삼각함수의 그래프

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목차

삼각함수의 기본 그래프

문제 1) 다음 표를 완성하여라.

θ	0	$\frac{\pi}{6}$	$\frac{\pi}{3}$	$\frac{\pi}{2}$	$\frac{2}{3}\pi$	$\frac{5}{6}\pi$	π	$\frac{7}{6}\pi$	$\frac{4}{3}\pi$	$\frac{3}{2}\pi$	$\frac{5}{3}\pi$	$\frac{11}{6}\pi$	2π
$\sin\theta$		$\frac{1}{2}$											

문제 2) $y = \sin x$의 그래프를 그려라.

삼각함수의 기본 그래프

문제 1) 다음 표를 완성하여라.

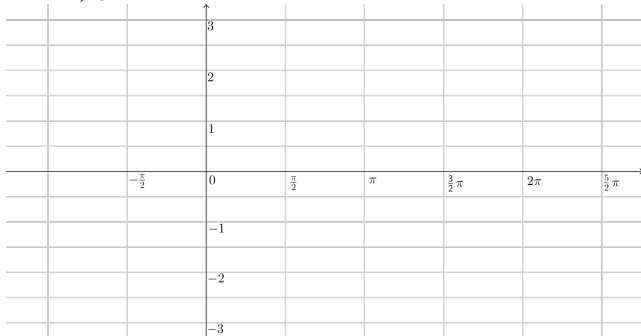| θ	0	$\frac{\pi}{6}$	$\frac{\pi}{3}$	$\frac{\pi}{2}$	$\frac{2}{3}\pi$	$\frac{5}{6}\pi$	π	$\frac{7}{6}\pi$	$\frac{4}{3}\pi$	$\frac{3}{2}\pi$	$\frac{5}{3}\pi$	$\frac{11}{6}\pi$	2π
$\sin\theta$	0	$\frac{1}{2}$	$\frac{\sqrt{3}}{2}$	1	$\frac{\sqrt{3}}{2}$	$\frac{1}{2}$	0	$-\frac{1}{2}$	$-\frac{\sqrt{3}}{2}$	-1	$-\frac{\sqrt{3}}{2}$	$-\frac{1}{2}$	0

문제 2) $y = \sin x$의 그래프를 그려라.

$y = \sin x$
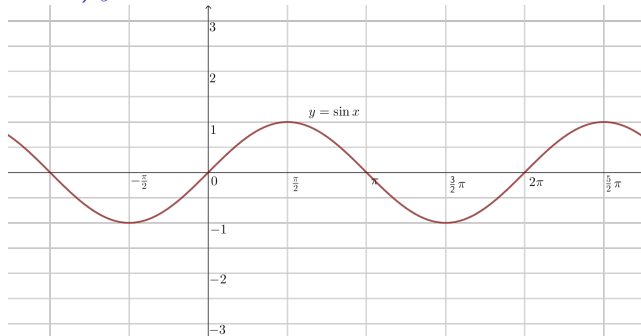
- $-1 \leq \sin x \leq 1$
- 주기 $= 2\pi$
- 원점 대칭 (기함수)

삼각함수의 기본 그래프

문제 3) 다음 표를 완성하여라.

θ	0	$\frac{\pi}{6}$	$\frac{\pi}{3}$	$\frac{\pi}{2}$	$\frac{2}{3}\pi$	$\frac{5}{6}\pi$	π	$\frac{7}{6}\pi$	$\frac{4}{3}\pi$	$\frac{3}{2}\pi$	$\frac{5}{3}\pi$	$\frac{11}{6}\pi$	2π
$\cos\theta$		$\frac{\sqrt{3}}{2}$											

문제 4) $y = \cos x$의 그래프를 그려라.

문제 3) 다음 표를 완성하여라.

θ	0	$\frac{\pi}{6}$	$\frac{\pi}{3}$	$\frac{\pi}{2}$	$\frac{2}{3}\pi$	$\frac{5}{6}\pi$	π	$\frac{7}{6}\pi$	$\frac{4}{3}\pi$	$\frac{3}{2}\pi$	$\frac{5}{3}\pi$	$\frac{11}{6}\pi$	2π
$\cos\theta$	1	$\frac{\sqrt{3}}{2}$	$\frac{1}{2}$	0	$-\frac{1}{2}$	$-\frac{\sqrt{3}}{2}$	-1	$-\frac{\sqrt{3}}{2}$	$-\frac{1}{2}$	0	$\frac{1}{2}$	$\frac{\sqrt{3}}{2}$	1

문제 4) $y = \cos x$의 그래프를 그려라.
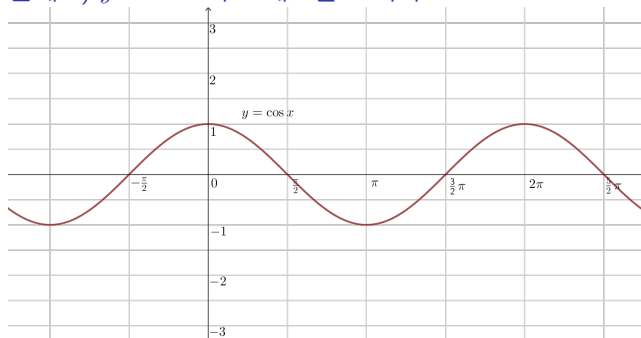
- $-1 \leq \cos x \leq 1$
- 주기 $= 2\pi$
- y축 대칭 (우함수)

삼각함수의 기본 그래프

문제 5) 다음 표를 완성하여라.
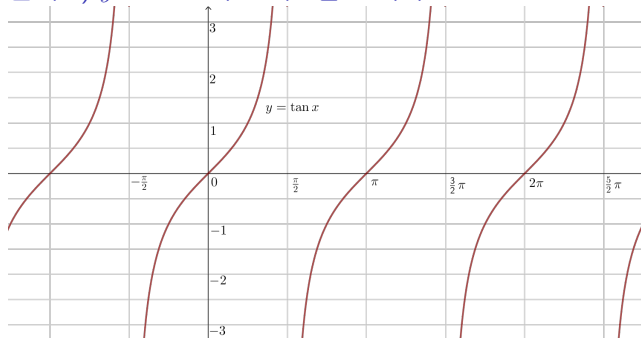
θ	0	$\frac{\pi}{4}$	$\frac{\pi}{2}$	$\frac{3}{4}\pi$	π	$\frac{5}{4}\pi$	$\frac{3}{2}\pi$	$\frac{7}{4}\pi$	2π
$\tan\theta$		1							

문제 6) $y = \tan x$의 그래프를 그려라.

문제 5) 다음 표를 완성하여라.

θ	0	$\frac{\pi}{4}$	$\frac{\pi}{2}$	$\frac{3}{4}\pi$	π	$\frac{5}{4}\pi$	$\frac{3}{2}\pi$	$\frac{7}{4}\pi$	2π
$\tan\theta$	0	1	×	−1	0	1	×	−1	0

문제 6) $y = \tan x$의 그래프를 그려라.

$y = \tan x$

- $-\infty < \tan x < \infty$
- 주기 $= \pi$
- 원점 대칭

목차

문제 7) 다음 삼각함수들의 그래프를 그려라.

(1-1) $y = \sin(x - \frac{\pi}{4})$

(1-2) $y = \sin x - 1$

문제 7) 다음 삼각함수들의 그래프를 그려라.

(1-1) $y = \sin(x - \frac{\pi}{4})$

(1-2) $y = \sin x - 1$
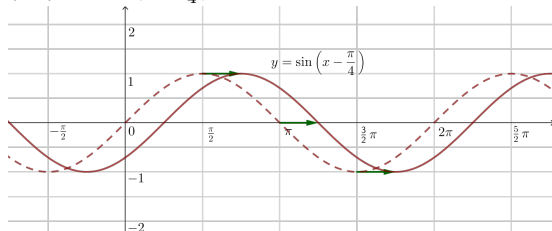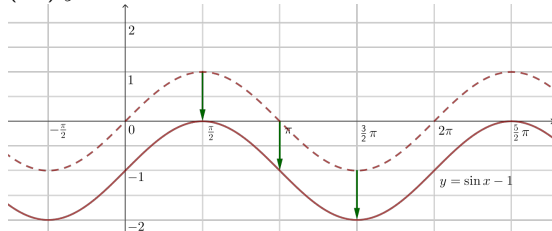
삼각함수의 평행이동

(1-3) $y = \cos(x + \frac{\pi}{2})$

(1-4) $y = \cos x + \frac{1}{2}$

삼각함수의 평행이동

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

$y = \cos\left(x + \frac{\pi}{2}\right)$

(1-4) $y = \cos x + \frac{1}{2}$

$y = \cos x + \frac{1}{2}$
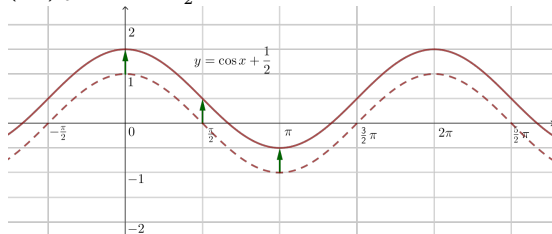
삼각함수의 평행이동

(1-5) $y = \sin\left(x - \frac{\pi}{4}\right) + 1$
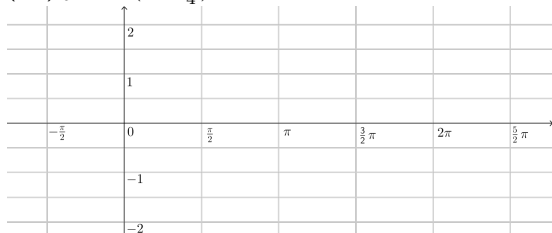
(1-6) $y = \cos\left(x + \frac{\pi}{2}\right) + \frac{1}{2}$

삼각함수의 평행이동

(1-5) $y = \sin(x - \frac{\pi}{4}) + 1$

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

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

$y = \cos\left(x + \frac{\pi}{2}\right) + \frac{1}{2}$
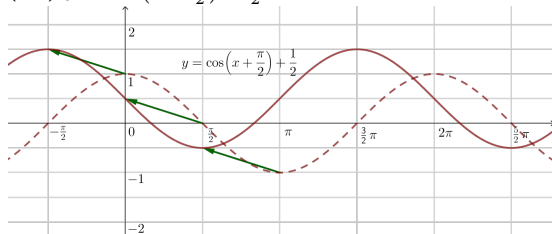
삼각함수의 평행이동

(1-7) $y = \cos(x - \pi) - 1$
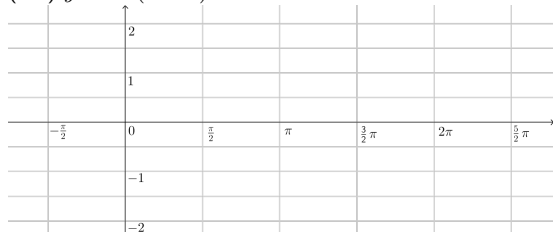
(1-8) $y = \sin\left(x + \frac{\pi}{2}\right) - 1$
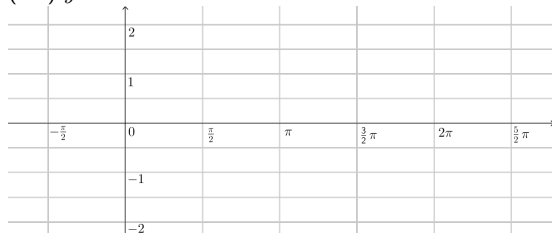
삼각함수의 평행이동

(1-7) $y = \cos(x - \pi) - 1$

$y = \cos(x - \pi) - 1$

(1-8) $y = \sin\left(x + \frac{\pi}{2}\right) - 1$

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

목차

삼각함수의 대칭이동과 확대변환
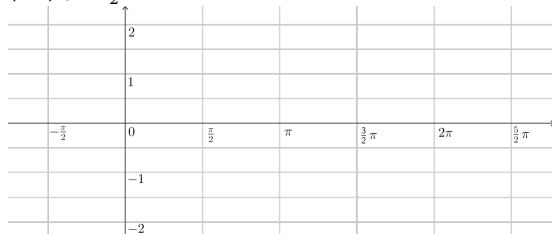
(2-1) $y = 2\sin x$

(2-2) $y = \frac{1}{2}\sin x$
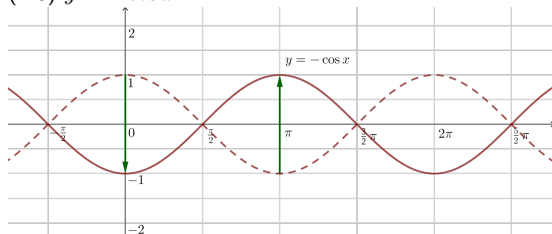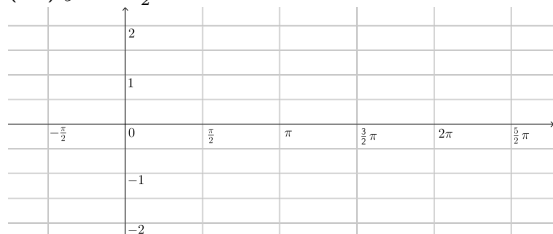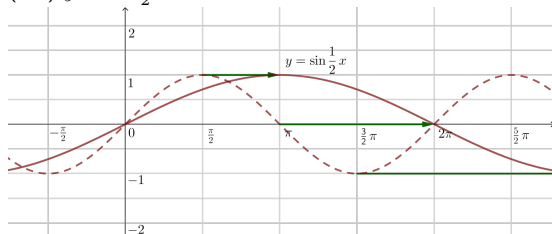
삼각함수의 대칭이동과 확대변환

(2-1) $y = 2 \sin x$
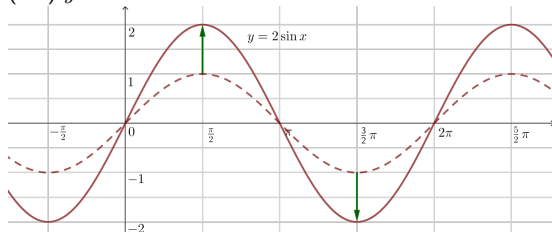
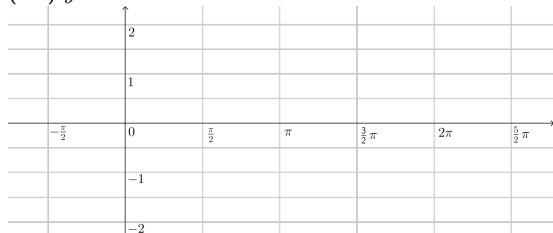(2-2) $y = \frac{1}{2} \sin x$
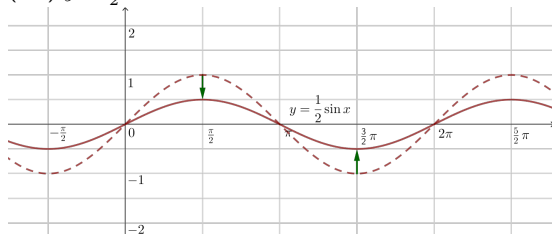
삼각함수의 대칭이동과 확대변환
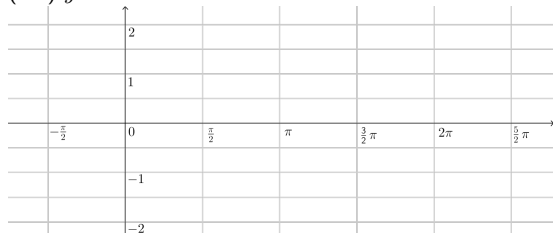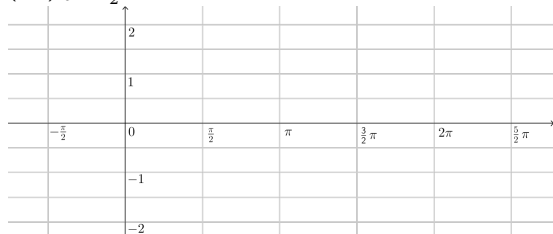
(2-3) $y = 2\cos x$

(2-4) $y = \frac{1}{2}\cos x$

삼각함수의 대칭이동과 확대변환

(2-3) $y = 2\cos x$
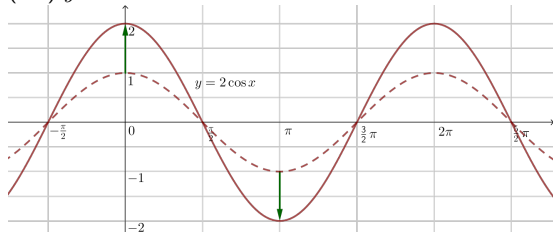
(2-4) $y = \frac{1}{2}\cos x$
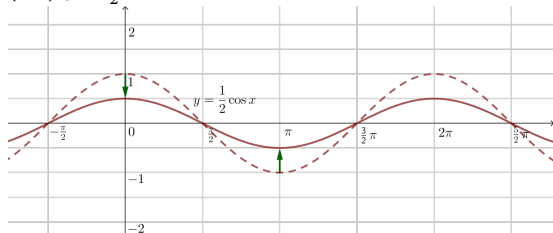
삼각함수의 대칭이동과 확대변환
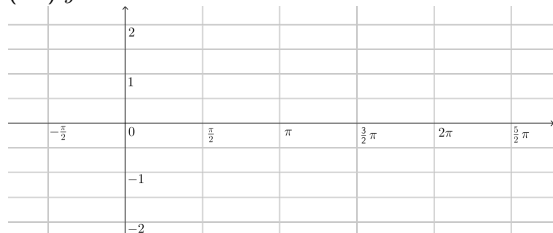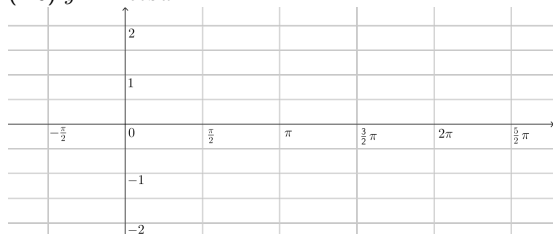
(2-5) $y = -\sin x$

(2-6) $y = -\cos x$

삼각함수의 대칭이동과 확대변환

(2-5) $y = -\sin x$
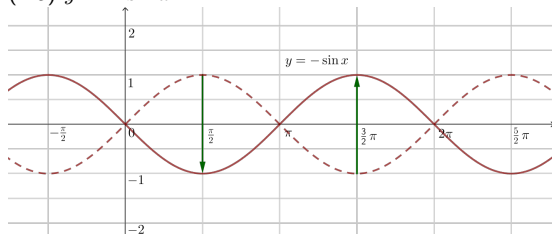
(2-6) $y = -\cos x$

삼각함수의 대칭이동과 확대변환
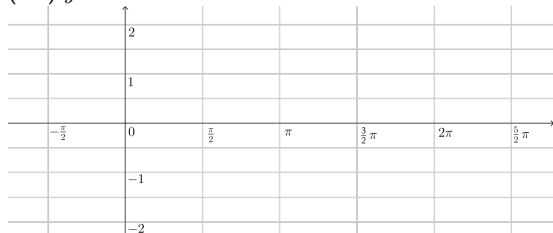
(2-7) $y = \sin 2x$

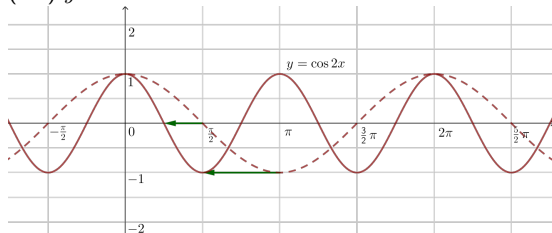(2-8) $y = \sin \frac{1}{2}x$

삼각함수의 대칭이동과 확대변환

(2-7) $y = \sin 2x$

(2-8) $y = \sin \frac{1}{2} x$

삼각함수의 대칭이동과 확대변환

(2-9) $y = \cos 2x$

(2-10) $y = \cos \frac{1}{2}x$

삼각함수의 대칭이동과 확대변환

(2-9) $y = \cos 2x$
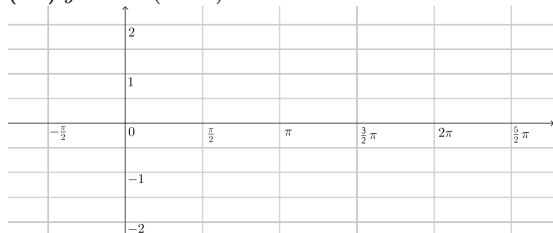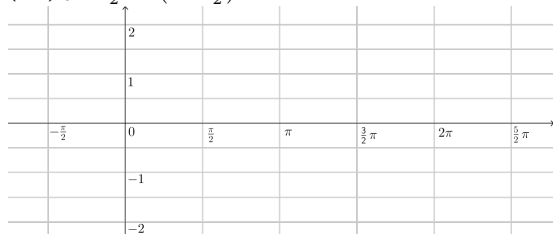

(2-10) $y = \cos \frac{1}{2}x$

목차
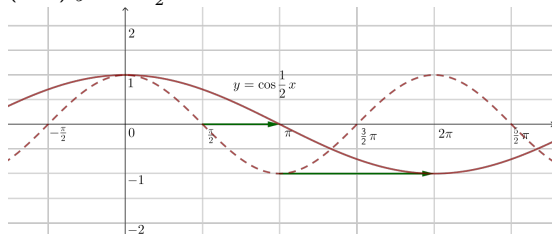
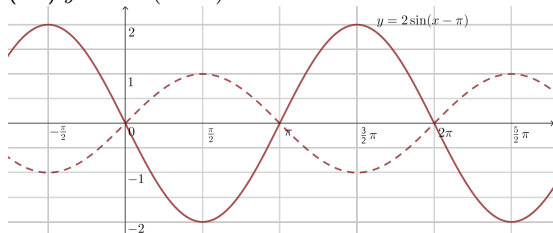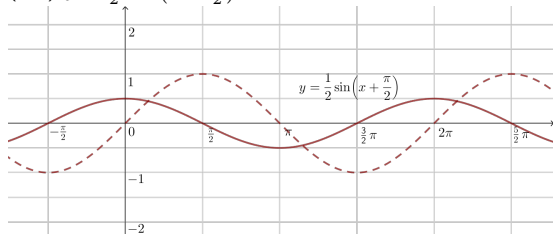# 삼각함수의 일반형

(3-1) $y = 2\sin(x - \pi)$

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

삼각함수의 일반형

(3-1) $y = 2\sin(x - \pi)$

$y = 2\sin(x - \pi)$

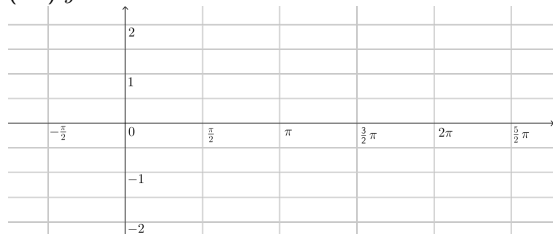(3-2) $y = \frac{1}{2}\sin\left(x + \frac{\pi}{2}\right)$

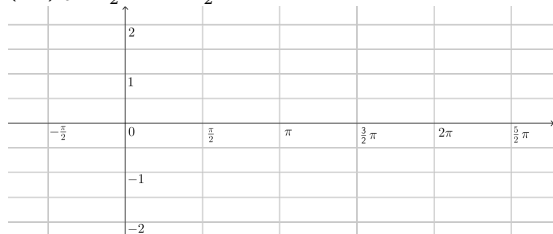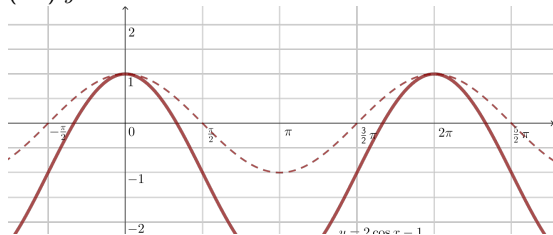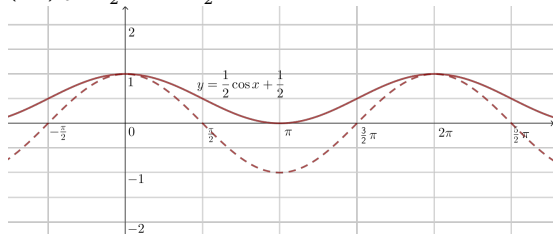$y = \frac{1}{2}\sin\left(x + \frac{\pi}{2}\right)$

삼각함수의 일반형

(3-3) $y = 2\cos x - 1$

(3-4) $y = \frac{1}{2}\cos x + \frac{1}{2}$

삼각함수의 일반형

(3-3) $y = 2\cos x - 1$

$y = 2\cos x - 1$
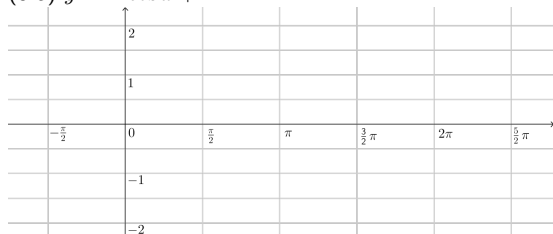
(3-4) $y = \frac{1}{2}\cos x + \frac{1}{2}$
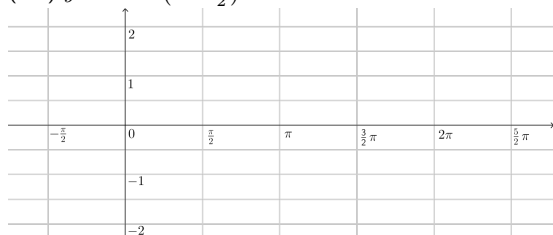

$y = \frac{1}{2}\cos x + \frac{1}{2}$
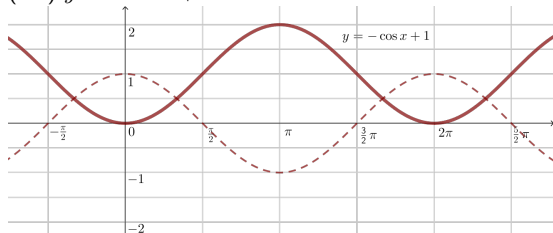
삼각함수의 일반형

(3-5) $y = -\cos x + 1$

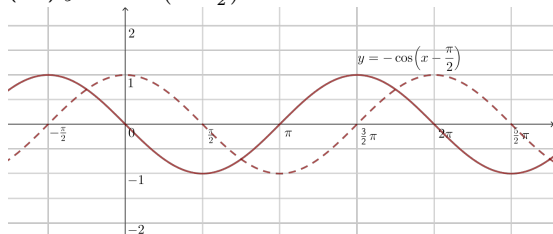(3-6) $y = -\cos\left(x - \frac{\pi}{2}\right)$
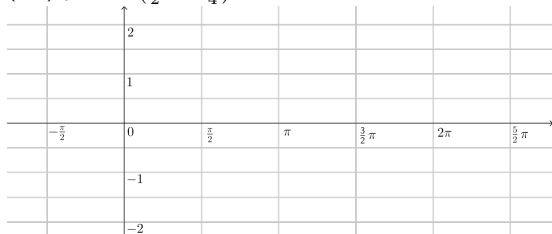
삼각함수의 일반형

(3-5) $y = -\cos x + 1$
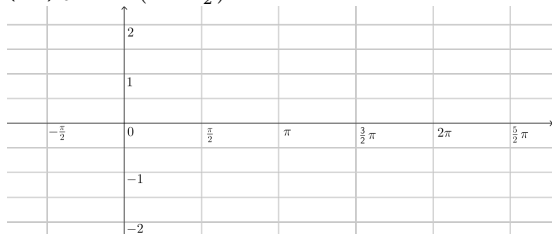

(3-6) $y = -\cos\left(x - \frac{\pi}{2}\right)$

삼각함수의 일반형

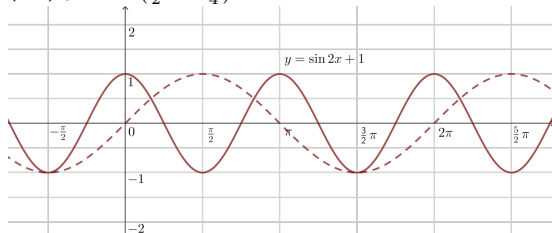(3-7) $y = \sin\left(\frac{1}{2}x - \frac{\pi}{4}\right)$

(3-8) $y = \sin\left(2x + \frac{\pi}{2}\right)$

삼각함수의 일반형

(3-7) $y = \sin\left(\frac{1}{2}x - \frac{\pi}{4}\right)$

$y = \sin 2x + 1$

(3-8) $y = \sin\left(2x + \frac{\pi}{2}\right)$

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