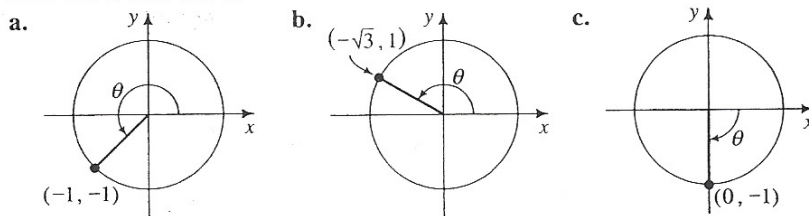


## Chapter 7 Test

1. a. Convert  $-90^\circ$  to radians. Give the answer in terms of  $\pi$ .  
 b. Convert  $212^\circ$  to radians. Give the answer to the nearest hundredth.
2. a. Convert  $\frac{7\pi}{6}$  radians to degrees.  
 b. Convert 3.5 radians to degrees. Give the answer to the nearest ten minutes or tenth of a degree.
3. Find two angles, one positive and one negative, that are coterminal with each given angle.
  - a.  $-100^\circ$
  - b.  $320.3^\circ$
  - c.  $\frac{7\pi}{4}$
  - d.  $220^\circ 40'$
4. A sector of a circle has radius 5 cm and central angle  $137^\circ$ . Find its approximate arc length and area.
5. The sun is about  $9 \times 10^7$  mi from Earth, and its apparent size is about 0.0043 radians. What is the sun's approximate diameter?
6. Find  $\sin \theta$  and  $\cos \theta$ .

Extra Credit  $\rightarrow$



- No Calc.  $\rightarrow$
7. Complete each statement with one of the symbols  $<$ ,  $>$ , or  $=$ .
    - a.  $\sin 70^\circ$   $\frac{?}{?}$   $\sin 65^\circ$
    - b.  $\cos 70^\circ$   $\frac{?}{?}$   $\cos 65^\circ$
    - c.  $\cos 40^\circ$   $\frac{?}{?}$   $\cos 320^\circ$
    - d.  $\sin 313^\circ$   $\frac{?}{?}$   $\sin 314^\circ$
  8. Give the exact value of each expression in simplest radical form.
    - a.  $\sin \frac{5\pi}{6}$
    - b.  $\cos(-180^\circ)$
    - c.  $\sin 210^\circ$
    - d.  $\cos \frac{5\pi}{6}$
  9. Give the exact value of each expression or state that the value is undefined.
    - a.  $\csc 135^\circ$
    - b.  $\sec \frac{2\pi}{3}$
    - c.  $\cot(-60^\circ)$
    - d.  $\tan(-\pi)$
  10. If  $\cot x = -\frac{1}{3}$  where  $\frac{\pi}{2} < x < \pi$ , find the values of the other five trigonometric functions.
  11. Give the exact value of each expression.
    - a.  $\tan^{-1}\left(-\frac{\sqrt{3}}{3}\right)$
    - b.  $\sec\left(\sin^{-1}\frac{1}{2}\right)$
    - c.  $\csc\left(\cos^{-1}\left(-\frac{3}{5}\right)\right)$

*Try these!*
  12. **Writing** To obtain the inverse cosine function, we restrict the domain of  $f(x) = \cos x$  to  $0 \leq x \leq \pi$ . Explain why this restriction is necessary.