Trig Transformations
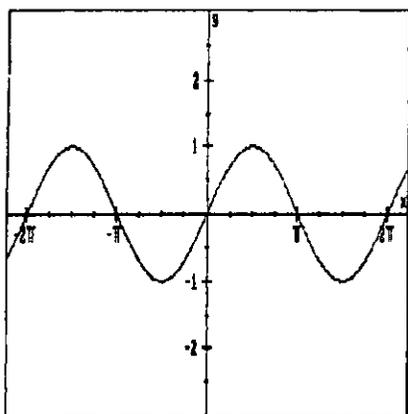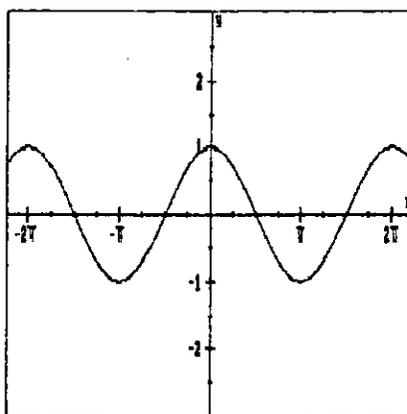
Find 2 (two) equations for each graph.   Use SINE for the 1st equation and COSINE for the 2nd equation.

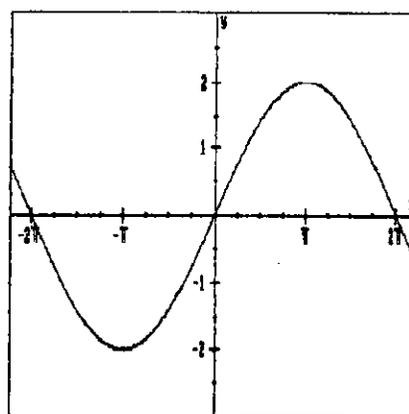1) $y = \sin x$

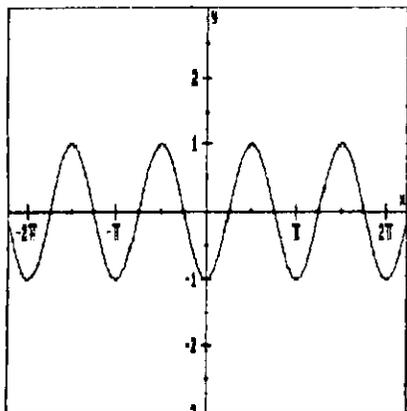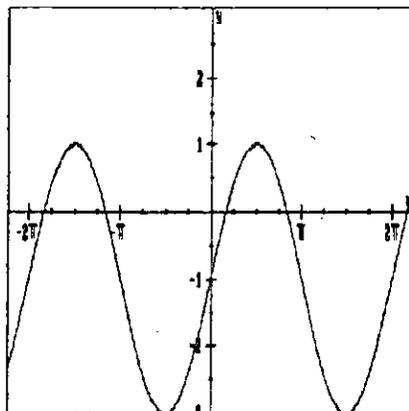$y = \cos\left(x - \frac{\pi}{2}\right)$

2) $y = \cos x$

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

3) $y = 2\sin\frac{1}{2}x$

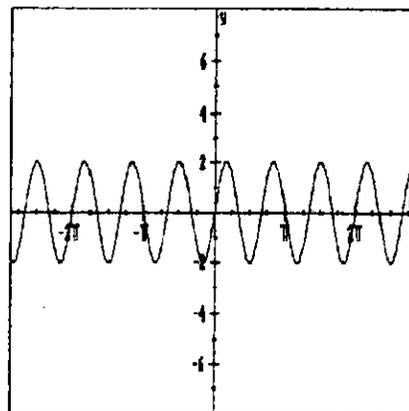$y = 2\cos\left(\frac{1}{2}x - \frac{\pi}{2}\right)$

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

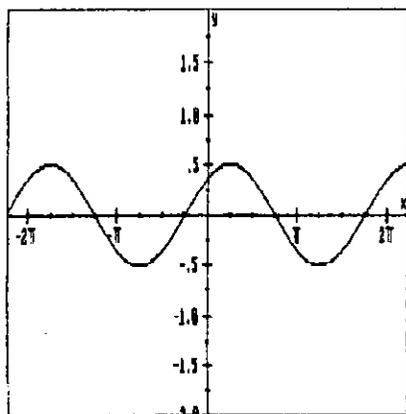$y = -\sin\left(2x + \frac{\pi}{2}\right)$
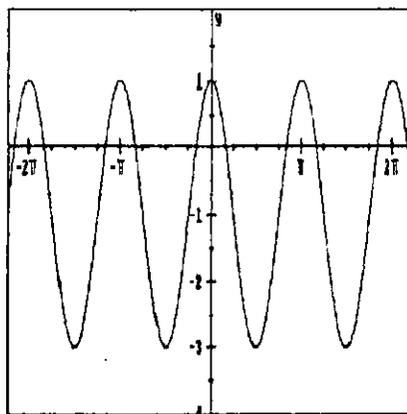
5) $y = 2\sin x - 1$

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

6) $y = 2\sin(3x)$

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

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

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

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

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

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

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