5.5 cont'd

$y = a \sin k(x-b)$ $\quad k>0$

$y = a \cos k(x-b)$

$|a|$ amplitude.

b phase shift

$T = \frac{2\pi}{k}$ period

frequency f $w = \frac{1}{T}$

appropriate interval on which to graph.

one complete period is

$\left[b, b+\frac{2\pi}{k}\right]$. length $\cdot \frac{2\pi}{k}$

or centered interval.

$[a,b]$ length.

$b-a$

$\left[b-\frac{\pi}{k}, b+\frac{\pi}{k}\right]$.

$b+\frac{\pi}{k} - \left(b-\frac{\pi}{k}\right)$

$b+\frac{\pi}{k} - b + \frac{\pi}{k} = \frac{2\pi}{k}$.

$y = -3\sin(\pi x)$ | $|a| = 3$, $b = 0$, $T = \frac{2\pi}{\pi} = \boxed{2}$

$y = -2 + \cos(4\pi x)$ | $|a| = 1$, $T = \frac{2\pi}{4\pi} = \boxed{\frac{1}{2}}$

~~$y = 3$~~ $y = -3\cos(2\pi x + 4\pi)$

$y = a\cos k(x - b)$.

$y = -3\cos 2\pi(x + 2)$.

phase shift $= -2$

$T = \frac{2\pi}{2\pi} = \boxed{1}$

$[-2, -2+1] = [-2, -1]$ ✓

$[b, b+T]$.

$y = 7.9 - 2.1\cos\left(\frac{\pi}{1.56}t\right)$.

$T = \frac{2\pi}{\frac{\pi}{1.56}} = 2 \times 1.56 = 3.12$ | $|a| = 2.1$; $T = 3.12$

$[0, 3.12]$ ✓