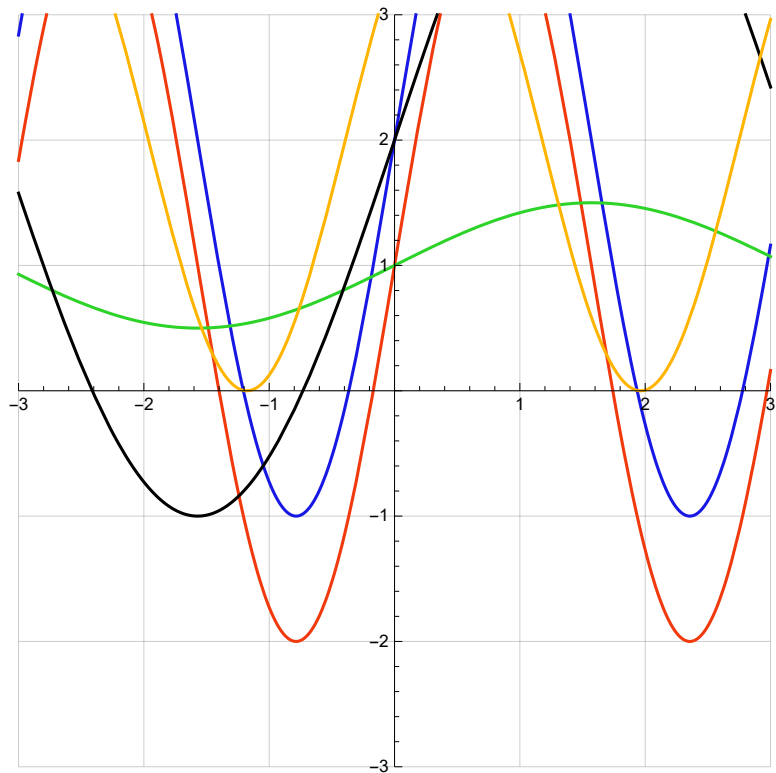
15.

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



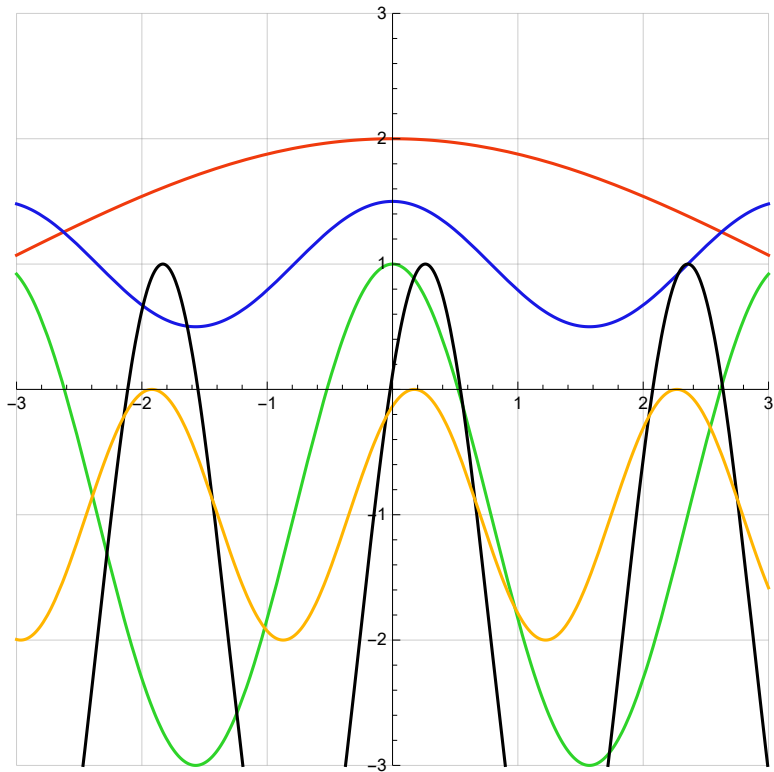
16.

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



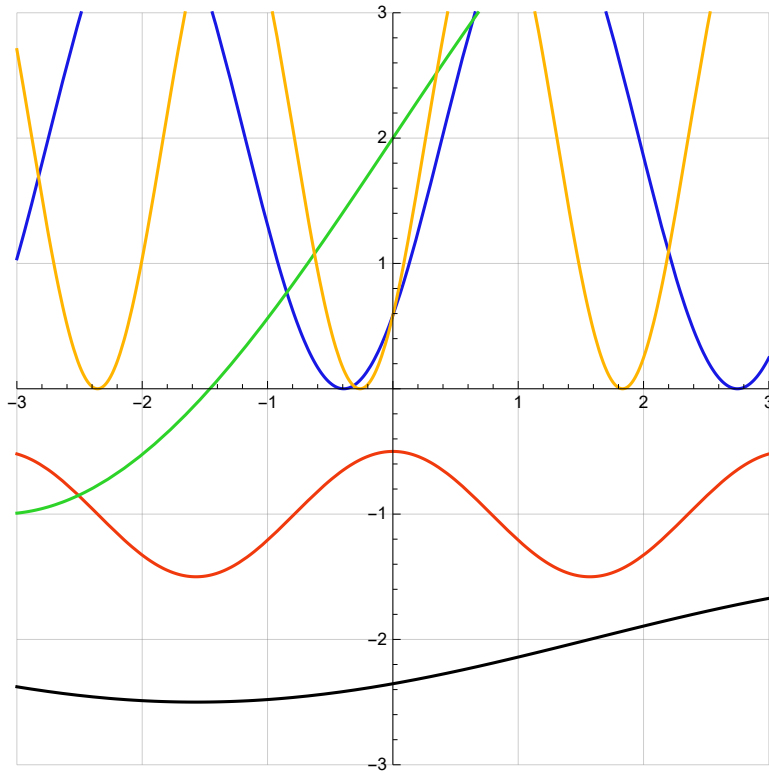
17.

- $\cos\left(\frac{\pi}{6} - 3x\right) - 1$
- $\cos\left(\frac{x}{2}\right) + 1$
- $2 \cos(2x) - 1$
- $3 \sin\left(3x + \frac{\pi}{4}\right) - 2$
- $\frac{1}{2} \cos(2x) + 1$



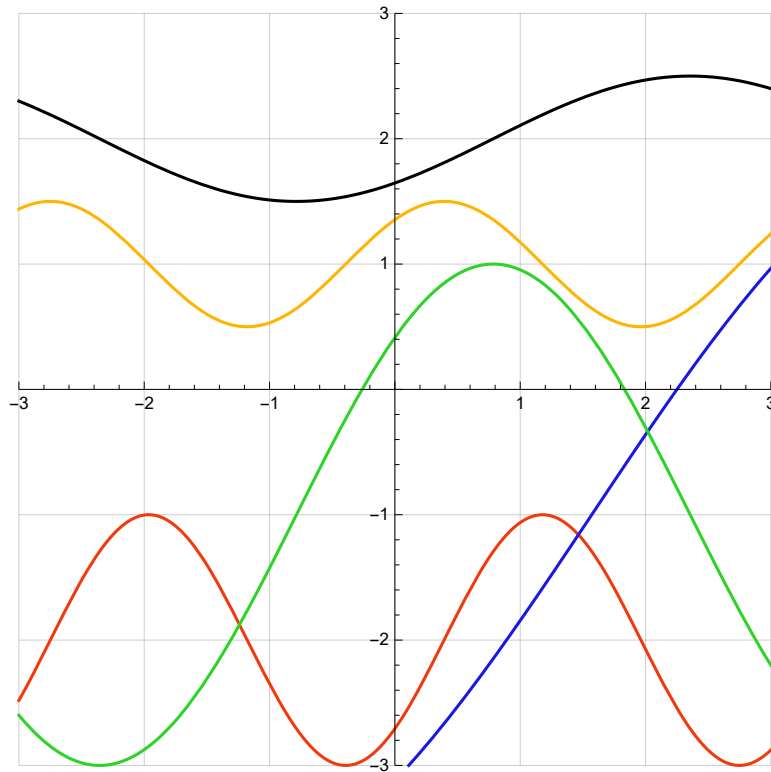
18.

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



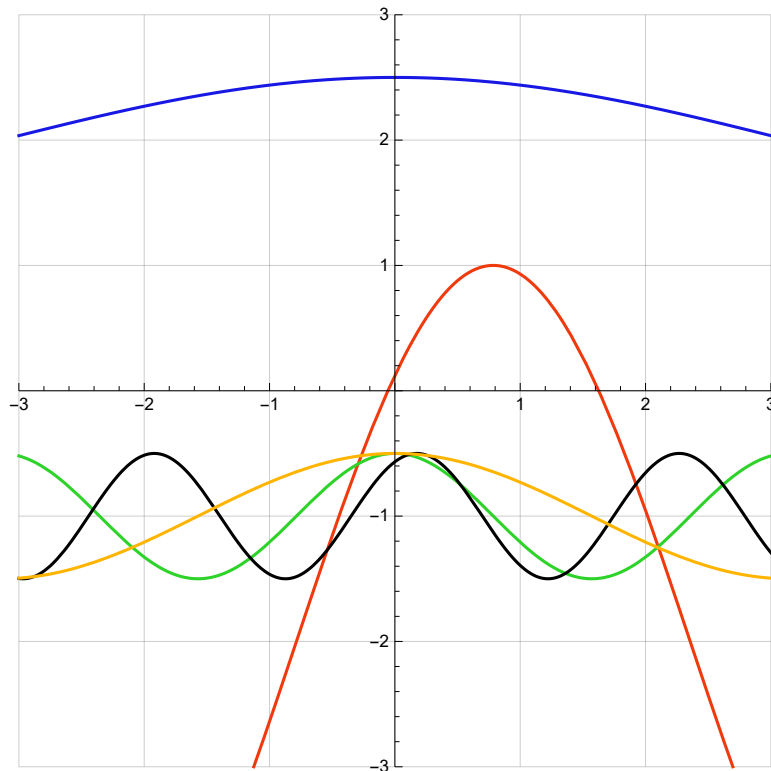
19.

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



20.

- $3 \sin\left(x + \frac{\pi}{4}\right) - 2$
- $\frac{1}{2} \cos(2x) - 1$
- $\frac{1}{2} \cos\left(\frac{x}{2}\right) + 2$
- $\frac{\cos(x)}{2} - 1$
- $\frac{1}{2} \cos\left(\frac{\pi}{6} - 3x\right) - 1$



Rešitve:

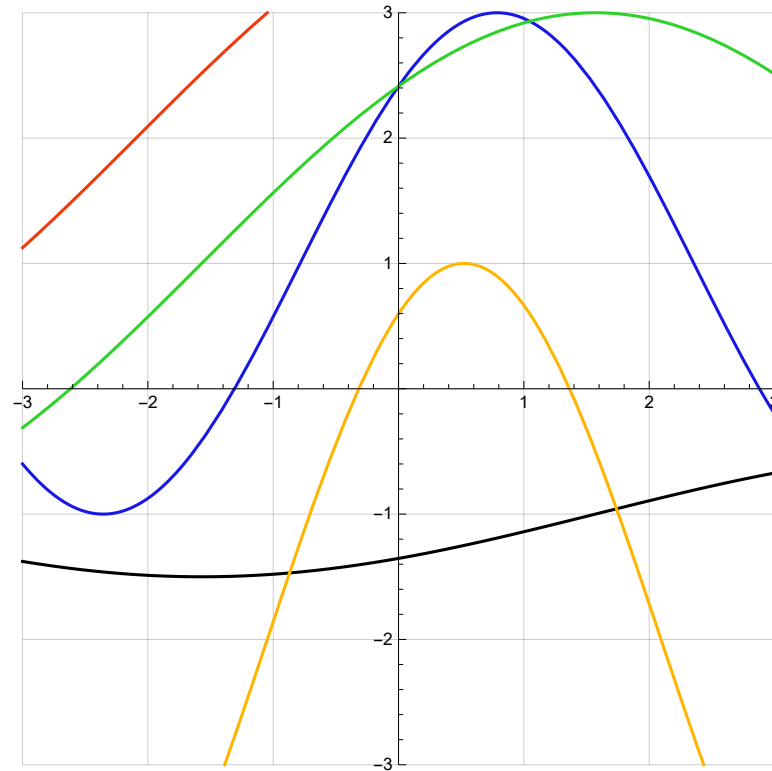
1.

- $\cos(x) + 1$ ■
- $3 \cos\left(\frac{\pi}{6} - 2x\right) + 1$ ■
- $3 \sin(x) + 1$ ■
- $2 \sin\left(3x + \frac{\pi}{4}\right) + 1$ ■
- $\frac{1}{2} \cos\left(\frac{x}{2}\right) - 1$ ■



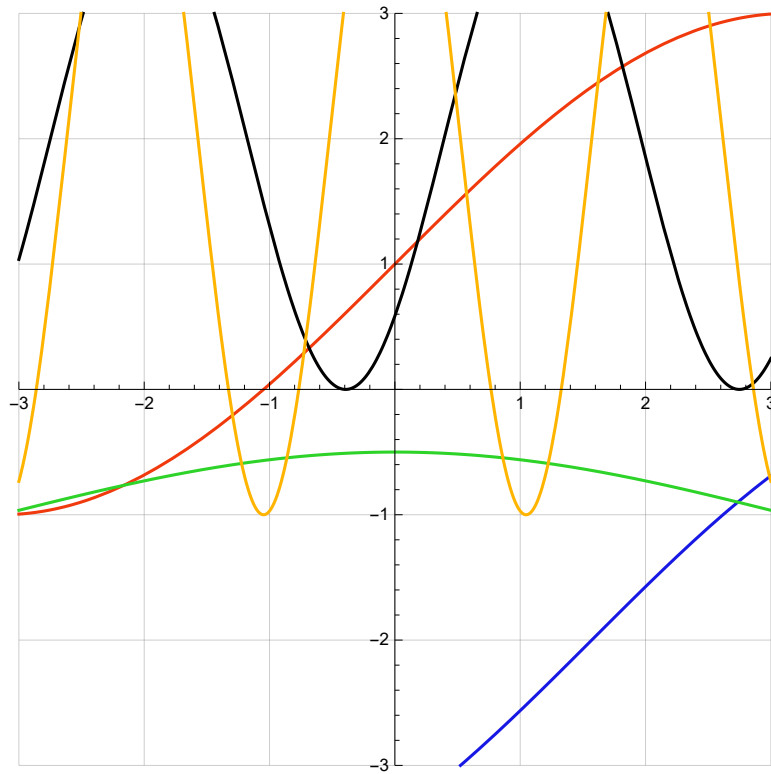
2.

- $-\frac{1}{2} \sin\left(\frac{\pi}{4} - \frac{x}{2}\right) - 1$ ■
- $3 \cos\left(\frac{\pi}{6} - x\right) - 2$ ■
- $2 \sin\left(\frac{x}{2} + \frac{\pi}{4}\right) + 1$ ■
- $2 \cos\left(\frac{\pi}{6} - \frac{x}{2}\right) + 2$ ■
- $2 \sin\left(x + \frac{\pi}{4}\right) + 1$ ■



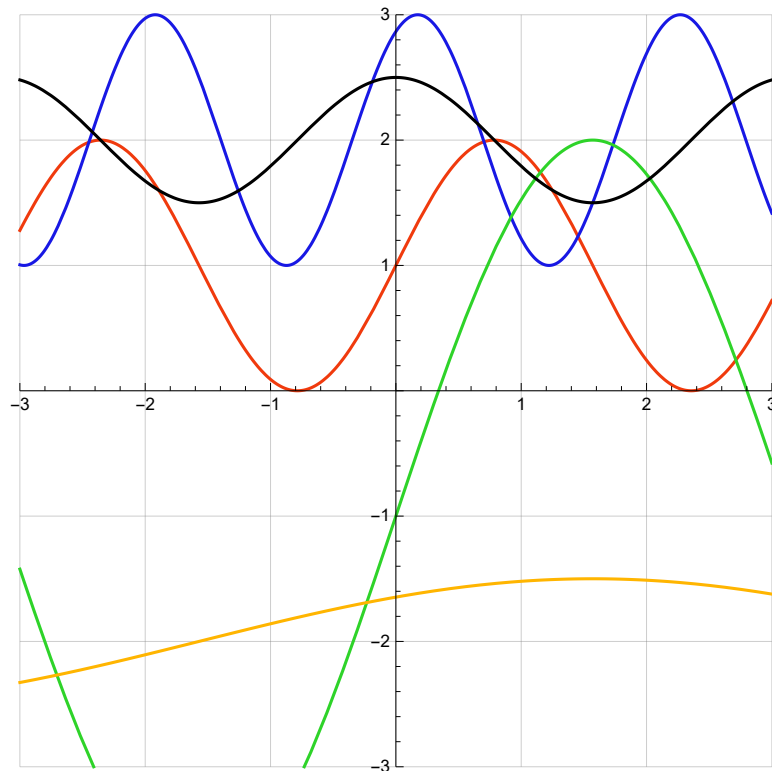
3.

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



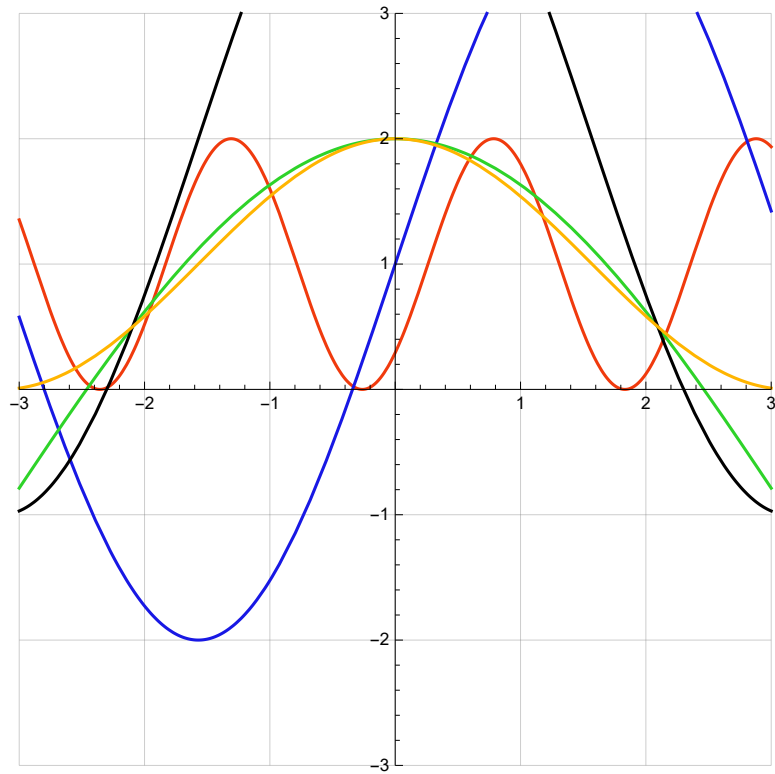
4.

- $\cos\left(\frac{\pi}{6} - 3x\right) + 2$ ■
- $3 \sin(x) - 1$ ■
- $\frac{1}{2} \sin\left(\frac{x}{2} + \frac{\pi}{4}\right) - 2$ ■
- $\frac{1}{2} \cos(2x) + 2$ ■
- $\sin(2x) + 1$ ■



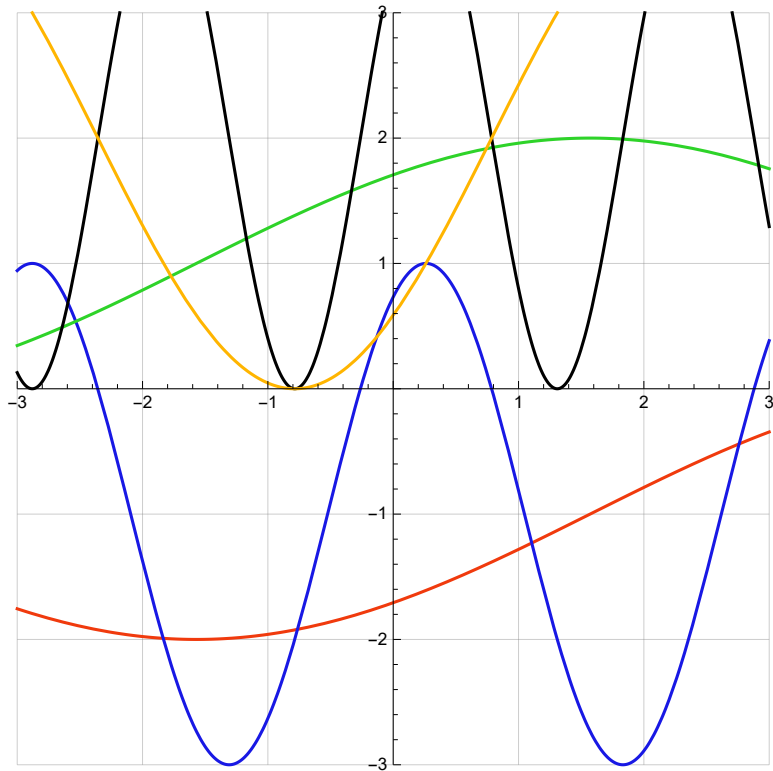
5.

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



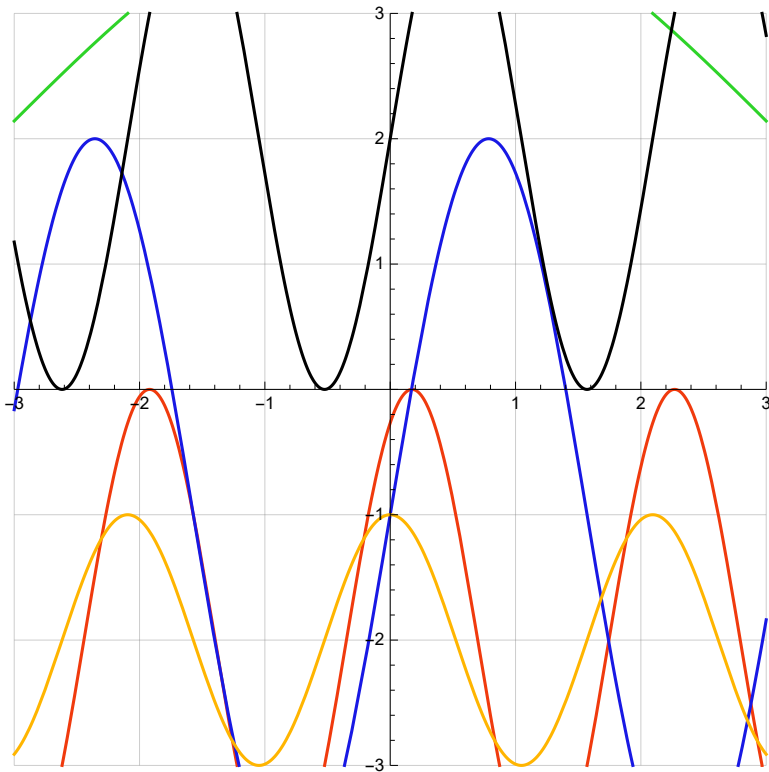
6.

- $2 \sin\left(3x + \frac{\pi}{4}\right) + 2$ ■
- $\sin\left(\frac{x}{2} + \frac{\pi}{4}\right) + 1$ ■
- $-\sin\left(\frac{\pi}{4} - \frac{x}{2}\right) - 1$ ■
- $2 - 2 \sin\left(\frac{\pi}{4} - x\right)$ ■
- $2 \cos\left(\frac{\pi}{6} - 2x\right) - 1$ ■



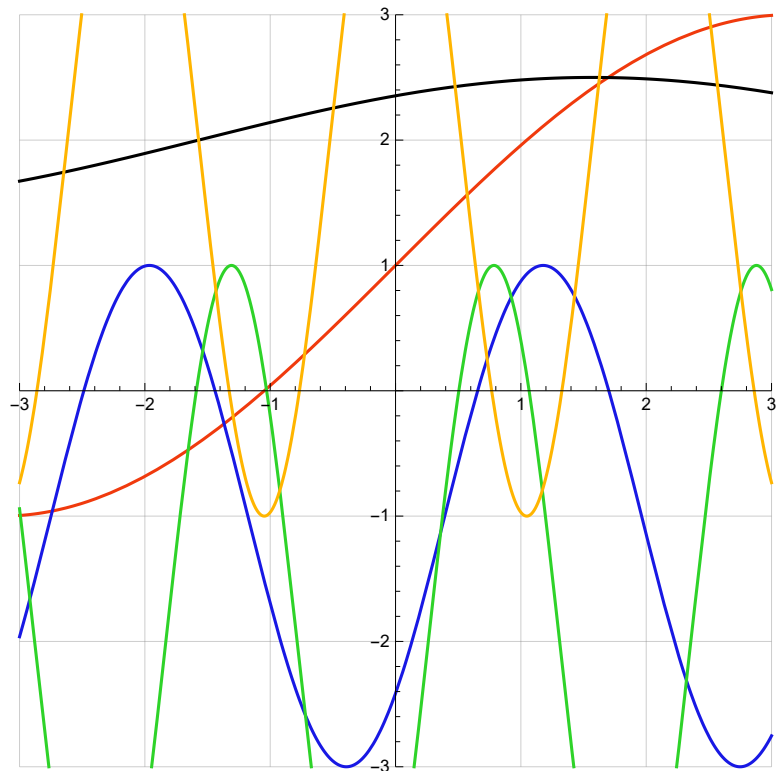
7.

- $2 \cos\left(\frac{x}{2}\right) + 2$ ■
- $2 \cos\left(\frac{\pi}{6} - 3x\right) - 2$ ■
- $2 \sin(3x) + 2$ ■
- $3 \sin(2x) - 1$ ■
- $\cos(3x) - 2$ ■



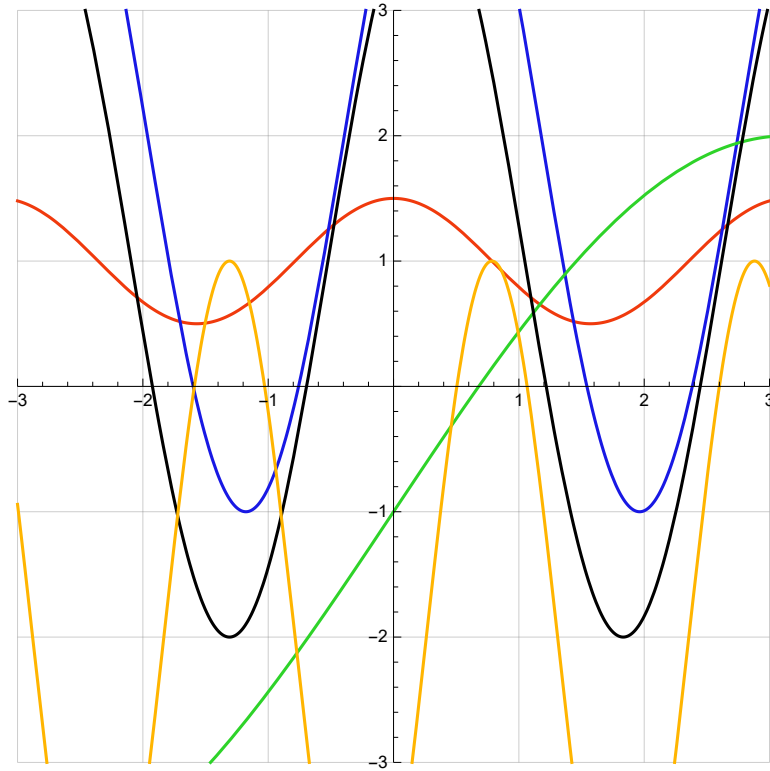
8.

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



9.

- $3 \cos\left(\frac{\pi}{6} - 2x\right) + 1$ ■
- $\frac{1}{2} \cos(2x) + 1$ ■
- $3 \sin\left(\frac{x}{2}\right) - 1$ ■
- $3 \sin\left(2x + \frac{\pi}{4}\right) + 2$ ■
- $-3 \sin\left(\frac{\pi}{4} - 3x\right) - 2$ ■



10.

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



11.

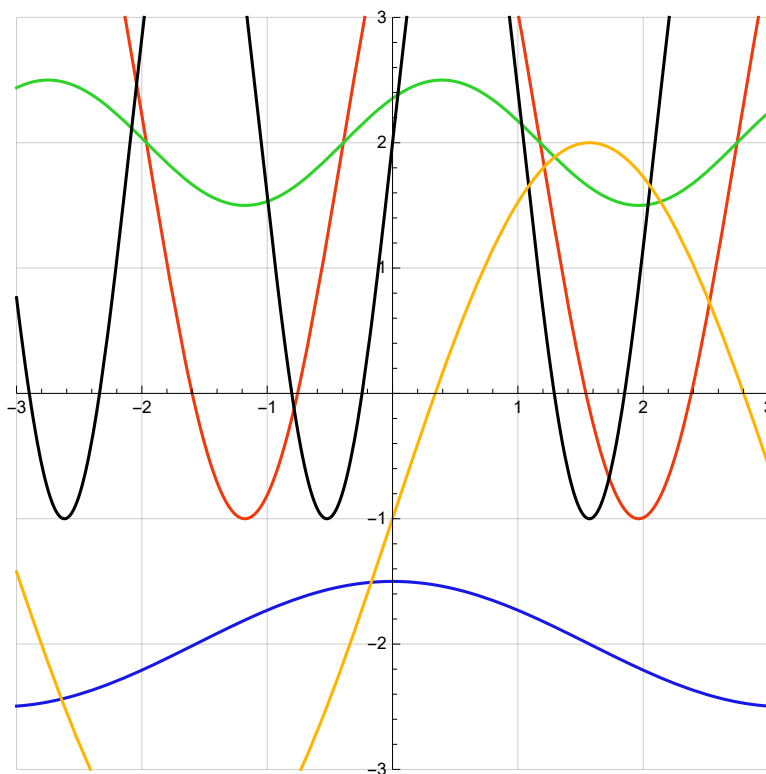
$$\frac{\cos(x)}{2} - 2$$

$$3 \sin(3x) + 2$$

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

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

$$3 \sin(x) - 1$$



12.

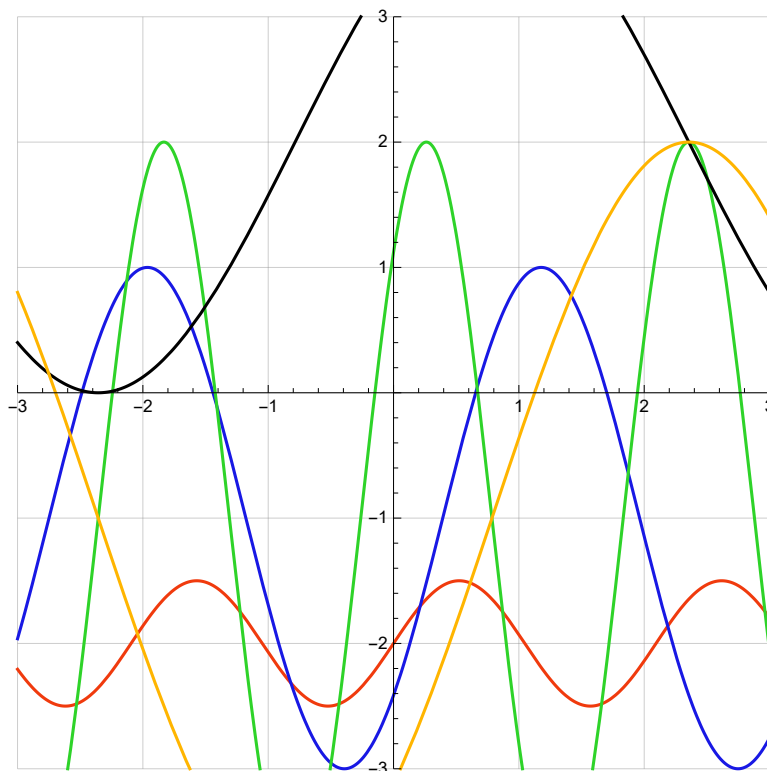
$$2 \sin\left(x + \frac{\pi}{4}\right) + 2$$

$$\frac{1}{2} \sin(3x) - 2$$

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

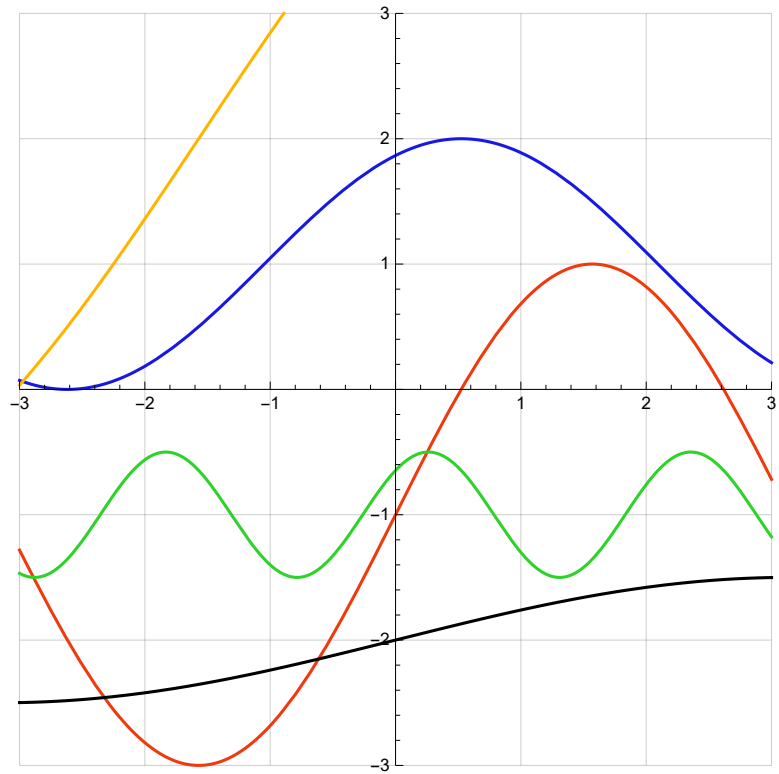
$$3 \sin\left(3x + \frac{\pi}{4}\right) - 1$$

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



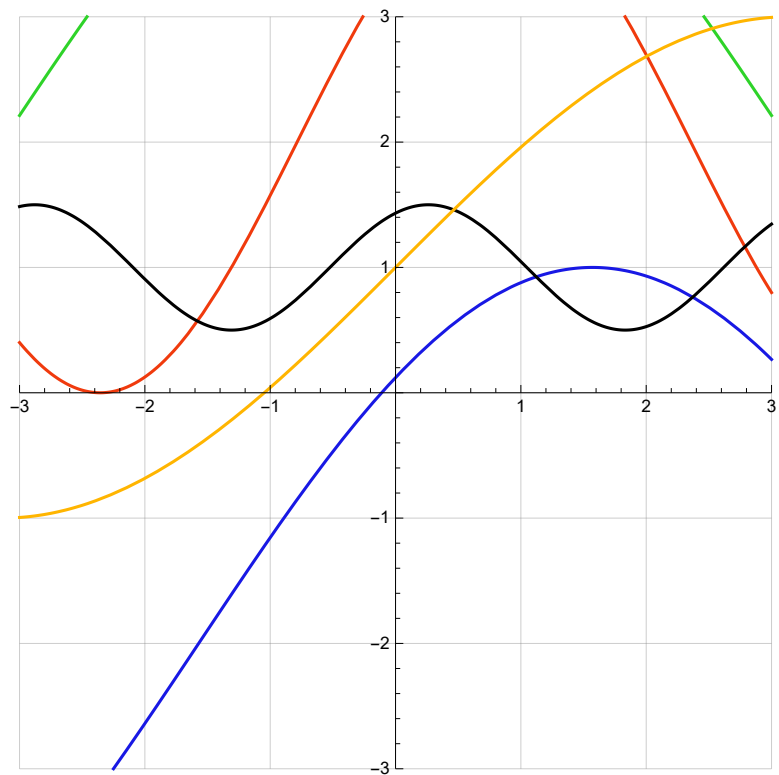
13.

- $\cos\left(\frac{\pi}{6} - x\right) + 1$ ■
- $2 \sin(x) - 1$ ■
- $\frac{1}{2} \sin\left(\frac{x}{2}\right) - 2$ ■
- $3 \sin\left(\frac{x}{2} + \frac{\pi}{4}\right) + 2$ ■
- $\frac{1}{2} \sin\left(3x + \frac{\pi}{4}\right) - 1$ ■



14.

- $\frac{1}{2} \cos\left(\frac{\pi}{6} - 2x\right) + 1$ ■
- $3 \cos\left(\frac{x}{2}\right) + 2$ ■
- $2 \sin\left(\frac{x}{2}\right) + 1$ ■
- $2 \sin\left(x + \frac{\pi}{4}\right) + 2$ ■
- $3 \sin\left(\frac{x}{2} + \frac{\pi}{4}\right) - 2$ ■



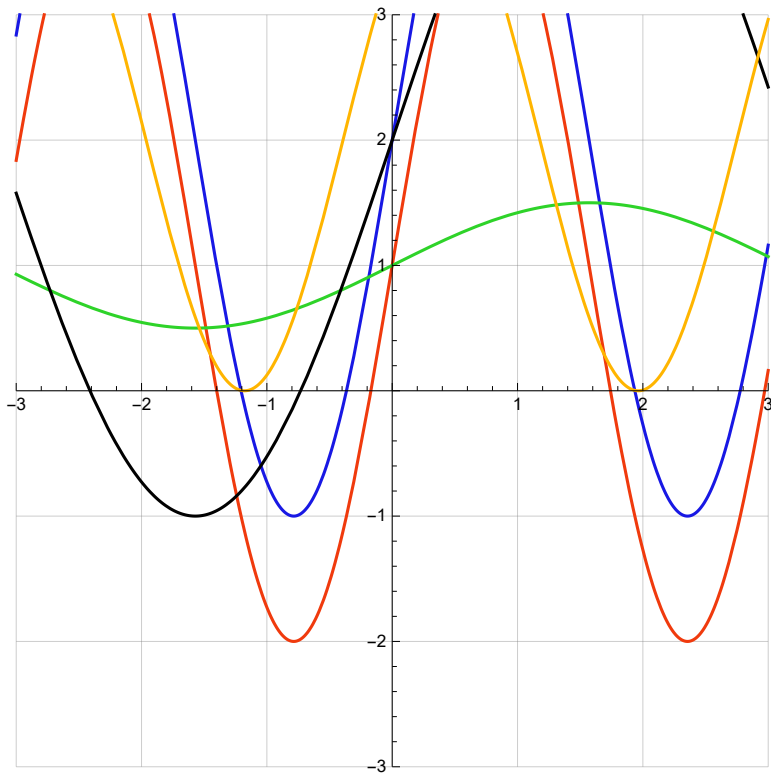
15.

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



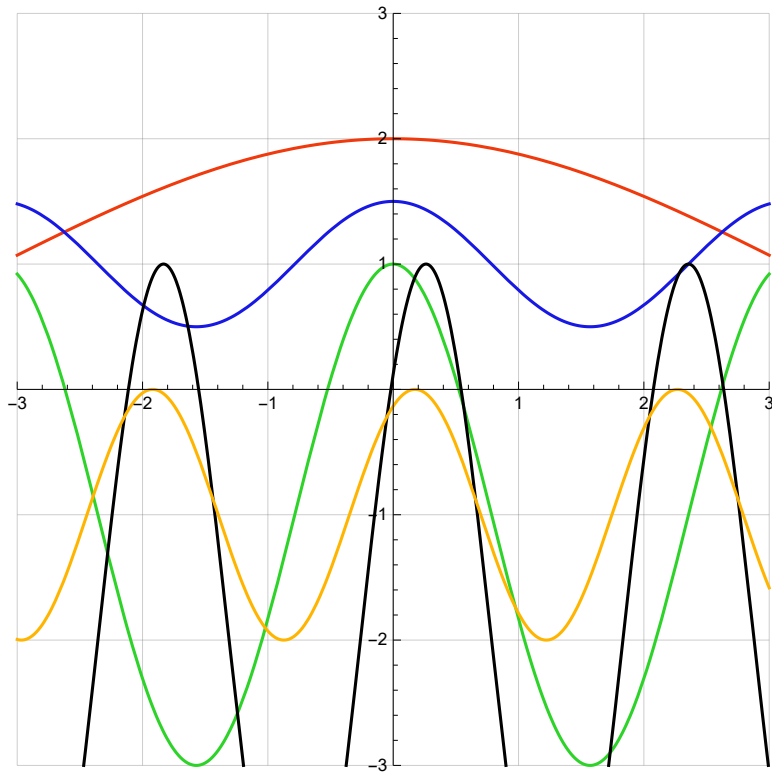
16.

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



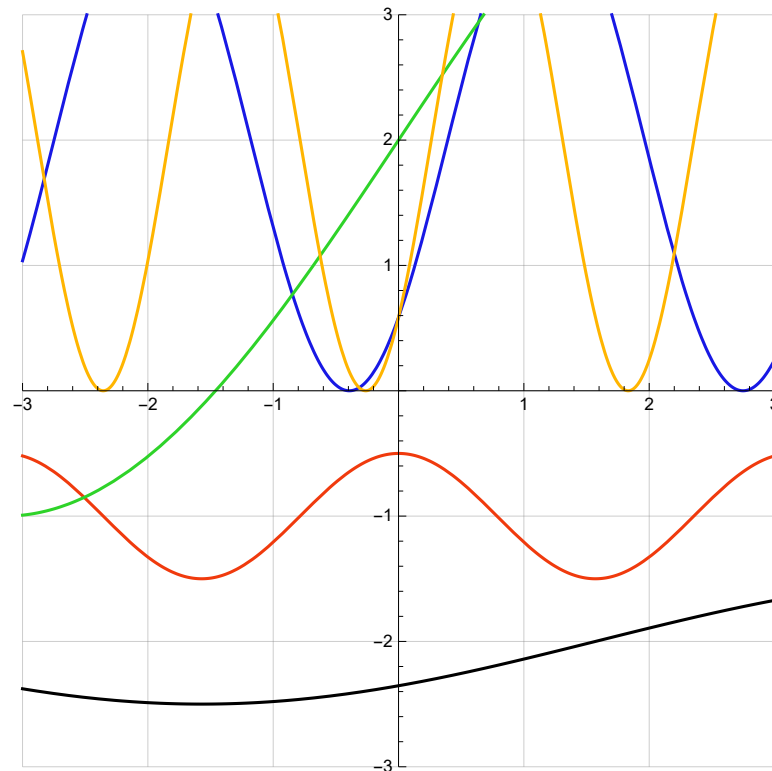
17.

- $\cos\left(\frac{\pi}{6} - 3x\right) - 1$ ■
- $\cos\left(\frac{x}{2}\right) + 1$ ■
- $2\cos(2x) - 1$ ■
- $3\sin\left(3x + \frac{\pi}{4}\right) - 2$ ■
- $\frac{1}{2}\cos(2x) + 1$ ■



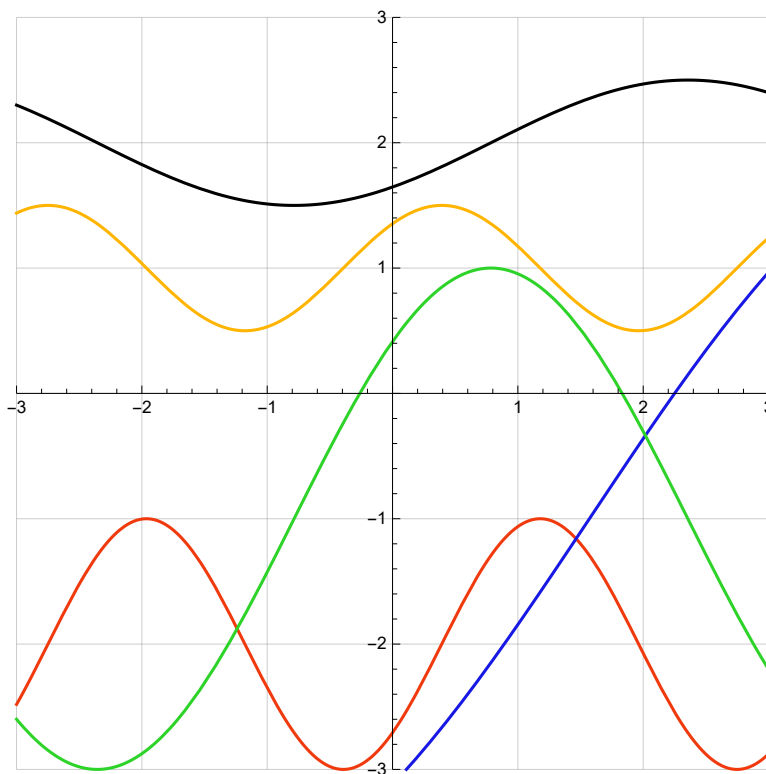
18.

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



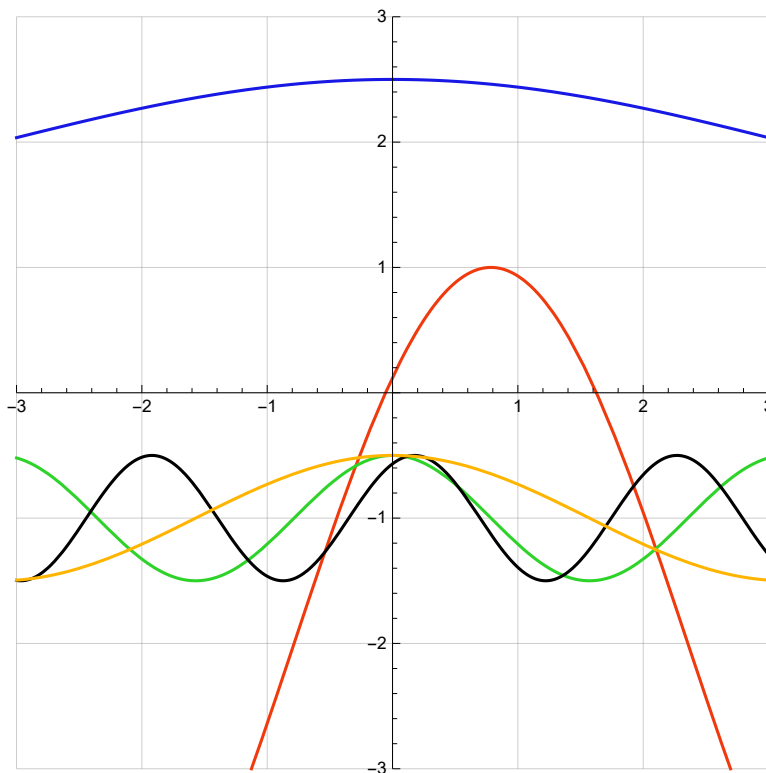
19.

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



20.

- $3 \sin\left(x + \frac{\pi}{4}\right) - 2$ ■
- $\frac{1}{2} \cos(2x) - 1$ ■
- $\frac{1}{2} \cos\left(\frac{x}{2}\right) + 2$ ■
- $\frac{\cos(x)}{2} - 1$ ■
- $\frac{1}{2} \cos\left(\frac{\pi}{6} - 3x\right) - 1$ ■



PERMANENT CITATION

Izidor Hafner

Elementary Transformations of a Sine Wave Quiz

**[http://demonstrations.wolfram.com/ElementaryTransformationsOfASineWaveQuiz/Wolfram
Demonstrations Project](http://demonstrations.wolfram.com/ElementaryTransformationsOfASineWaveQuiz/WolframDemonstrationsProject)**

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