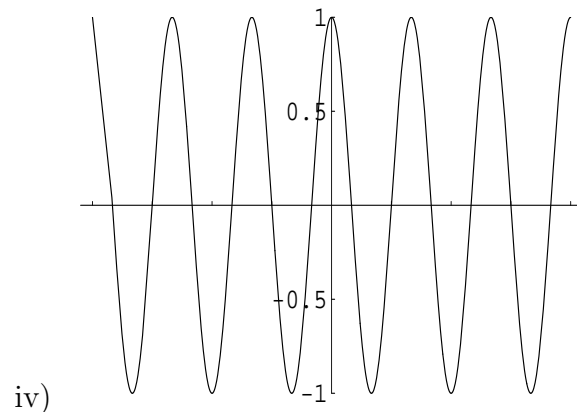
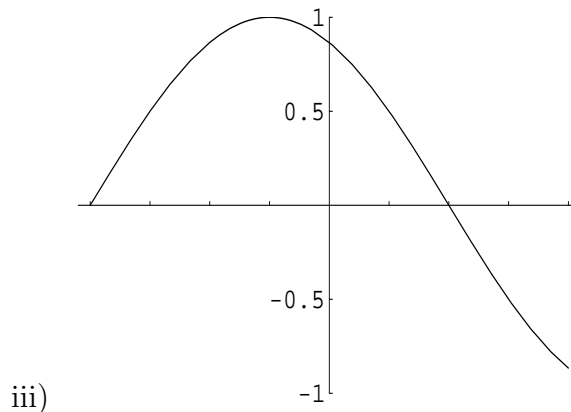
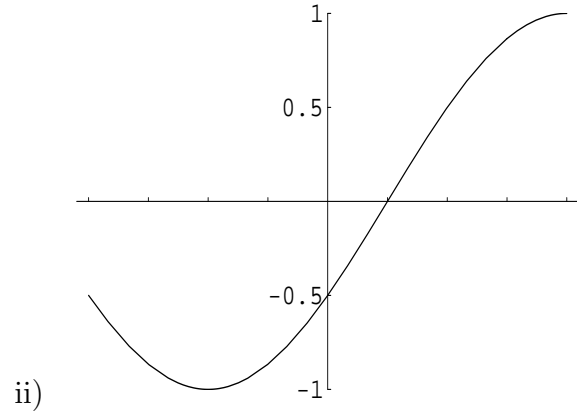
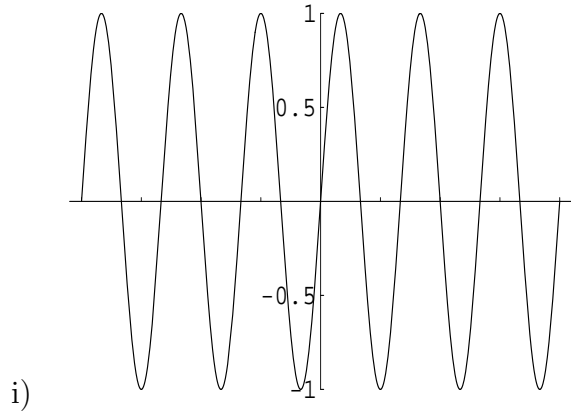


1. (a) Use logarithm properties to write the expression $3 \ln(x^3y) + 2 \ln(y/z^2)$ as a single logarithm.
- (b) Solve the following equation for x : $\frac{1}{2} \ln(x + 3) - \ln x = 0$.
- (c) Solve the following equation for x : $2 \cdot 5^{x/4} = 240$.

2. Determine which of the following graphs matches each given equation.



- (a) $y = \cos \frac{1}{3} \left(x + \frac{\pi}{2} \right)$
- (c) $y = \sin 3 \left(x - \frac{\pi}{2} \right)$

- (b) $y = \sin \frac{1}{3} \left(x - \frac{\pi}{2} \right)$
- (d) $y = \cos 3 \left(x + \frac{\pi}{2} \right)$

3. Find the **exact** value of each expression.

(a) $\sec \left(\frac{\pi}{4} \right)$

(b) $\arcsin \left(-\frac{\sqrt{3}}{2} \right)$

(c) $\arccos \left(\sin \left(\frac{\pi}{3} \right) \right)$

(d) $\tan \left(\sin^{-1} \left(\frac{\sqrt{2}}{2} \right) \right)$

4. If $\cos t = -\frac{4}{5}$ and $\frac{\pi}{2} < t < \pi$, determine the following:

(a) $\cos 2t$

(b) $\sin 2t$

(c) $\sin(t/2)$

5. Complete the table.