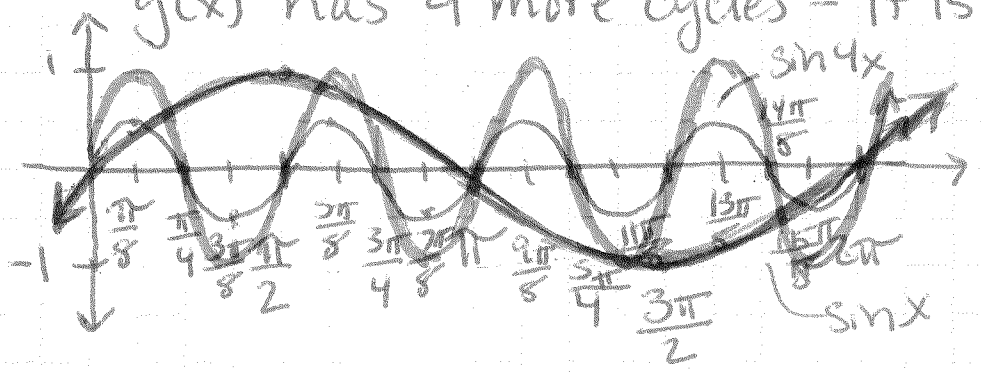
264: 5-13

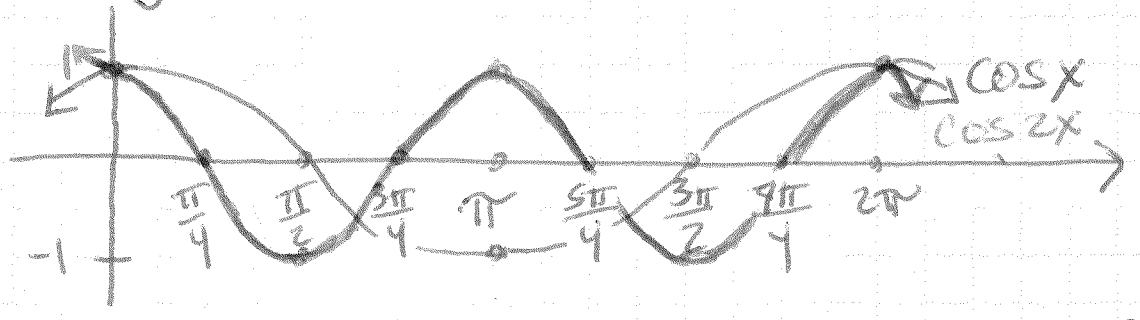
5) $f(x) = \sin(x)$ $g(x) = \sin 4x$ period $= \frac{2\pi}{4} = \frac{\pi}{2}$

g(x) has 4 more cycles – It is compressed h.



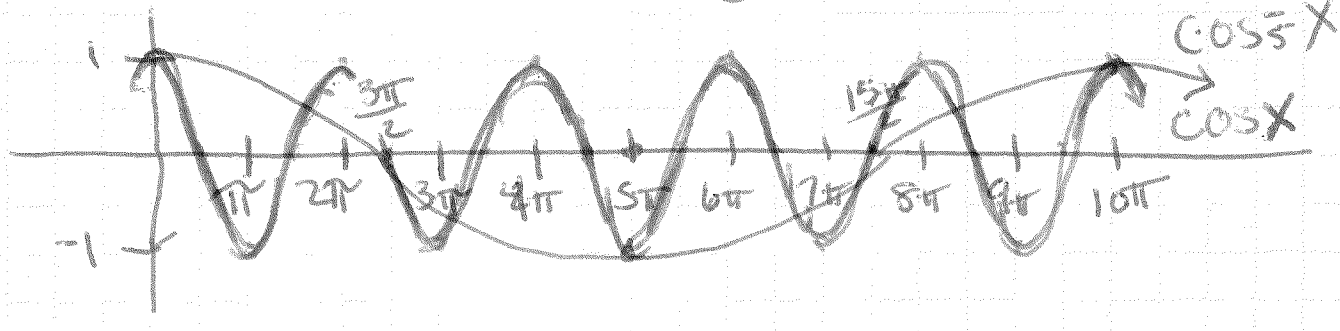
6) $f(x) = \cos(x)$ $g(x) = \cos 2x$ $p = \frac{2\pi}{2} = \pi$

g(x) compressed by 1/2



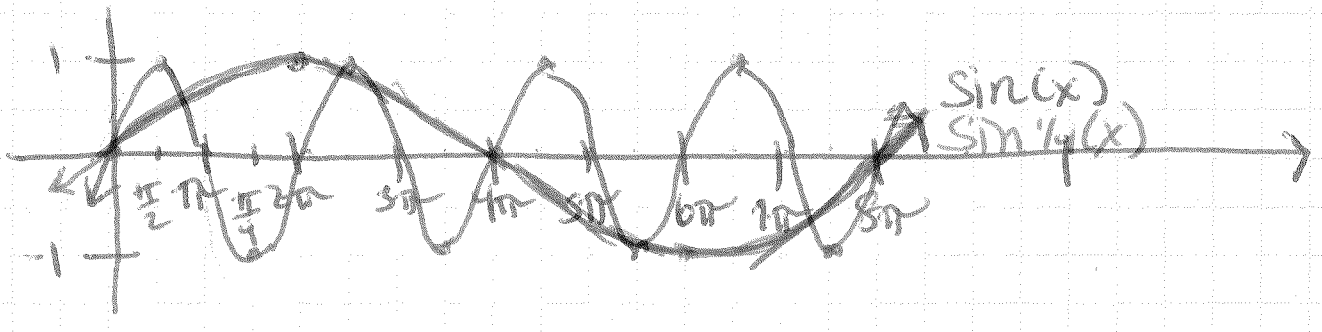
7) $f(x) = \cos x$ $g(x) = \cos \frac{1}{5}x$ period $= \frac{2\pi}{(\frac{1}{5})} = 10\pi$

g(x) is stretched by 5



8. $f(x) = \sin(x)$ $g(x) = \sin\frac{1}{4}x$ $P = \frac{2\pi}{\left(\frac{1}{4}\right)} = 8\pi$

g(x) is expanded horizontally 4 times



9. $f = 165$ hz E3 $a = 0.15$ $y = a\sin bx$

$f = \frac{|b|}{2\pi} = 165$ $|b| = 330\pi$ $b = \pm 330$

$y = 0.15 \sin 330\pi x$

10. $f = 440$ $a = 0.3$

$f = 440 = \frac{|b|}{2\pi}$ $|b| = 880\pi$ $b = \pm 880\pi$

$y = .3 \sin 880\pi x$

11. $f = 932 = \frac{|b|}{2\pi}$ $|b| = 1864\pi$ $b = \pm 1864\pi$

$a = 0.25$

$y = 0.25 \sin 1864\pi x$

12. $f = 1245 = \frac{|b|}{2\pi}$ $|b| = 2490\pi$ $b = \pm 2490\pi$ $y = 0.12 \sin 2490\pi x$

$a = 0.12$

13 $f = 623 = \frac{|b|}{2\pi}$ $|b| = 1246\pi$ $b = \pm 1246\pi$ $y = 0.2 \sin 1246\pi x$

$a = 0.2$