

I. Match each graph to its function. One graph will not be used.

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

2.  $y = \sin\left(x + \frac{\pi}{4}\right)$  G

3.  $y = \cos\left(x - \frac{\pi}{4}\right)$  H

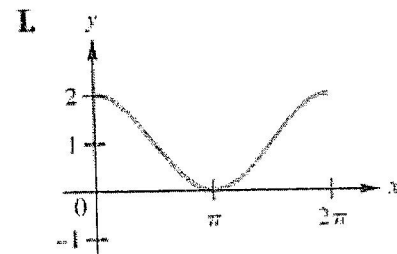
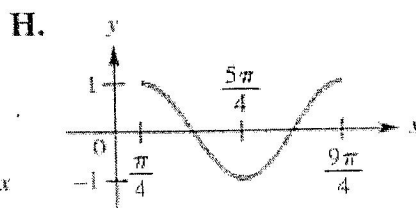
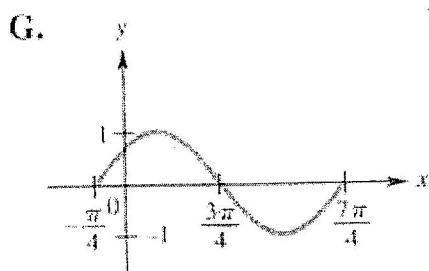
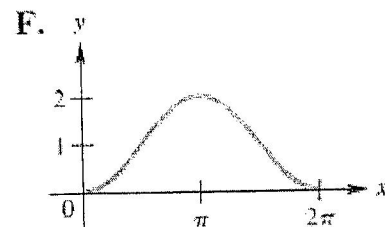
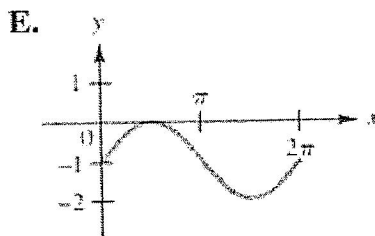
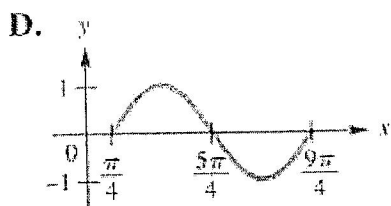
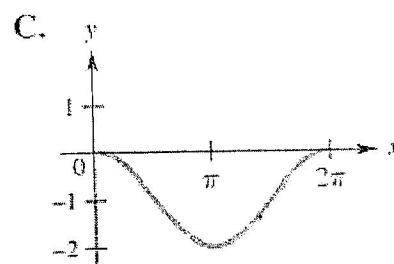
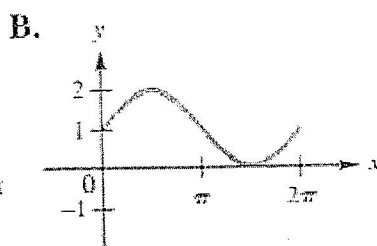
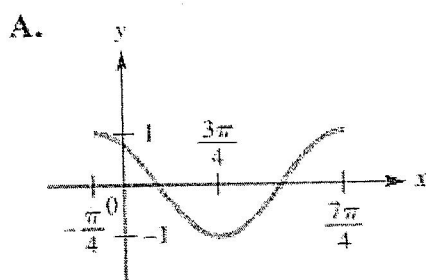
4.  $y = \cos\left(x + \frac{\pi}{4}\right)$  A

5.  $y = 1 + \sin x$  B

6.  $y = -1 + \sin x$  E

7.  $y = 1 + \cos x$  I

8.  $y = -1 + \cos x$  C



II. Match each graph to its function.

(i)  $y = \sin(x/2)$  *a*

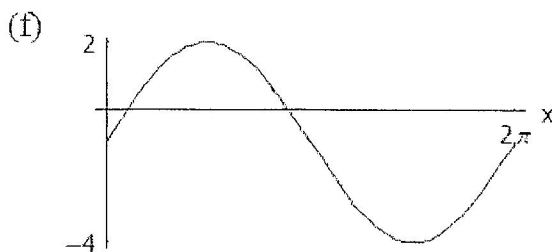
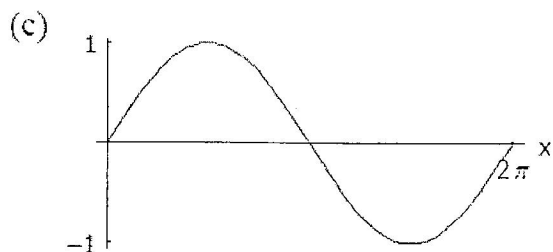
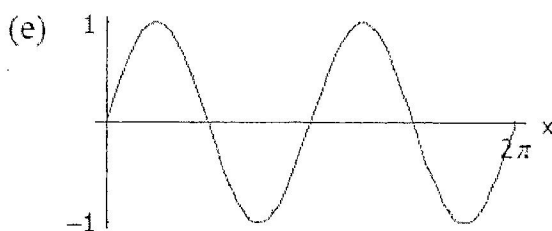
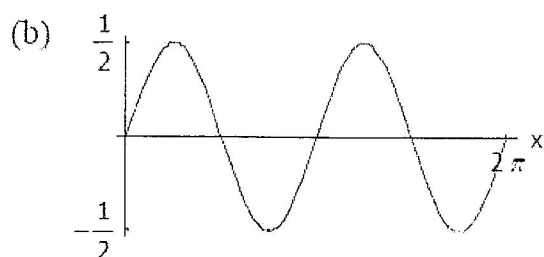
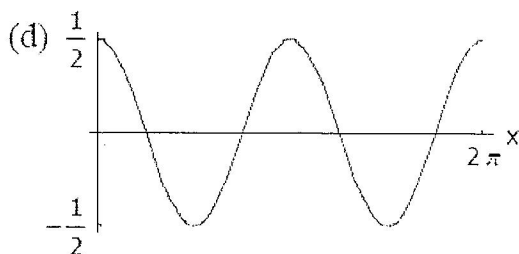
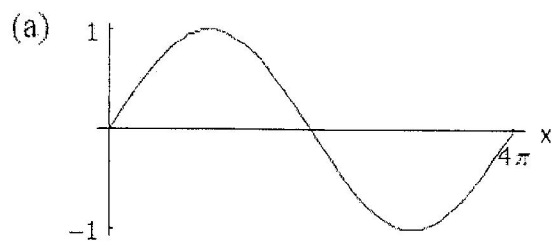
(ii)  $y = \cos(x - \pi/2)$  *c*

(iii)  $y = \frac{1}{2}\cos(2x)$  *d*

(iv)  $y = 3\sin(x) - 1$  *f*

(v)  $y = \frac{1}{2}\sin(2x)$  *b*

(vi)  $y = \sin(2x - 2\pi)$  *e*



III. For each given function:

- Identify the parent graph and describe the transformations on the parent graph to obtain a graph of the given function.
- Name the domain and range.
- Find the amplitude, period, and phase shift.
- Identify any asymptotes.
- Sketch a graph.

1.  $f(x) = -3\cos x - 1$  *D:  $(-\infty, \infty)$  R:  $[-4, 2]$  amp = 3 per =  $2\pi$  p.s. none*

2.  $g(x) = \frac{1}{3}\sin(2x) + 4$  *D:  $(-\infty, \infty)$  R:  $[\frac{11}{3}, \frac{13}{3}]$  amp =  $\frac{1}{3}$  per =  $\pi$  p.s. none*

*y = sin x  
horiz. shrink \*  $\frac{1}{2}$   
vert. shrink \*  $\frac{1}{3}$   
shift up 4*

