Do these as if in a test, without looking at your notes or textbook, time yourself, then check your answers. Use the homework assignments and WeBWorK for review of topics you missed. Then test yourself again. **Please note:** These are not "sample tests", but if you can do the work on both sample tests (thinking it through, not memorizing what the steps or answers look like) in the time indicated, you should be prepared for what you will see on Test 4.

Self-Test A: allow 50 minutes

1) State the amplitude, period, and phase shift of the function $f(t) = \sin(4t + \pi)$ and sketch one period of its graph: make sure to label the five important points.

2) Find the exact value of $\cos^{-1}\left(-\frac{\sqrt{3}}{2}\right)$

3) Find all solutions (exact values) of $\tan x = \sqrt{3}$

4) Find all solutions (exact values) of $2\sin x = \sqrt{2}$

5) Convert to polar form (exact values): $4 - 4i$

6) Multiply, and write your answer in rectangular form (exact values):
$2\left(\cos\frac{\pi}{12} + i\sin\frac{\pi}{12}\right) \cdot 4\left(\cos\frac{\pi}{6} + i\sin\frac{\pi}{6}\right)$

7) Divide, and write your answer in rectangular form (exact values):
$$\frac{12\left(\cos\frac{7\pi}{12} + i\sin\frac{7\pi}{12}\right)}{3\left(\cos\frac{5\pi}{12} + i\sin\frac{5\pi}{12}\right)}$$

Self-Test B: allow 50 minutes

1) State the amplitude, period, and phase shift of the function $f(t) = -3\cos\left(\frac{1}{2}t\right)$ and sketch one period of its graph: make sure to label the five important points.

2) Find the exact value of $\tan^{-1}(-1)$

3) Find all solutions (exact values) of the equation $2\sin x = -1$

4) Find all solutions (exact values) of the equation $\cos^2 x = 2\cos x$

5) Convert to polar form (exact values): $1 + \sqrt{3}i$

6) Multiply, and write your answer in rectangular form (exact values):
$3\left(\cos\frac{\pi}{8} + i\sin\frac{\pi}{8}\right) \cdot 2\left(\cos\frac{\pi}{8} + i\sin\frac{\pi}{8}\right)$

7) Divide, and write your answer in rectangular form (exact values):
$$\frac{4\left(\cos\frac{\pi}{2} + i\sin\frac{\pi}{2}\right)}{3\left(\cos\frac{5\pi}{6} + i\sin\frac{5\pi}{6}\right)}$$