

Section 8.2

2) period = 2π , amplitude = 2

3) period = 4, amplitude = 6

4) period = 8, amplitude = 3

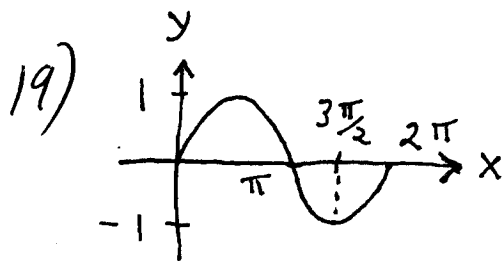
5) period = 4, amplitude = 2

6) period = 20, amplitude = 5

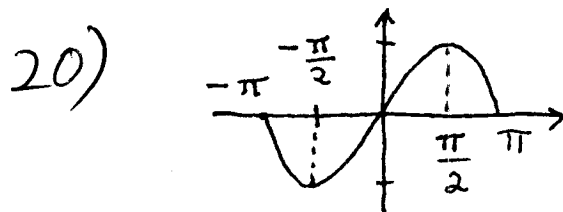
10) $F = (\pi, 0) \approx (3.142, 0)$

11) $G = (\frac{5\pi}{2}, 1) \approx (7.854, 1)$

17) $E = (-\pi, 0) \approx (-3.142, 0)$



$y = \sin x$ is increasing
for $\frac{3\pi}{2} < x < 2\pi$.

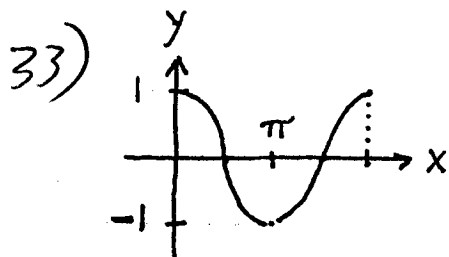


$y = \sin x$ is increasing
for $-\frac{\pi}{2} < x < \frac{\pi}{2}$.

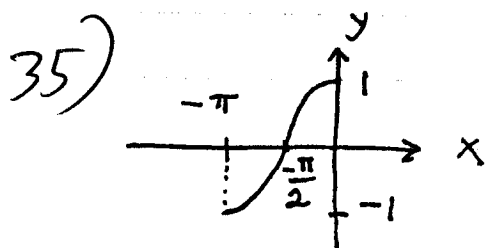
27) $E = (\frac{\pi}{2}, 0) = (1.571, 0)$

30) $F = (\pi, -1) = (3.142, -1)$

31) $B = (-\frac{5\pi}{2}, 0) = (-7.854, 0)$



$y = \cos x$ is decreasing
for $0 < x < \pi$.



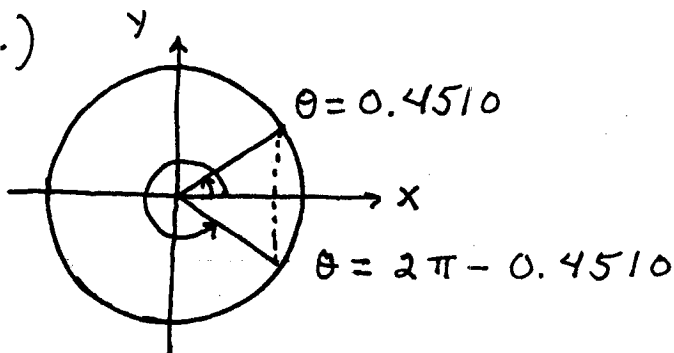
$y = \cos x$ is increasing
for $-\frac{\pi}{2} < x < 0$.

41)

a.) $\cos x = 0.9 \rightarrow x \approx 0.45$

b.) $\cos x = 0.9 \rightarrow x = \cos^{-1}(0.9) = 0.4510$

c.)



$\cos x = 0.9 \rightarrow$

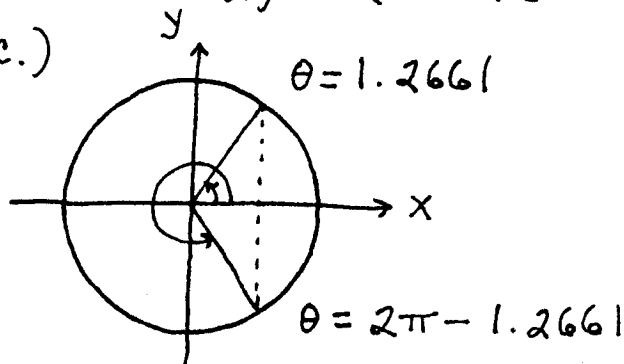
$x = 2\pi - 0.4510$
 $= 5.8322$

43)

a.) $\cos x = 0.3 \rightarrow x \approx 1.25$

b.) $\cos x = 0.3 \rightarrow x = \cos^{-1}(0.3) = 1.2661$

c.)

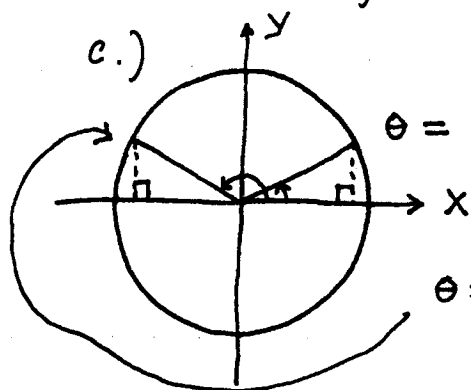


$\cos x = 0.3 \rightarrow$

$x = 2\pi - 1.2661$
 $= 5.0171$

46) a.) $\sin X = 0.1 \rightarrow X \approx 0.1$

b.) $\sin X = 0.1 \rightarrow X = \sin^{-1}(0.1) = 0.1002$



$\theta = 0.1002 \quad \sin X = 0.1 \rightarrow$

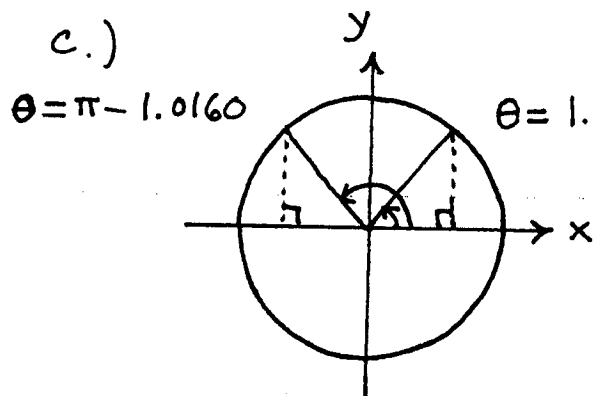
$X = \pi - 0.1002$

$= 3.0414$

$\theta = \pi - 0.1002$

50) a.) $\sin X = 0.85 \rightarrow X \approx 1.05$

b.) $\sin X = 0.85 \rightarrow X = \sin^{-1}(0.85) = 1.0160$



$\theta = 1.0160$

$\sin X = 0.85 \rightarrow$

$X = \pi - 1.0160$

$= 2.1256$

56) a.) $y = \sin x$ is maximum ($y=1$) when $x = \frac{\pi}{2}$ and $\cos(\frac{\pi}{2}) = 0$.

b.) $y = \cos x$ is maximum ($y=1$) when $x=0$ or $x=2\pi$ and $\sin(0) = 0 = \sin(2\pi)$