

§4.5 day 2

p 328 # 4, 7, 10, 13, 16, 19, 22, 25, 28, 31, 34, 37, 40,
43, 46, 49, 52

$$(4) y = -3 \sin \frac{x}{3}$$

$$\text{ampl} = |-3| = 3$$

$$\text{period} = 2\pi / \frac{1}{3} = 6\pi$$

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

$$\text{ampl} = |-2| = 2$$

$$\text{period} = 2\pi / 1 = 2\pi$$

$$(10) y = \frac{1}{3} \sin 8x$$

$$\text{ampl} = |\frac{1}{3}| = \frac{1}{3}$$

$$\text{period} = 2\pi / 8 = \pi / 4$$

$$(13) y = \frac{1}{4} \sin 2\pi x$$

$$\text{ampl} = |\frac{1}{4}| = \frac{1}{4}$$

$$\text{period} = 2\pi / 2\pi = 1$$

$$(16) f(x) = \cos x$$

$$g(x) = \cos(x + \pi)$$

shift left π units

$$(19) f(x) = \cos x$$

$$g(x) = \cos 2x$$

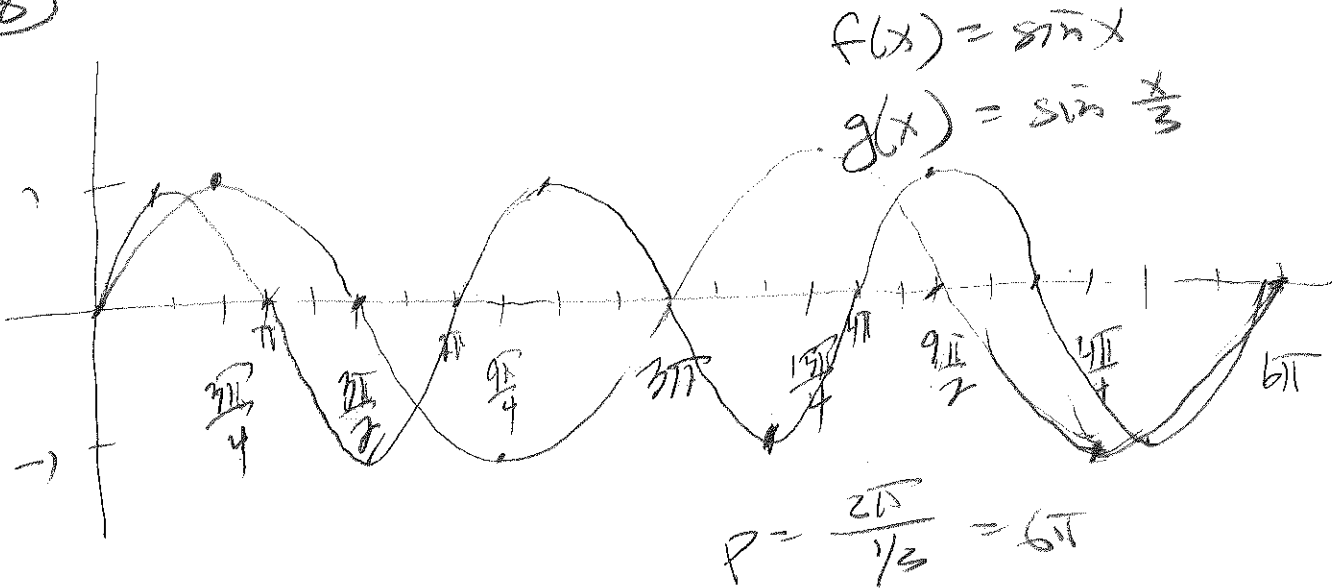
period of $g(x) = \frac{2\pi}{2} = \pi$
which is $\frac{1}{2}$ period
of $f(x)$
(horizontal compression)

22) $f(x) = \cos 4x$
 $g(x) = -2 + \cos 4x$

shift down 2 units

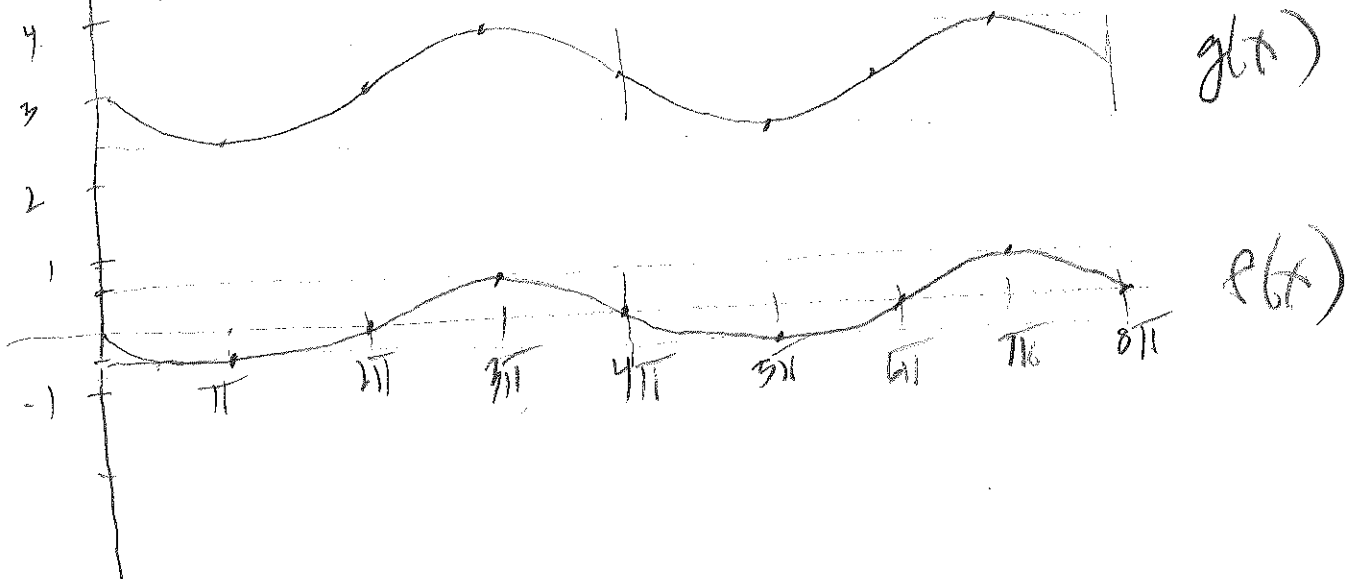
25) $g(x)$ is horizontal shift right π units

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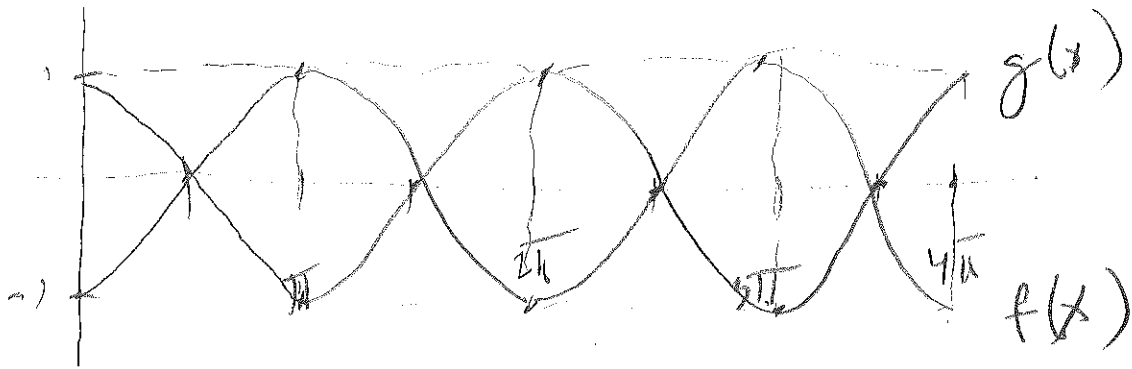


31) $f(x) = -\frac{1}{2} \sin \frac{x}{2}$
 $g(x) = 3 - \frac{1}{2} \sin \frac{x}{2}$

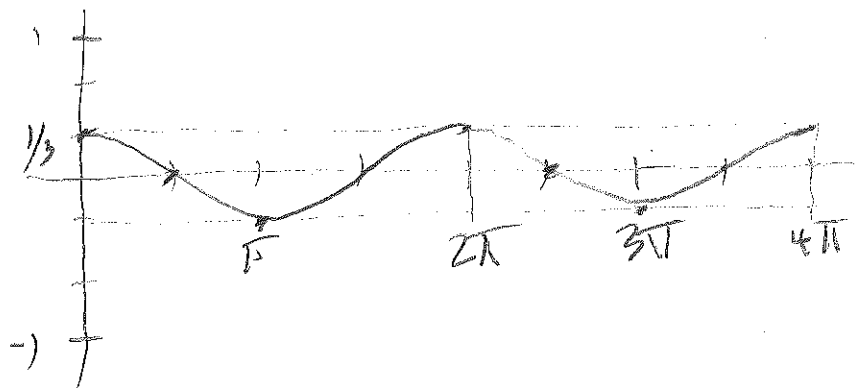
Period = $\frac{2\pi}{1/2} = 4\pi$



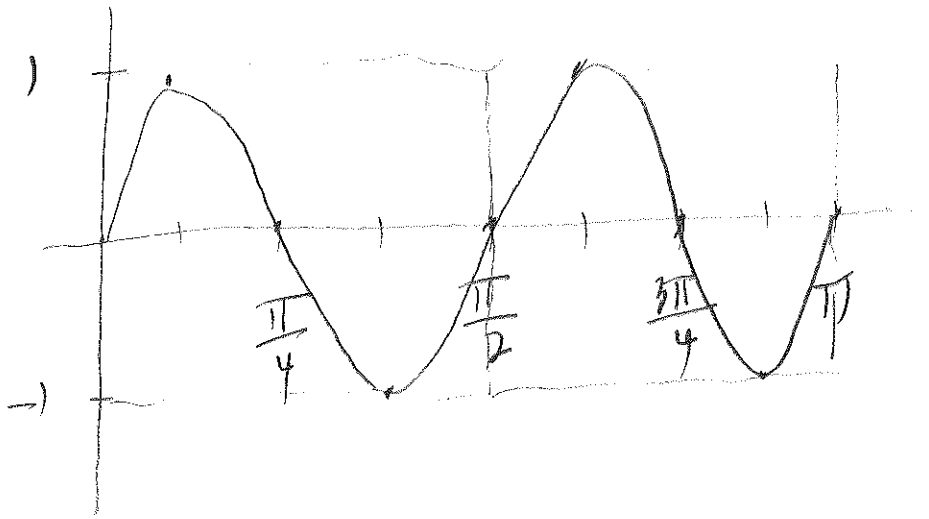
(34) $f(x) = -\cos x$
 $g(x) = -\cos(x - \pi)$



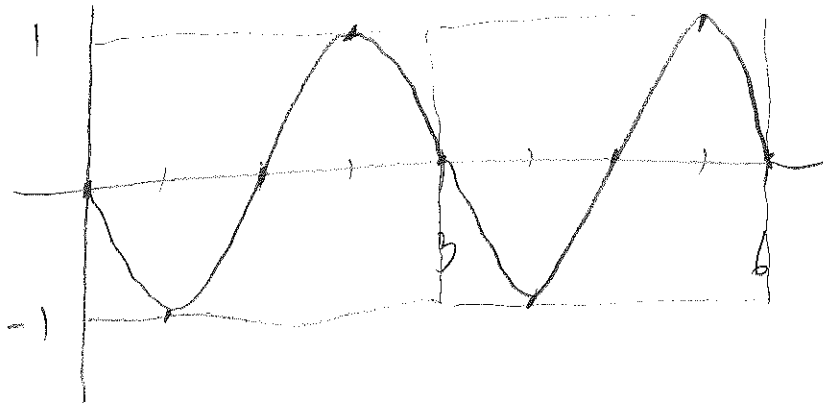
(37) $y = \frac{1}{3} \cos x$



(40) $y = \sin 4x$ $P = \frac{2\pi}{4} = \frac{\pi}{2}$

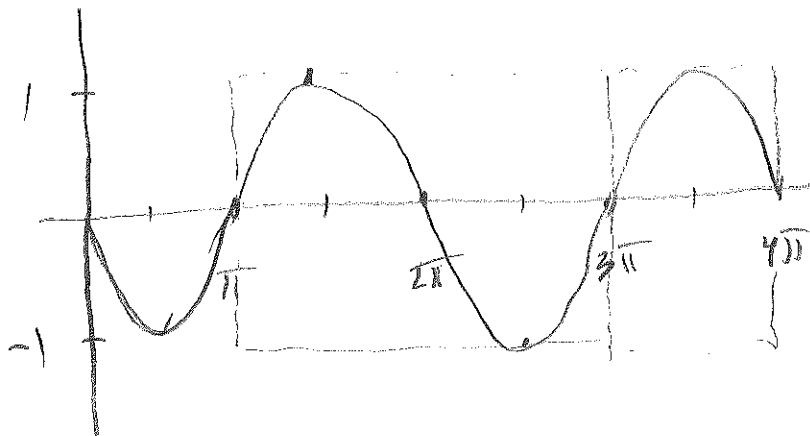


(43) $y = -\sin \frac{2\pi x}{3}$ Period = $\frac{2\pi}{2\pi/3} = 3$



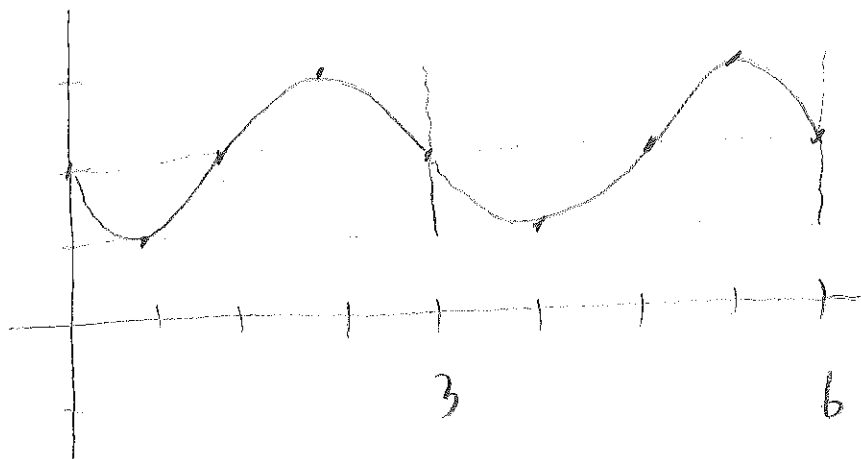
$$(46) y = \sin(x - \pi)$$

shift right π



$$(49) y = 2 - \sin \frac{2\pi x}{3}$$

$$\text{Period} = \frac{2\pi}{2\pi/3} = 3$$



52) $y = 2 \cos x - 3$

ampl = 2
vertical shift down 2

